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# Gazette

## Agricultural and veterinary chemicals

APVMA Special Gazette, 30 July 2024

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Veterinary Medicines Authority**

The *Agricultural and Veterinary Chemical Code Act 1994* (the Act) commenced on 15 March 1995. The Agricultural and Veterinary Chemicals Code (the Agvet Code) scheduled to the Act requires notices to be published in the *Gazette* containing details of the registration of agricultural and veterinary chemical products and other approvals granted by the Australian Pesticides and Veterinary Medicines Authority. The Agvet Code and related legislation also requires certain other notices to be published in the *Gazette*. A reference to Agvet Codes in this publication is a reference to the Agvet Code in each state and territory jurisdiction.

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## **General information**

The APVMA Gazette is published fortnightly and contains details of the registration of agricultural and veterinary chemicals products and other approvals granted by the APVMA, notices as required by the Agricultural and Veterinary Chemicals Code (the Agvet Code) and related legislation and a range of regulatory material issued by the APVMA.

Pursuant to section 8J(1) of the Agvet Code, the APVMA has decided that it is unnecessary to publish details of applications made for the purpose of notifying minor variations to registration details. The APVMA will however report notifications activity in quarterly statistical reports.

## **Distribution and subscription**

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## **APVMA contacts**

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For enquiries on APVMA Gazette content, please refer to the individual APVMA contacts listed under each notice.

## **Privacy**

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## Notice under section 34AB of the Agricultural and Veterinary Chemicals Code: paraquat reconsideration – proposed decisions on reconsideration

- 1) I, Sheila Logan, Executive Director, Risk Assessment Capability, as the delegate of the Australian Pesticides and Veterinary Medicines Authority (APVMA) am proposing to make regulatory decisions in relation to the reconsideration of paraquat active constituent approvals, product registrations, and label approvals being conducted under Part 2, Division 4 of the Agricultural and Veterinary Chemicals Code scheduled to the *Agricultural and Veterinary Chemicals Code Act 1994* (Agvet Code).
- 2) This notice is issued under section 34AB of the Agvet Code and relates to the reconsideration of paraquat active constituent approvals, product registrations and label approvals listed in Attachment A of this notice. This reconsideration extends to compliance with any requirement prescribed by the regulations for those approvals and registrations listed in Attachment A.
- 3) The Draft Statement of Reasons for the proposed decisions is included as Attachment B of this notice.
- 4) The information on which the reasons are based is set out in Attachment C of this notice.
- 5) Pursuant to section 34A(1) of the Agvet Code, I propose to:
  - a. vary the conditions of paraquat active constituent approvals listed in Table 1 in Attachment A of this notice, in a manner set out in paragraphs 8) of the statement of reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - b. vary the relevant particulars and conditions of the chemical product registrations listed in Table 1 of Attachment A, in a manner set out in paragraphs 17), and 27) of the Draft Statement of Reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - c. vary the relevant particulars of the label approvals listed in Table 1 of Attachment A in the manner set out in paragraph 40) of the Draft Statement of Reasons, and as reflected in the proposed labels in Attachment D of this notice, to allow affirmation under section 34(1) of the Agvet Code.
- 6) The *Paraquat Review Technical Report*, contained in Attachment E, summarises the technical and scientific assessments of the hazards and risks associated with paraquat that have been completed by the APVMA's staff of relevantly qualified experts in chemistry, toxicology and worker health and safety, residues and trade, and the environment. I have had regard to their reports and advice, which are summarised in the *Paraquat Review Technical Report*, and accept the findings as correct. The *Paraquat Review Technical Report* is published to provide a record of the assessments that does not contain any of the confidential commercial information included in the APVMA's internal reports referred to in Attachment C. The *Paraquat Review Technical Report* is incorporated into this notice to record the material findings of fact and reasons for my proposed decision. Where the Draft Statement of Reasons at Attachment B refers to the *Paraquat Review Technical Report*, I intend to incorporate and adopt all relevant findings of fact and reasons within the *Paraquat Review Technical Report* into this notice of my proposed decision.

## Written submissions are invited

- 7) I invite written submissions on the proposed course of action. All submissions will be considered by the APVMA prior to finalisation of this reconsideration.
- 8) Submissions or requests for further information can be sent to:

Chemical Review  
Australian Pesticides and Veterinary Medicines Authority  
GPO Box 3262  
Sydney NSW 2001

**Phone:** +61 2 6770 2400  
**Email:** [chemicalreview@apvma.gov.au](mailto:chemicalreview@apvma.gov.au)

**Please note:** Submissions will be published on the APVMA website, unless you have asked for the submission to remain confidential (see [public submission coversheet](#)).

- Please lodge your submission with a public submission coversheet, which provides options for how your submission will be published.
  - Note that all submissions received are subject to legislative requirements, including the *Freedom of Information Act 1982*, the *Privacy Act 1988* and the Agvet Code. In providing your submission to the APVMA, you agree to the APVMA publicly disclosing your submission in whole or summary form. The APVMA confirms that if your submission includes confidential commercial information or protected information as defined in the Agvet Code, such information will be subject to the relevant provisions of the Agvet Code including relevant limitations on use and disclosure by the APVMA.
- 9) The closing date for submissions is 29 October 2024.

Sheila Logan

Executive Director, Risk Assessment Capability

With the delegated authority under sections 11, 32 and 44 of the *Agricultural and Veterinary Chemicals (Administration) Act 1992*.

Date: 30 July 2024

## Attachments:

Note: The below Attachments form part of this Notice.

**Attachment A:** Active constituent approval(s), product registration(s) and approved label(s) placed under reconsideration.

**Attachment B:** Draft Statement of Reasons

**Attachment C:** Information on which the reasons are based.

**Attachment D:** Proposed sample labels for paraquat chemical products.

**Attachment E:** *Paraquat Review Technical Report*

## Contact information

For any enquiries or further information about this matter, please contact:

Chemical Review  
Australian Pesticides and Veterinary Medicines Authority  
GPO Box 3262  
Sydney NSW 2001

**Phone:** +61 2 6770 2400

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## Attachment A: Active constituent approval(s), product registration(s) and label approval(s) placed under reconsideration

**Table 1: Active constituent approval(s), product registration(s) and associated label approval(s) placed under reconsideration that the APVMA is proposing to vary to allow affirmation.**

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat	Active	44249	Paraquat Dichloride Manufacturing Concentrate	Syngenta Australia Pty Ltd	N/A
Paraquat	Active	44387	Paraquat Dichloride Manufacturing Concentrate	Nufarm Australia Limited	N/A
Paraquat	Active	47747	Paraquat Dichloride Manufacturing Concentrate	UPL Australia Pty Ltd	N/A
Paraquat	Active	48272	Paraquat Dichloride Manufacturing Concentrate	Syngenta Australia Pty Ltd	N/A
Paraquat	Active	51041	Paraquat Dichloride Manufacturing Concentrate	Ronic International Pty Limited	N/A
Paraquat	Active	51678	Paraquat Dichloride Manufacturing Concentrate	Unisun Chemicals Pty Ltd	N/A
Paraquat	Active	54043	Paraquat Dichloride Manufacturing Concentrate	Halley International Enterprise (Australia) Pty Ltd	N/A
Paraquat	Active	54131	Paraquat Dichloride Manufacturing Concentrate	Capital Commodities (Vic) Pty. Ltd.	N/A
Paraquat	Active	55327	Paraquat Dichloride Manufacturing Concentrate	ADAMA Australia Pty Limited	N/A
Paraquat	Active	55682	Paraquat Dichloride Manufacturing Concentrate	Imtrade Australia Pty Ltd	N/A
Paraquat	Active	55966	Paraquat Dichloride Manufacturing Concentrate	Syngenta Australia Pty Ltd	N/A
Paraquat	Active	56809	Paraquat Dichloride Manufacturing Concentrate	Conquest Crop Protection Pty Ltd	N/A
Paraquat	Active	58230	Paraquat Dichloride Manufacturing Concentrate	Sinon Australia Pty Limited	N/A
Paraquat	Active	59171	Paraquat Dichloride Manufacturing Concentrate	Agrogill Chemicals Pty Ltd	N/A
Paraquat	Active	64565	Paraquat Dichloride Manufacturing Concentrate	FMC Australasia Pty Ltd	N/A
Paraquat	Active	64765	Paraquat Dichloride Manufacturing Concentrate	Sharda Worldwide Exports Pvt Ltd	N/A
Paraquat	Active	69493	Paraquat Dichloride Manufacturing Concentrate	Grow Choice Pty Limited	N/A
Paraquat	Active	87171	Paraquat Dichloride Manufacturing Concentrate	Agrogill Chemicals Pty Ltd	N/A
Paraquat	Active	89426	Paraquat Dichloride	Hebei Shanli Chemical Company Limited	N/A
Paraquat	Active	91420	Paraquat dichloride Technical concentrate	Jiangsu Noon Crop Science CO., LTD	N/A
Paraquat	Product	46531	Gramoxone 250 Herbicide	Syngenta Australia Pty Ltd	46531/03, 46531/04, 46531/0407, 46531/0610, 46531/0700, 46531/0803,

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
					46531/0806, 46531/0899, 46531/0901, 46531/56394
Paraquat	Product	48760	Uniquat 250 Herbicide	UPL Australia Pty Ltd	48760/01, 48760/0108, 48760/0505, 48760/0906
Paraquat	Product	51958	Accensi Paraquat 250 Herbicide	Accensi Pty Ltd	51958/0202, 51958/0410, 51958/0699, 51958/0904, 51958/58698
Paraquat	Product	52141	Kendon Sprayquat 250 Herbicide	Kendon Chemicals & Mnfg Co Pty Ltd	52141/0500, 52141/0999
Paraquat	Product	53381	Imtrade Paraquat 250 Herbicide	Imtrade Australia Pty Ltd	53381/1000, 100253, 106312, 51336
Paraquat	Product	53919	Nufarm Shirquat Herbicide	Nufarm Australia Limited	53919/0201, 53919/0210, 53919/0310, 53919/0606, 53919/54631, 53919/116320, 53919/125997, 53919/138280, 53919/139743
Paraquat	Product	54520	Halley Paraquat 250 Herbicide	Halley International Enterprise (Australia) Pty Ltd	54520/0801, 54520/1202
Paraquat	Product	54522	Spraytop 250 SL Herbicide	ADAMA Australia Pty Limited	54522/0510, 54522/0605, 54522/1201, 54522/1204, 54522/53360, 54522/63209
Paraquat	Product	56102	Kenso Agcare Para-Ken 250 Herbicide	Kenso Corporation (M) Sdn. Bhd.	56102/0610, 56102/0702, 56102/53089, 56102/61702
Paraquat	Product	57817	Conquest Explode 250 Herbicide	Conquest Crop Protection Pty Ltd	57817/0307, 57817/0510, 57817/0803
Paraquat	Product	58841	Genfarm Paraquat 250 Herbicide	Nutrien Ag Solutions Limited	58841/0505, 58841/0606, 58841/1005, 58841/48839, 58841/60017
Paraquat	Product	58992	Sinmosa 250 Herbicide	Sinon Australia Pty Limited	58992/0105, 58992/50026, 58992/53184, 58992/59400, 58992/101535
Paraquat	Product	59419	Inferno Herbicide	Sipcam Pacific Australia Pty Ltd	59419/0505, 59419/102920, 59419/118753
Paraquat	Product	61254	Biotis Paraquat 250 Herbicide	Biotis Life Science Pty Ltd	61254/0507, 61254/0510
Paraquat	Product	61869	Titan Paraquat 250 Herbicide	Titan Ag Pty Ltd	61869/0507, 61869/0510, 61869/0608, 61869/139390



Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat	Product	62096	Choice Paraquat 250 Herbicide	Grow Choice Pty Limited	62096/0707, 62096/60105
Paraquat	Product	63090	Ozcrop Paraquat 250 Herbicide	Oz Crop Pty Ltd	63090/0708
Paraquat	Product	64281	Farmalinx Parquat 250 Herbicide	Farmalinx Pty Ltd	64281/0809
Paraquat	Product	64430	Kenso Agcare Para-Ken 334 Herbicide	Kenso Corporation (M) Sdn. Bhd.	64430/0610, 64430/54874, 64430/61703, 64430/114792
Paraquat	Product	64588	Smart Paraquat 250 Herbicide	Crop Smart Pty Ltd	64588/48715, 64588/60109, 64588/118398
Paraquat	Product	64651	RC Paraquat 250 Herbicide	Ruralchem Pty Ltd	64651/0410
Paraquat	Product	64706	Fosterra Paraquat 250 Herbicide	Fosterra Pty Ltd	64706/49009
Paraquat	Product	64731	Agro-Essence Paraquat 250SL	Agro-Alliance (Australia) Pty Ltd	64731/49093, 64731/53446, 64731/54621
Paraquat	Product	65148	Trio Paraquat 250 Herbicide	CTS Chemicals Pty Ltd	65148/50279, 65148/135965
Paraquat	Product	65524	Proterra Paraquat 250 Herbicide	Proterra Pty Ltd	65524/51120
Paraquat	Product	65537	Sanonda Herbicide Paraquat 250sl	Sanonda (Australia) Pty Ltd	65537/51150
Paraquat	Product	65694	Rainbow Paraquat 250 SL Herbicide	Shandong Rainbow International Co Ltd	65694/51593
Paraquat	Product	65713	Pacific Paraquat 250 Herbicide	Pacific Agriscience Pty Ltd	65713/51679
Paraquat	Product	66103	Apparent Paraquat 250 Herbicide	Titan Ag Pty Ltd	66103/53597, 66103/137280
Paraquat	Product	66249	AW Putout 250 Herbicide	Agri West Pty Limited	66249/53075
Paraquat	Product	66309	Huilong Paraquat 250 Herbicide	Huilong Agrochemicals Australia Pty Ltd	66309/53355, 66309/107521
Paraquat	Product	66531	ACP Paraquat 250 Herbicide	Australis Crop Protection Pty Ltd	66531/53829
Paraquat	Product	66548	Echem Paraquat 250 Herbicide	Echem (Aust) Pty Limited	66548/53852
Paraquat	Product	67163	Easyfarm Paraquat 250 SL Herbicide	Easyfarm Pty Ltd	67163/55370, 67163/59774, 67163/120285
Paraquat	Product	67307	AC Piston 250 Herbicide	Axichem Pty Ltd	67307/55741
Paraquat	Product	67437	Agroquat 250 Herbicide	Agrogill Chemicals Pty Ltd	67437/56038
Paraquat	Product	67888	Spalding Paraquat 250 Herbicide	DGL Environmental Pty Ltd	67888/57030
Paraquat	Product	67977	Ezycrop Paraquat 250 SL Herbicide	Ezycrop Pty Ltd	67977/57214, 67977/59893
Paraquat	Product	68196	Novaguard Paraquat 250 SL Herbicide	Novaguard Pty Ltd	68196/57751, 68196/59890
Paraquat	Product	68477	Agmate Paraquat 250 SL Herbicide	Agcare Pty Ltd	68477/58426

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat	Product	68577	Gramoxone 360 Pro Herbicide	Syngenta Australia Pty Ltd	68577/58627, 68577/104881, 68577/127264, 68577/137924
Paraquat	Product	69274	Sabakem Paraquat 250SL Herbicide	Sabakem Pty Ltd	69274/60389
Paraquat	Product	69502	Cruze 300 Herbicide	DGL Environmental Pty Ltd	69502/60947
Paraquat	Product	69712	Paradox 250 Herbicide	Sinon Australia Pty Limited	69712/61482, 69712/105552
Paraquat	Product	70143	Farmalinx Powerquat 300 SL Herbicide	Farmalinx Pty Ltd	70143/62602
Paraquat	Product	81797	Relyon Paraquat 250 Herbicide	Nutrien Ag Solutions Limited	81797/104066, 81797/111913, 81797/124111, 81797/133503
Paraquat	Product	82754	Agritrading Paraquat 250 Herbicide	Agritrading Pty Limited	82754/106654
Paraquat	Product	83010	Paraquick Force 350 Herbicide	Nutrien Ag Solutions Limited	83010/107304, 83010/111905
Paraquat	Product	83115	Kelpie Par-Q 250 Herbicide	Sinochem International Australia Pty Ltd	83115/107560, 83115/125726
Paraquat	Product	83170	Barmac Paraquat 250 Herbicide	Amgrow Pty Ltd	83170/107674
Paraquat	Product	83185	Accensi Paraquat 300 Herbicide	Accensi Pty Ltd	83185/107696
Paraquat	Product	83835	Rainquat Full Herbicide	Shandong Rainbow International Co Ltd	83835/141205
Paraquat	Product	84794	Agmerch Paraquat 250 SL Herbicide	Agmerch Pty Ltd	84794/111440, 84794/132402
Paraquat	Product	85110	Kelpie P-Quat 300 SL Herbicide	Sinochem International Australia Pty Ltd	85110/112301
Paraquat	Product	85169	Conquest Explode 300 Plus Herbicide	Conquest Crop Protection Pty Ltd	85169/112553
Paraquat	Product	85420	Hemani Paraquat 250 SL Herbicide	Hemani Australia Pty Ltd	85420/113232, 85420/129768
Paraquat	Product	86364	Genfarm Paraquat 360 Herbicide	Nutrien Ag Solutions Limited	86364/115574
Paraquat	Product	86801	Ozcrop Paraquat 360 SL Herbicide	Oz Crop Pty Ltd	86801/116625, 86801/141135
Paraquat	Product	87191	4Farmers Paraquat 300 Herbicide	4 Farmers Australia Pty Ltd	87191/117737
Paraquat	Product	87228	Relyon Paraquat 360 Herbicide	Nutrien Ag Solutions Limited	87228/117799, 87228/119735, 87228/124013
Paraquat	Product	87259	Conquest Explode 360 Herbicide	Conquest Crop Protection Pty Ltd	87259/117967
Paraquat	Product	87271	ACP Paraquat 360 Herbicide	Australis Crop Protection Pty Ltd	87271/118004
Paraquat	Product	87370	Kelpie P-Quat 250 SL Herbicide	Sinochem International Australia Pty Ltd	87370/118207, 87370/136519
Paraquat	Product	87424	Titan Paraquat 360 Herbicide	Titan Ag Pty Ltd	87424/118325, 87424/139549

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat	Product	87665	Spraytop 330 Herbicide	ADAMA Australia Pty Limited	87665/118915
Paraquat	Product	88941	Genfarm Paraquat 250 SL Herbicide	Nutrien Ag Solutions Limited	88941/122985
Paraquat	Product	89076	F.S.A. Paraquat 250 Herbicide	Four Seasons Agribusiness Pty Ltd	89076/123547
Paraquat	Product	89808	Genfarm Para 250 SL Herbicide	Nutrien Ag Solutions Limited	89808/126163
Paraquat	Product	89981	Smart Paraquat 300 Herbicide	Crop Smart Pty Ltd	89981/126635
Paraquat	Product	90155	Cropsure Parashot 250 Herbicide	Cropsure Pty Ltd	90155/127785
Paraquat	Product	90742	Agro-Essence Paraquat 300 Herbicide	Agro-Alliance (Australia) Pty Ltd	90742/129923
Paraquat	Product	91098	Sanonda Paraquat 250 Herbicide	Sanonda (Australia) Pty Ltd	91098/130927
Paraquat	Product	91705	CropSure Parashot Plus 360 Herbicide	Cropsure Pty Ltd	91705/133194
Paraquat	Product	91833	JN PARAQUAT 250 HERBICIDE	JIANGSU NOON CROP SCIENCE CO., LTD	91833/133611
Paraquat	Product	91989	Red Dog Paraquat 250 Herbicide	OZ CROP PTY LTD	91989/134100
Paraquat	Product	92586	Weed Force Dagger 250 Knockdown Herbicide	WEED FORCE PTY LTD	92586/135970
Paraquat	Product	92841	Submarino Paraquat 250 SL Herbicide	SUBMARINO PTY LTD	92841/136885
Paraquat	Product	93182	Sabakem Paraquat 360SL Herbicide	SABAKEM PTY LTD	93182/138177
Paraquat	Product	93444	eChem Paraquat 360 Herbicide	ECHEM (AUST) PTY LIMITED	93444/139189
Paraquat	Product	93958	Swan Paraquat 250 Herbicide	SWAN CHEMICAL HOLDINGS PTY LTD	93958/141078
Paraquat	Product	94216	F.S.A. Paraquat 360 Herbicide	FOUR SEASONS AGRIBUSINESS PTY LTD	94216/141841
Paraquat, amitrole	Product	67344	Imtrade Para-Trooper Herbicide	Imtrade Australia Pty Ltd	67344/55849, 67344/101488, 67344/107531, 67344/115164
Paraquat, amitrole	Product	89484	Imtrade Guerrilla Herbicide	Imtrade Australia Pty Ltd	89484/125000, 89484/133061
Paraquat, Diquat	Product	46516	Spray.Seed 250 Herbicide	Syngenta Australia Pty Ltd	46516/03, 46516/04, 46516/05, 46516/0307, 46516/0405, 46516/0901, 46516/0903, 46516/1004, 46516/1197, 46516/56456, 46516/60621, 46516/137913
Paraquat, Diquat	Product	58336	Halley Premier 250 Herbicide	Halley International Enterprise (Australia) Pty Ltd	58336/0504, 58336/0805

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat, Diquat	Product	58412	Imtrade Spraykill 250 Herbicide	Imtrade Australia Pty Ltd	58412/104038
Paraquat, Diquat	Product	58470	Conquest Scorcher 250 Herbicide	Conquest Crop Protection Pty Ltd	58470/0208, 58470/0304, 58470/0904, 58470/54699
Paraquat, Diquat	Product	58733	4Farmers Brown Out 250 Herbicide	4 Farmers Australia Pty Ltd	58733/0204, 58733/111359
Paraquat, Diquat	Product	59098	Spray-Plant 250 Herbicide	Sipcam Pacific Australia Pty Ltd	59098/0305, 59098/1208
Paraquat, Diquat	Product	59333	Kenso Agcare Speedy 250 Herbicide	Kenso Corporation (M) Sdn. Bhd.	59333/0205, 59333/49612, 59333/53090, 59333/61930
Paraquat, Diquat	Product	59878	Genfarm Di-Par 250 Herbicide	Nutrien Ag Solutions Limited	59878/1209, 59878/60018, 59878/1005, 59878/107916
Paraquat, Diquat	Product	60287	Combik 250 Herbicide	Sinon Australia Pty Limited	60287/0906, 60287/59401, 60287/135167
Paraquat, Diquat	Product	61460	Alarm Herbicide	Sipcam Pacific Australia Pty Ltd	61460/1006
Paraquat, Diquat	Product	61860	Titan Eos Herbicide	Titan Ag Pty Ltd	61860/0607, 61860/0808
Paraquat, Diquat	Product	62495	Sanonda Paraquat/Diquat Herbicide	Sanonda (Australia) Pty Ltd	62495/0308
Paraquat, Diquat	Product	62631	Accensi Paraquat/Diquat 250 Herbicide	Accensi Pty Ltd	62631/0908, 62631/58694
Paraquat, Diquat	Product	63274	Uni-Spray 250 Herbicide	UPL Australia Pty Ltd	63274/0808
Paraquat, Diquat	Product	63565	Ozcrop Blowout Herbicide	Oz Crop Pty Ltd	63565/0209, 63565/101815
Paraquat, Diquat	Product	64325	Farmalinx Paradat Herbicide	Farmalinx Pty Ltd	64325/0809
Paraquat, Diquat	Product	64704	Fosterra Paraquat / Diquat Herbicide	Fosterra Pty Ltd	64704/49007
Paraquat, Diquat	Product	64802	Kwicknock 250 Herbicide	Grow Choice Pty Limited	64802/0310, 64802/60104
Paraquat, Diquat	Product	65295	Rainbow Diqu-Para 250 Herbicide	Shandong Rainbow International Co Ltd	65295/51629, 65295/61985
Paraquat, Diquat	Product	65708	Pacific Diquat/Paraquat 250 Herbicide	Pacific Agriscience Pty Ltd	65708/51671
Paraquat, Diquat	Product	66197	Unispray 250 Herbicide	UPL Australia Pty Ltd	66197/52973, 66197/104254
Paraquat, Diquat	Product	66327	AW Dismantle Herbicide	Agri West Pty Limited	66327/53393
Paraquat, Diquat	Product	66788	Agro-Essence Paraquat+Diquat 250 Herbicide	Agro-Alliance (Australia) Pty Ltd	66788/54406
Paraquat, Diquat	Product	67399	Easyfarm Paraquat-Diquat 250 Herbicide	Easyfarm Pty Ltd	67399/55961, 67399/59778
Paraquat, Diquat	Product	67627	Apparent Weedy Seedy 250 Herbicide	Titan Ag Pty Ltd	67627/56500, 67627/102353

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat, Diquat	Product	67707	Smart Combination 250 Herbicide	Crop Smart Pty Ltd	67707/56672, 67707/60106, 67707/118522
Paraquat, Diquat	Product	67891	Spalding Exocet 250 Herbicide	DGL Environmental Pty Ltd	67891/57038
Paraquat, Diquat	Product	68075	Ezycrop Paraquat-Diquat 250 Herbicide	Ezycrop Pty Ltd	68075/57436, 68075/59891
Paraquat, Diquat	Product	68202	Novaguard Paraquat-Diquat 250 Herbicide	Novaguard Pty Ltd	68202/57760
Paraquat, Diquat	Product	68280	Agro Burner 250 Herbicide	Agrogill Chemicals Pty Ltd	68280/57926
Paraquat, Diquat	Product	68479	Agmate Paraquat & Diquat 250 SL Herbicide	Agcare Pty Ltd	68479/58428
Paraquat, Diquat	Product	81790	Relyon Di-Par 250 SC Herbicide	Nutrien Ag Solutions Limited	81790/104058, 81790/111908, 81790/112881, 81790/126047
Paraquat, Diquat	Product	83169	Barmac Paraquat/Diquat 250 Herbicide	Amgrow Pty Ltd	83169/107673
Paraquat, Diquat	Product	83923	Accensi Paraquat / Diquat Prime 250 Herbicide	Accensi Pty Ltd	83923/109251
Paraquat, Diquat	Product	85112	Raystar Paraquat Diquat SL Herbicide	Raystar Cropprotection Pty Ltd	85112/112304
Paraquat, Diquat	Product	89832	Genfarm Di-Par 250 SC Herbicide	Nutrien Ag Solutions Limited	89832/126207
Paraquat, Diquat	Product	89918	Trio Paraquat Diquat 250 SL Herbicide	CTS Chemicals Pty Ltd	89918/126340, 89918/135188
Paraquat, Diquat	Product	90172	Cropsure Squadron 250 Herbicide	Cropsure Pty Ltd	90172/127840
Paraquat, Diquat	Product	91135	Agmerch Paraquat 135 & Diquat 115 Herbicide	Agmerch Pty Ltd	91135/131016

## Attachment B: Draft Statement of Reasons

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## Material findings of fact and reasons for the proposed decisions

- 1) I have reconsidered paraquat active constituent approvals, chemical product registrations containing paraquat and associated label approvals under Part 2, Division 4 of the Code scheduled to the *Agricultural and Veterinary Chemicals Code Act 1994* (Agvet Code) to determine whether:
  - a) the active constituents meet the safety criteria (section 5A of the Agvet Code),
  - b) the chemical products meet the safety criteria (section 5A of the Agvet Code), the trade criteria (section 5C of the Agvet Code), and the efficacy criteria (section 5B of the Agvet Code),
  - c) the labels meet the labelling criteria (section 5D of the Agvet Code), and
  - d) the active constituents, chemical products and labels comply with the requirements prescribed by the *Agricultural and Veterinary Chemicals Code Regulations 1995* (Agvet Regulations).

## Active constituents

- 2) Section 34(1) of the Agvet Code provides that I must affirm the approval of an active constituent if, and only if, I am satisfied that the constituent:
  - a) meets the safety criteria (section 5A), and
  - b) complies with any requirement prescribed by the *Agricultural and Veterinary Chemicals Code Regulations 1995* (Agvet Regulations).
- 3) Section 34(2) of the Agvet Code provides that subsection 34(1) applies only to the extent that the APVMA decides to reconsider matters covered by this subsection.
- 4) I have decided to reconsider all matters covered by subsection 34(1) in relation to the reconsideration of paraquat active constituent approvals.

## Consideration of whether active constituents meet the safety criteria

- 5) Section 5A(1) of the Agvet Code provides that an active constituent meets the safety criteria if use of the active constituent, in accordance with any instructions approved or to be approved by the APVMA for the constituent or contained in an established standard:
  - a) is not, or would not be, an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues (section 5A(1)(a)).
  - b) is not, or would not be, likely to have an effect that is harmful to human beings (section 5A(1)(b)).
  - c) is not, or would not be, likely to have an unintended effect that is harmful to animals, plants or things or to the environment (section 5A(1)(c)).
- 6) For the purposes of considering whether the active constituents meet the safety criteria as described in section 5A(1)(a) to (c) of the Agvet Code, I have had regard to the matters set out in section 5A(2)(a) of the Agvet Code.
  - a) Section 5A(2)(a)(i) of the Agvet Code – the toxicity of the constituent and its residues, including metabolites and degradation products, in relation to relevant organisms and ecosystems, including human beings.
    - I. I have considered assessment reports by the APVMA's relevant expert staff regarding the following information in respect of the toxicity of paraquat and its residues as summarised in the *Paraquat Review Technical Report*:

- studies examining the absorption, metabolism and excretion of paraquat in animal models and humans exposed through occupational, accidental or intentional exposure as described in the toxicology section of the *Paraquat Review Technical Report*
  - studies on the toxicological effects of paraquat, including the toxicological mode of action, acute and chronic toxicity, genotoxicity, reproductive and developmental toxicity in animal models and humans exposed through occupational, accidental or intentional exposure as described in the toxicology section of the *Paraquat Review Technical Report*
  - studies on the potential for paraquat to cause neurotoxicity as described in the toxicology section of the *Paraquat Review Technical Report*
  - studies on the metabolism and degradation of paraquat on treated crops and the residues and metabolites that are present in commodities following harvest as described in the residues and trade section of the *Paraquat Review Technical Report*
  - studies on the environmental fate and behaviour of paraquat in the environment including degradation and environmental toxicity studies as detailed in the environmental safety section of *Paraquat Review Technical Report*
  - the APVMA's records of approval of paraquat active constituents for use in agricultural chemical products.
- II. I am satisfied that the following health-based guidance values are applicable for paraquat as described in the toxicology section of the *Paraquat Review Technical Report*.
- The acceptable daily intake<sup>1</sup>(ADI) for paraquat should remain at 0.004 mg per kilogram body weight per day (mg/kg bw/day) based on a no observed adverse effect level (NOAEL) of 0.45 mg/kg bw/day in a one-year dog dietary study, which observed pulmonary lesions at the next higher dose. The ADI incorporates a 100-fold uncertainty factor to account for inter- and intra-species variation in sensitivity.
  - The acute reference dose<sup>2</sup> (ARfD) for paraquat should remain at 0.004 mg of paraquat per kg body weight based on a no observed adverse effect level of 0.45 mg per kilogram body weight in a dog dietary study, considering that pulmonary lesions would also occur after an acute exposure at the next higher dose. The ARfD incorporates a 100-fold uncertainty factor to account for inter- and intra-species variation in sensitivity.
- III. I am satisfied that an acceptable level of exposure to paraquat for workers which corresponds to a greater than 100-fold margin of exposure applied to a point of departure of 0.045 mg/kg bw/day, taking into consideration an oral NOAEL of 0.45 mg/kg bw/day and an oral availability of 10% as described in the worker health and safety section of the *Paraquat Review Technical Report*.
- IV. I am satisfied that, due to little metabolism or degradation in plants or animals, *paraquat cation* is the appropriate residue definition for both risk assessment and enforcement of compliance with Maximum Residue Limits (MRLs) in plant and animal commodities as described in the residues and trade section of the *Paraquat Review Technical Report*.
- V. I agree with the APVMA's assessment of the fate and behaviour of paraquat in the environment and the toxicity of paraquat and its metabolites and residues to non-target species, which has identified Regulatory Acceptable Levels (RALs) of exposure to paraquat as detailed in the environmental safety section of the *Paraquat Review Technical Report*.

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<sup>1</sup> ADI - Acceptable Daily Intake (for humans): a level of intake of a chemical (expressed mg/kg bw/day; milligrams per kilogram of body weight per day) that can be ingested daily over an entire lifetime without any appreciable risk to health

<sup>2</sup> ARfD - Acute Reference Dose (for humans): a level of intake of a chemical (expressed mg/kg bw; milligrams per kilogram of body weight) that can be ingested in 1 meal or in a 24 hour period without any appreciable risk to health



- VI. I am satisfied that exposure of non-target species to paraquat below the RALs listed in Table 2 below is not expected to have an unintended effect that is harmful to animals, plants, things or the environment.

**Table 2: Regulatory Acceptable Levels for exposure of non-target species to paraquat**

Group	Exposure type	RAL
Mammals	Acute	6.1 mg ac/kg bw
	Chronic	3.8 mg ac/kg bw/d
Birds	Acute	5.7 mg ac/kg bw
	Chronic	2.7 mg ac/kg bw/d
Aquatic species	Chronic	0.41 µg ac/L
Sediment dwellers	Acute	3.9 mg ac/kg ds
Adult bees	Acute contact	6.4 µg ac/bee
	Acute oral	5.2 µg ac/bee
Foliar arthropods	Contact	8.2 g ac/ha
Ground arthropods	Contact	600 g ac/ha
Soil macro-organisms	Acute	100 mg ac/kg ds
Terrestrial plants	Post-emergent	19 g ac/ha

- b) Section 5A(2)(a)(ii) of the Agvet Code – the method by which the constituent is, or is proposed to be, manufactured.
- I. The APVMA's chemistry assessment, as detailed in the *Paraquat Review Technical Report*, considered information submitted in the original applications for active constituent approval regarding the method of manufacture for each approved paraquat active constituent.
  - II. I am satisfied that the information submitted in the original applications for active constituent approval demonstrates that the method by which each of the paraquat active constituents with the approval numbers 44249, 55966, 69493, 87171, 89426 and 91420 is manufactured is expected to result in paraquat dichloride technical concentrate that complies with the Agricultural Active Constituents Standard 2022, as discussed in paragraph 6)c) below.
  - III. I am **not satisfied** that the information submitted in the original applications for active constituent approval sufficiently addresses the parameters specified for paraquat in the Agricultural Active Constituents Standard 2022 to allow the APVMA to conclude whether the method by which each of the paraquat active constituents with the approval numbers 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765 is manufactured, will result in paraquat active constituents that comply with the Agricultural Active Constituents Standard 2022 discussed in paragraph 6)c) below.
- c) Section 5A(2)(a)(iii) of the Agvet Code – the extent to which the constituent will contain impurities.
- I. The APVMA's chemistry assessment has considered the following information, as described in the chemistry section of the *Paraquat Review Technical Report*:
    - Information submitted in the original applications for active constituent approval regarding the purity and expected impurities for each approved paraquat active constituent.
    - The Agricultural Active Constituents Standard 2022, which are aligned with the FAO Specifications for paraquat and require that the minimum purity of paraquat dichloride technical concentrate, on a dry

weight basis, is 920 g/kg, with maximum levels for two toxicologically significant impurities; 0.001 g/kg (1.0 ppm) maximum total terpyridines at and 1.0 g/kg (1000 ppm) maximum 4,4'-bipyridyl.

- The Agricultural Active Constituent Standards 2022 specifications for paraquat requires the inclusion of an emetic, PP796, at not less than 0.8 g/L of technical concentrate.
- II. I agree with the APVMA's chemistry assessments, as described in the chemistry section of the *Paraquat Review Technical Report* concluded that:
- the formation of degradation products that are impurities of toxicological concern during storage of the manufacturing concentrate or in the formulated chemical product is not expected
  - the paraquat active constituents (manufacturing concentrates) with the approval numbers 44249, 55966, 69493, 87171, 89426 and 91420, comply with the Active Constituent Standards 2022 with respect to the minimum purity of the active constituent and presence of the emetic pp796, and maximum levels of impurities
  - the available information does not sufficiently address the parameters specified for paraquat in the Agricultural Active Constituents Standard 2022 to allow the APVMA to conclude that remaining paraquat active constituents with the approval numbers 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765 comply with the *Active Constituents Standards 2022*.
- III. I am **not satisfied** that the paraquat active constituents with the approval numbers 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765 comply with the *Active Constituents Standards 2022*.
- d) Section 5A(2)(a)(iv) of the Agvet Code – whether an analysis of the chemical composition of the constituent has been carried out and, if so, the results of the analysis.
- I. The APVMA's chemistry assessment, as detailed in the *Paraquat Review Technical Report*, has considered the batch analyses that were submitted and assessed by the APVMA as part of the original approval for each approved paraquat active constituent.
- II. I am satisfied that the APVMA's assessment of the batch analyses for active constituents 44249, 55966, 69493, 87171, 89426 and 91420 concluded that the chemical composition of those paraquat active constituents is compliant with the *Active Constituents Standards 2022*, as detailed in the *Paraquat Review Technical Report*.
- III. I am **not satisfied** that the paraquat active constituents with the approval numbers 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765 meet the safety criteria as the APVMA's chemistry assessment concluded that the available analyses of the chemical composition of the constituent was inadequate for the APVMA to determine whether the active constituent complies with the *Active Constituents Standards 2022*.
- e) Section 5A(2)(a)(v) of the Agvet Code – any conditions to which its approval is, or would be, subject.
- I. I have had regard to the conditions prescribed by the Agvet Regulations in accordance with section 23(1)(a) of the Agvet Code.
- Regulation 17C(1) of the Agvet Regulations prescribes conditions to which the approval of an active constituent for a proposed or existing chemical product is subject.
  - The *Agricultural and Veterinary Chemicals Code (Conditions of Approval or Registration) Order 2021* (Conditions of Approval or Registration Order) prescribes conditions which apply to the approval of an active constituent for a proposed or existing chemical product.

- II. I have also had regard to the conditions imposed on the approval of paraquat active constituents in accordance with section 23(1)(b) of the Agvet Code through the condition referred to as the *Agricultural Active Constituents Quality Assurance Requirements* which is reproduced below.
- “Agricultural Active Constituents must meet Quality Assurance Requirements
    - A person must not Supply the Active Constituent, or cause it to be supplied, unless the Active Constituent:
      - complies with the APVMA Standard for the Active Constituent; and
      - was manufactured at a site of manufacture listed in the Record of Approved Active Constituents.
    - A person must at the time of Supply of a Batch of the Active Constituent to another person also supply details of the Batch Number of the Active Constituent to the person to whom the active constituent was supplied.
    - For the purposes of these conditions a constituent complies with the APVMA Standard if the constituent, when measured using a validated analytical method:
      - does not contain less than the minimum purity and/or content of the constituent as set out in the APVMA Standard; and
      - does not contain more than the maximum level of any impurity as set out in the APVMA Standard
  - Definitions and Interpretation – in these conditions the following words have the following meanings:
    - ‘APVMA Standard’ means the standard determined by the APVMA to which a constituent must comply and which is published on the APVMA website;
    - ‘Batch’ means a defined quantity of material produced in a single series of operations;
    - ‘Batch Number’ means that a distinctive combination of numbers and/or letters that specifically identifies a Batch and from which the production history can be determined;
    - ‘Supply’ has the same meaning as given to it in Section 3 of the Agvet Codes and includes the doing of those things through, or pursuant to an arrangement with another person.”
- III. I am **not satisfied** that the current condition referred to as the ‘Agricultural Active Constituent Quality Assurance Requirements’ remains appropriate, noting that items 1 and 3 of the condition above are redundant with the *Agricultural and Veterinary Chemicals Code (Agricultural Active Constituents) Standards 2022* and Regulation 17C(1) of the Agvet Regulations.
- IV. I am satisfied that the conditions imposed by the Conditions of Approval or Registration Order in conjunction with the conditions prescribed by the Agvet Regulations, as referenced above, remain appropriate and are acceptable.
- f) Section 5A(2)(a)(vi) of the Agvet Code – any relevant particulars that are, or would be, entered in the Record for the constituent.
- I. The relevant particulars recorded for each approved paraquat active constituent have been reviewed. Sections 3 and 19(c) of the Agvet Code provide that the relevant particulars are the distinguishing number, any instructions for use and any other particulars prescribed by the regulations. Section 19(c) refers also to any other particulars prescribed by the regulations. Regulation 15(1) prescribes the following particulars for the purposes of section 19(c) of the Agvet Code:
- if a name is given to the active constituent by the International Union of Pure and Applied Chemistry—that name

- if no name is given to the active constituent by the International Union of Pure and Applied Chemistry—the name given to the active constituent in the standard prescribed in respect of the active constituent for the purposes of paragraph 87(1)(a) of the Code
  - the name of the active constituent
  - the composition and purity of the active constituent
  - the name of the manufacturer of the active constituent
  - the address of each site at which the active constituent is manufactured by the manufacturer
  - identifying information for the holder of the approval of the active constituent
  - the date of entry of these particulars in the Record of Approved Active Constituents
  - identifying information for any nominated agent for the approval.
- II. I have had regard to the APVMA staff's assessment of the information entered in the Record and other relevant particulars, and the information submitted in support of the original applications for diquat active constituent approval.
- III. I remain satisfied that the relevant particulars, including instructions for use, entered into the Record for paraquat active constituent with the approval numbers 69493, 87171, 89426 are correct.
- IV. I am **not satisfied** that the information entered in the Record related to the composition and purity of the paraquat active constituents with the approval numbers 44249, 55966 is acceptable as the Declarations of Composition that were provided with those applications do not list all relevant impurities of toxicological concern and additional components required by the Agricultural Active Constituent Standard 2022. However, I am satisfied that results of batch analyses provided with those applications demonstrates that the relevant impurities and other components comply with the Agricultural Active Constituents Standard 2022.
- V. I am **not satisfied** that the information entered in the Record related to the composition and purity of the paraquat active constituents with the approval numbers 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765 is consistent with the Agricultural Active Constituents Standard 2022 and am **not satisfied** that any other information demonstrates compliance of these active constituents with the Standard.
- g) Section 5A(2)(a)(via) of the Agvet Code – whether the constituent conforms, or would conform, to any standard made for the constituent under section 6E to the extent that the standard relates to matters covered by subsection 5A(1).
- I. The Agricultural Active Constituents Standards 2022 were made under section 6E(1) of the Agvet Code for active constituents used in agricultural chemical products, including paraquat.
- The Agricultural Active Constituents Standard 2022 require that the minimum purity of paraquat dichloride technical concentrate, on a dry weight basis, is 920 g/kg, with maximum levels for two toxicologically significant impurities; 0.001 g/kg (1.0 ppm) maximum total terpyridines at and 1.0 g/kg (1000 ppm) maximum 4,4'-bipyridyl.
  - The Agricultural Active Constituent Standards 2022 specifications for paraquat requires the inclusion of an emetic, PP796, at not less than 0.8 g/L of technical concentrate.
- II. The APVMA's chemistry assessment, as detailed in the *Paraquat Review Technical Report*, has had regard to the Agricultural Active Constituent Standards 2022 and the information regarding the purity and composition of the active constituent submitted in support of the applications for approval of paraquat active constituents.

III. I accept the conclusions of the APVMA's chemistry assessments, as described in the chemistry section of the *Paraquat Review Technical Report* concluded that:

- the information considered in relation to the paraquat active constituents with the approval numbers 44249, 55966, 69493, 87171, 89426 and 91420 demonstrates that they comply with the Active Constituent Standards 2022 with respect to the minimum purity of the active constituent and presence of the emetic pp796, and maximum levels of impurities
- the declarations of composition provided in relation to the active constituent approvals 44249, 55966 do not list all required impurities and components for paraquat dichloride technical concentrates listed in the Agricultural Active Constituent Standards 2022
- the available information does not sufficiently addresses the parameters specified for paraquat in the Agricultural Active Constituents Standard 2022 to allow the APVMA to conclude that remaining paraquat active constituents with the approval numbers 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765 comply with the Agricultural Active Constituents Standards 2022.

IV. I am satisfied that paraquat active constituents with the approval numbers 44249, 55966, 69493, 87171, 89426 and 91420 conform to the Agricultural Active Constituents Standards 2022, made under section 6E(1) of the Agvet Code

V. I am **not satisfied** that the paraquat active constituents with the approval numbers 44249, 55966, or 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765 comply with the Agricultural Active Constituents Standards 2022.

h) Section 5A(2)(a)(vii) of the Agvet Code - any matters prescribed by the regulations.

I. Regulation 8AA of the Agvet Code Regulations prescribes the method of analysis (if any) of the chemical composition of the active constituent concerned.

II. I have had regard to the APVMA's assessment of the information about the method of analysis of the chemical composition of the active constituent submitted as part of the original applications for approval and found to be acceptable by the APVMA at that time, as described in the chemistry section of the *Paraquat Review Technical Report*.

- I accept the APVMA's previous findings regarding the method of analysis and note that there has not been any new information provided that would alter my satisfaction regarding the method of analysis of the chemical composition of the active constituents.
- I am satisfied of the method of analysis of the chemical composition of each approved paraquat active constituent listed in Attachment A.

i) Section 5A(2)(b) of the Agvet Code – such other matters as the APVMA thinks relevant.

I. There are no other matters that I think relevant regarding whether paraquat active constituents meet the safety criteria.

7) Having had regard to the matters described above, I am **not satisfied** that the paraquat active constituent approvals listed in Attachment A meet the safety criteria for the following reasons:

a) for the following active constituent approvals 44249, 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 55966, 56809, 58230, 59171, 64565 and 64765, I am **not satisfied** that the information considered with respect to the method by which the constituent is, or is proposed to be, manufactured (section 5A(2)(a)(ii)), see paragraph 6)b) above, the extent to which the constituent will contain impurities (section 5A(2)(a)(iii)), see paragraph 6)c) above or the analyses conducted on the chemical composition of the active constituent (section 5A(2)(a)(iv), see paragraph 6)d) above, demonstrates the active constituents meet the

Active Constituents Standards 2022 for the purpose of section 5A(2)(a)(via) of the Agvet Code, see paragraph 6)g)

- b) I am **not satisfied** that the information entered in the record in relation to the composition and purity of the active constituents listed in paragraph 6)f)IV (44249, 55966) and 6)f)V (44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 56809, 58230, 59171, 64565 and 64765) is compliant with the Agricultural Active Constituent Standard 2022
- c) for all paraquat dichloride active constituent approvals, I am **not satisfied** that the condition of approval referred to as the '*Agricultural Active Constituent Quality Assurance Requirements*' remains appropriate as it substantially duplicates conditions imposed by the Agvet Regulations and the requirements of the Agricultural Active Constituent Standard 2022.

### Consideration of whether active constituent approvals can be varied to meet the safety criteria

- 8) I have considered whether active constituent approvals can be varied in such a way as to meet the safety criteria set out in Section 5A(1) for the purposes of section 34A(1) of the Agvet Code.
  - a) I am satisfied that the conditions imposed by the APVMA on the following active constituent approvals; 44249, 44387, 47747, 48272, 51041, 51678, 54043, 54131, 55327, 55682, 55966, 56809, 58230, 59171, 64565 and 64765 can be varied to address the concerns identified in paragraphs 6)b), 6)c), 6)d) and 6)f) above regarding the method by which the constituent is manufactured, the extent to which the constituent contains impurities, analysis of the constituent and relevant particulars that are entered in the Record. I propose to impose the following condition of approval under section 34A(1) of the Agvet Code:

#### *Condition of approval*

*On or before the date 1 year after the publication of the section 34AC notice of the paraquat final regulatory decision, as the holder, you are required to provide to the APVMA with the results of 5 batch analyses and an amended Declaration of Composition demonstrating compliance of the active constituent [insert approval number] with the Agricultural Active Constituents Standard 2022.*

- b) To address concerns identified in paragraph 6)e)III which relate to my consideration of the conditions of approval of all paraquat active constituents, as required in section 5A(2)(a)(v) of the Agvet Code, I propose to vary the condition referred to as the '*Agricultural Active Constituent Quality Assurance Requirements*' to remove items that are redundant with requirements set out in legislation to read as follows.

#### *Condition of approval: Agricultural Active Constituent Quality Assurance Requirements*

*Upon supply of any quantity of active constituent a Batch Number must also be provided to the recipient.*

#### Definitions and Interpretation

*'Batch' means a defined quantity of active constituent or chemical product (as the case may be) produced in a single series of operations;*

*'Batch Number' means a distinctive combination of numbers and/or letters that specifically identifies a Batch and from which the production history can be determined.*

- 9) For the purposes of section 34A(1)(b), I am satisfied that the relevant particulars or conditions of the paraquat active constituent approvals listed in Table 1 in Attachment A of this notice can be varied in the ways set out in paragraph 8) above, to allow the approval of those active constituents to be affirmed.

### Consideration of whether active constituents comply with any requirement prescribed by the regulations

- 10) Section 34(1)(d) of the Agvet Code provides that I must affirm an active constituent approval only if I am satisfied that the constituent complies with any requirements prescribed by the regulations.

- a) There are no other requirements prescribed by the regulations for paraquat active constituents that have not already been considered above.

## Chemical Products

- 11) Sections 34(1)(b) and (d) of the Agvet Code provide that the APVMA must affirm the registration for a chemical product if, and only if, it is satisfied that the product:
  - a) meets the safety criteria (section 5A)
  - b) meets the efficacy criteria (section 5B)
  - c) meets the trade criteria (section 5C) and
  - d) complies with any requirement prescribed by the regulations.
- 12) Section 34(2) of the Agvet Code provides that subsection 34(1) applies only to the extent that the APVMA decides to reconsider matters covered by the subsection.
- 13) I have decided to reconsider all matters covered by subsection 34(1)(b) in relation to the reconsideration of paraquat chemical product registrations except where those matters relate to the active constituent amitrole, co-formulated in some chemical products containing paraquat, or to other excipients.

## Consideration of whether registered chemical products meet the safety criteria

- 14) Section 5A(1) of the Agvet Code provides that a chemical product meets the safety criteria if use of the product, in accordance with any instructions approved, or to be approved, by the APVMA for the product or contained in an established standard:
  - a) is not, or would not be, an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues (section 5A(1)(a))
  - b) is not, or would not be, likely to have an effect that is harmful to human beings (section 5A(1)(b))
  - c) is not, or would not be, likely to have an unintended effect that is harmful to animals, plants or things or to the environment (section 5A(1)(l)).
- 15) For the purposes of being satisfied that paraquat chemical products meet the safety criteria, I have had regard to the criteria set out in section 5A(3)(a) of the Agvet Code.
  - a) Section 5A(3)(a)(i) – the toxicity of the product and its residues, including metabolites and degradation products, in relation to relevant organisms and ecosystems, including human beings.
    - I. I have considered assessment reports by the APVMA's relevant expert staff regarding the following information in relation to the toxicity of paraquat chemical products and their residues as summarised in the *Paraquat Review Technical Report*.
      - information about the toxicity of paraquat and its residues, as set out in paragraph 6)a) above, and the *Paraquat Review Technical Report* and the references therein, including the paraquat health based guidance values and regulatory acceptable levels for exposure of non-target species
      - information about the presence and formation of impurities of toxicological concern during manufacture and storage of paraquat chemical products as described in the *Paraquat Review Technical Report*.

- the APVMA's records of registration of paraquat agricultural chemical products
  - the impact of any excipients in the chemical products on the toxicity of the paraquat chemical products to relevant organisms and ecosystems, including human beings as detailed in the *Paraquat Review Technical Report*
  - environmental toxicity studies on the effects of formulated paraquat products on non-target species, as detailed in the *Paraquat Review Technical Report*
  - information about the combined toxicity of paraquat and diquat in relation to regulatory acceptable levels for exposure of non-target species and environmental effects of products that contain both active constituents as detailed in the *Paraquat Review Technical Report*.
- II. The APVMA's chemistry assessment concluded that there is sufficient information on the toxicity of the impurities of toxicological concern 4,4'bipyridyl and total terpyridines, and the potential sources of these impurities in both paraquat manufacturing concentrate and formulated products to determine that formulated paraquat chemical products are not expected to contain unacceptable levels of impurities of toxicological concern.
- III. The APVMA toxicology assessment has determined that an ADI of 0.004 mg/kg bw/day and ARfD of 0.004 mg/kg bw/day as listed in paragraph 6)a)II of this statement of reasons and defined in the *Paraquat Review Technical Report* are applicable in assessing the risk to human health from use of paraquat chemical products.
- IV. The APVMA's worker exposure assessment described in the *Paraquat Review Technical Report* has determined that acceptable levels of occupational exposure to paraquat can be defined by applying a greater than 100-fold margin of exposure to a point of departure of 0.045 mg/kg bw/day.
- V. I am satisfied that exposure of non-target organisms to paraquat below the regulatory acceptable levels set out in the *Paraquat Review Technical Report* is not likely to have an unintended effect that is harmful to animals, plants or things or to the environment.
- VI. I am satisfied that there is sufficient information to assess the impact of formulation excipients and, where relevant, the co-formulated active constituent diquat, on the toxicity of paraquat chemical products and their residues in relation to relevant organisms and ecosystems, including human beings.
- VII. I am therefore satisfied that the toxicity of paraquat chemical products and their residues, including metabolites and degradation products, are sufficiently defined to allow assessment as to whether paraquat chemical products meet the safety criteria.
- b) Section 5A(3)(a)(ii) of the Agvet Code - the relevant poison classification of the product under the law in force in this jurisdiction.
- I. Paraquat is listed in Schedule 7 of the *Therapeutic Goods (Poisons Standard—February 2024) Instrument 2024*. This instrument is also commonly referred to as the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
- The SUSMP imposes additional requirements in recognition of the significant toxicity of paraquat, so that in addition to the signal heading "DANGEROUS POISON", aqueous solutions of paraquat must also bear the cautionary statements:

CAN KILL IF SWALLOWED  
DO NOT PUT IN DRINK BOTTLES  
KEEP LOCKED UP



- These statements must be printed on separate lines immediately below the cautionary statement “KEEP OUT OF REACH OF CHILDREN”. The SUSMP also requires that liquid preparations of paraquat must be coloured blue or green and must contain sufficient stenching agent to produce an offensive smell.
- II. No change to the current poisons scheduling for paraquat is required.
- III. I have had regard to the information recorded in the Register for each paraquat chemical product and to information submitted in support of the original applications for registration, including the product formulation information as described in the *Paraquat Review Technical Report*. I am satisfied that agricultural chemical products containing paraquat meet the requirements prescribed by the SUSMP.
- c) Section 5A(3)(a)(iii) of the Agvet Code – how the product is formulated.
- I. I accept the APVMA’s chemistry assessment of the registration records for paraquat chemical products in having regard to how registered chemical products containing paraquat are formulated as described in the *Paraquat Review Technical Report*.
- Registered chemical products containing paraquat are formulated as:
    - soluble concentrates (SL) containing between 250 and 360 g/L of paraquat
    - soluble concentrates (SL) containing 135 g/L of paraquat co-formulated with 115 g/L of diquat as an additional active constituent
    - soluble concentrates (SL) containing between 250 and 300 g/L of paraquat with between 10 and 12 g/L of amitrole as an additional active constituent.
  - I am satisfied that all products containing paraquat also contain sufficient blue or green dye and stenching agent to comply with the requirements of the SUSMP described in paragraph 15)b)I above.
- II. I am satisfied that the formulation of chemical products containing paraquat remains acceptable with respect to the safety criteria.
- d) Section 5A(3)(a)(iv) of the Agvet Code - the composition and form of the constituents of the product.
- I. I accept the APVMA’s chemistry assessment of registration records for paraquat chemical products in respect of the composition and form of the constituents of the chemical products containing paraquat, including the Declaration of Composition for the active constituent, certificates of analysis for the formulated products and the manufacturer’s specification of other constituents, as described in the *Paraquat Review Technical Report*.
- II. I am satisfied that the composition and form of the constituents of the paraquat products remain acceptable with respect to the safety criteria for chemical products.
- e) Section 5A(3)(a)(v) of the Agvet Code - any conditions to which a product’s registration is, or would be, subject.
- I. I have considered registration records for paraquat chemical products and the relevant provisions in the Agvet Code and Agvet Regulations in considering the conditions to which paraquat chemical products are or would be subject.
- Chemical product registrations are currently subject to the conditions prescribed by items 1, 2, 3, 4, 5, 6, and 7 of the table in regulation 17C(2) of the Agvet Regulations.

- Note: Regulation 17C(3) specifies that Items 3 and 4 of regulation 17C(2) do not apply to any agricultural chemical product as these are prescribed under regulation 59(1)(a) for the purposes of section 120A of the Agvet Code.
- II. Section 23(1)(a) of the Agvet Code, in conjunction with Regulation 18 of the Agvet Regulations also prescribes conditions for registration of chemical products relating to containers for chemical products.
- III. Registered chemical products are also subject to the conditions of registration imposed by the APVMA in the *Agricultural and Veterinary Chemicals Code (Conditions of Approval or Registration) Order 2021*, in accordance with section 23(1)(a) of the Agvet Code.
- IV. I am satisfied that the conditions detailed above are appropriate for the registered chemical products containing paraquat.
- V. Agricultural chemical product registrations are also subject to the additional condition imposed by the APVMA under section 23(1)(b) of the Agvet Code referred to as the 'Agricultural Products Active Constituent Quality Assurance Requirements' which is reproduced below.
- "Agricultural Products must meet the Agricultural Products Active Constituent Quality Assurance Requirements
    - Manufacture of active constituent - the registrant must not supply the chemical product, or cause it to be supplied, unless the active constituent contained in the chemical product:
      - complies with the APVMA Standard for that active constituent; and
      - was manufactured at a site of manufacture listed in the Record of approved active constituents.
    - Analysis results - the registrant must not supply the chemical product or cause it to be supplied unless the registrant has in its possession prior to the supply of each batch of the chemical product, batch analysis results that show:
      - the active constituent contained in the chemical product complied with the APVMA Standard for that active constituent;
      - if there is an APVMA Standard for a constituent in the chemical product that is not an active constituent, the constituent complied with the APVMA Standard for that constituent; and
      - the batch number of the active constituent contained in the chemical product.
    - Records - the registrant must, at or prior to the supply of a batch of the chemical product by the registrant or by another person on behalf of the registrant, make or have in its possession, a record that contains the following information:
      - The name of the chemical product.
      - The APVMA product number of the chemical product.
      - If the chemical product was imported into Australia by another person on behalf of, or pursuant to an arrangement with the registrant, the name and address of that person.
      - If the chemical product was manufactured in Australia by another person on behalf of, or pursuant to an arrangement with the registrant, the name and address of that person.
      - The date of importation into, or manufacture in, Australia as the case may be.
      - The batch number of the chemical product from which the supply was made.
      - The quantity of the chemical product that constitutes the batch.

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- The batch number, and name and address of the manufacturer of the active constituent contained in the chemical product.
  - The registrant must produce, or cause to be produced, to the APVMA any batch analysis results or record within 10 working days of the request having been made by the APVMA, or other such period as determined by the APVMA.
  - The registrant must keep, or cause to be kept, any batch analysis results or record for 2 years after any batch analysis results or record is made.
  - Possession of batch analysis results and records - for the purposes of these conditions, batch analysis results or records are in the possession of the registrant if batch analysis results or records are:
    - in the possession of the registrant; or
    - in the possession of another person pursuant to an arrangement with the registrant.
  - Compliance with the Standard - for the purposes of these conditions, a constituent complies with the APVMA Standard if the constituent, when measured using a validated analytical method does not contain:
    - less than the minimum purity and/or content of the constituent as set out in the APVMA Standard for the Constituent
    - more than the maximum level of any impurity as set out in the APVMA Standard.
  - Definitions and Interpretation - in these conditions the following words have the following meanings:
    - 'APVMA Standard' means the standard determined by the APVMA to which a constituent contained in chemical products must comply and which is published on the APVMA website.
    - 'Batch' means a defined quantity of material produced in a single series of operations.
    - 'Batch number' means that a distinctive combination of numbers and/or letters that specifically identifies a batch and from which the production history can be determined.
    - 'Batch analysis results' means the results of analysis from each batch of the constituent that include:
      1. the name of the manufacturer and the manufacturing site address
      2. the date of the analysis
      3. the batch number and date of manufacture of the batch
      4. the analysis result(s) for the constituent purity and/or content and/or isomer ratio and/or the specified impurities as per the APVMA Standard for the constituent
      5. full details and validation data for the analytical method(s) used for the determination of the constituent purity (linearity and precision) and/or the content and/or the isomer ratio and/or the specified impurities (linearity, precision, accuracy and limit of quantitation if relevant).
    - If analytical methods and validation data have been previously provided to the APVMA, a reference to that submission will suffice.

- 'Record' means a document in written or electronic form that contains the particulars set out in paragraph (3) and which is readily accessible for the purposes of Part 9 of the Agvet Code (Enforcement).
  - 'Supply' has the same meaning as given to it in section 3 of the Agvet Code and includes the doing of those things through, or pursuant to an arrangement with, another person."
- VI. I am **not satisfied** that the current condition referred to as 'Agricultural Products Quality Assurance Requirements', remains appropriate, as the condition is substantially redundant with requirements imposed by the Agvet Code or the Agvet Regulations.
- f) Section 5A(3)(a)(vi) of the Agvet Code – any relevant particulars that are, or would be, entered in the Register for the product:
- I. The relevant particulars required to be entered in the Register for a chemical product are set out by section 20(1)(c) of the Agvet Code and prescribed by Regulation 16 of the Agvet Regulations as:
    - the distinguishing number;
    - any instructions for the use of the product
    - the distinguishing name of the chemical product
    - the constituents of the chemical product
    - the concentration of each constituent of the chemical product
    - if possible, the composition and purity of each active constituent of the chemical product
    - the formulation type for the chemical product; the net contents of the chemical product
    - identifying information for the holder of the registration for the chemical product
    - the name of each manufacturer of the chemical product
    - the address of each site at which the chemical product is manufactured by the manufacturer
    - the date of entry of these particulars in the Register of Chemical Products
    - identifying information for any nominated agent for the registration.
  - II. I have had regard to the APVMA's assessments of the relevant particulars entered in the Register for each of the products listed in Tables 1 of Attachment A and have also considered the conclusions of the chemistry, environment, human health, and residues and trade risk assessments described in the *Paraquat Review Technical Report*.
  - III. I am satisfied that all relevant particulars that are entered in the Register for paraquat chemical products, except for the instructions for use of the product mentioned in paragraph 15)f)IV below, remain acceptable.
  - IV. I am **not satisfied** that the use of paraquat chemical products according to the instructions for use entered in the register meets the safety criteria in the following situations for the reasons indicated and discussed in the *Paraquat Review Technical Report*.
    - Instructions for use of paraquat applied by ground boom in small scale agriculture, i.e. row crops, vegetables and market gardens, are acceptable up to a maximum application of 6 ha/day at the maximum relevant label rate of 810 g ac/ha (4.86 kg of paraquat per operator per day) when the operator uses the following personal protective equipment: open cab, single layer of clothing, gloves, PF10 respirator, and face shield or goggles when mixing or loading.
    - Instructions for use of paraquat applied by ground boom in broad scale agriculture at rates exceeding 337 kg of paraquat per operator per day exceeds acceptable occupational exposure levels, when the

operator uses the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system).

- Instructions for use of paraquat applied by manually pressurised hand wand at rates exceeding 4.5 kg of paraquat per operator per day, or by mechanically pressurised hand wand at rates exceeding 2.3 kg of paraquat per operator per day, exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading.
- Instructions for use of chemical products containing both diquat and paraquat applied by ground boom in broad scale agriculture at rates that exceed 337 kg of paraquat per operator per day exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)
- Instructions for use of chemical products containing both diquat and paraquat applied by manually pressurised hand wand to remove rates that exceed 4.5 kg of combined active constituent per operator per day, or 2.3 kg of combined active constituent per operator per day by mechanically pressurised hand wand exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading
- instructions for use of paraquat in the following situations at rates greater than 45 g paraquat/ha exceeds the regulatory acceptable exposure levels for wild birds and wild mammals as described in the *Paraquat Review Technical Report*:
  - non-agricultural situations, including around sheds, roadways, paths and firebreaks
  - orchards, vineyards
  - pasture, including spray topping for prevention of annual ryegrass toxicity.
- Instructions for use of paraquat in the following situations at rates greater than 231 g paraquat/ha exceeds the regulatory acceptable levels for wild mammals and/or wild birds as described in the *Paraquat Review Technical Report*:
  - Potatoes (early emergence and pre-harvest weed control)
  - Fallows, lucerne, market gardens, row crops, vegetables
  - Bananas
  - Hops, sugarcane
  - Rice, pre or post-sowing and pre-emergence
  - Peanuts.
- Instructions for use of paraquat for spray topping to prevent grass seed set in pulses at rates greater than 149 g paraquat/ha exceeds the regulatory acceptable levels for wild mammals as described in the *Paraquat Review Technical Report*.
- Instructions for use of products containing co-formulated paraquat and diquat active constituents in any situation, except as an aid to cultivation in fallow (full disturbance) at rates up to 175 g combined active/ha, will exceed the regulatory acceptable levels for wild mammals and/or wild birds as described in the paraquat and diquat *Review Technical Reports*.

- Instructions for use of products containing co-formulated paraquat and amitrole active constituents in any situation, except as an aid to cultivation prior to crop establishment for winter crops at rates up to 231 g paraquat/ha exceeds the regulatory acceptable levels for exposure to paraquat for wild mammals and/or wild birds as described in the *Paraquat Review Technical Report*. Noting that this finding has not considered the toxicity of amitrole, which is not subject to this reconsideration.
  - Instructions for use of paraquat on “row crops, vegetables, market gardens, nurseries” and “orchards (including bananas) and vineyards” are not consistent with APVMA crop group guidelines<sup>3</sup>, which require assessment of residues on specific crops, or current methods for assessing human dietary exposure to residues of paraquat following its use in those situations. as described in the residues and trade assessment in the *Paraquat Review Technical Report*. Therefore, I am not able to be satisfied that these uses will not result in human dietary exposure exceeding the ADI or ARfD.
- g) Section 5A(3)(a)(via) of the Agvet Code – whether the product conforms, or would conform, to any standard made for the product under section 6E to the extent that the standard relates to matters covered by subsection (1).
- I. The *Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022* is the only standard made under section 6E that relates to matters covered by section 5A(1) of the Agvet Code and prescribes the maximum allowable variation of the concentration of constituents in registered chemical products from the nominal quantities recorded in the Register for active constituents and non-active constituents.
  - II. I accept the APVMA’s chemistry assessment, as detailed in the *Paraquat Review Technical Report*, in regard to Declarations of Composition and Certificates of Analysis for paraquat chemical products supplied as part of the original registration applications. I am satisfied that all registered paraquat chemical products comply with the *Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022*.
- h) Section 5A(3)(a)(vii) of the Agvet Code – any matters prescribed by the regulations.
- I. Regulation 8AB prescribes matters the APVMA must have regard to for the purposes of being satisfied as to whether a chemical product meets the safety criteria.
  - II. Regulation 8AB(1)(a) of the Agvet Regulations prescribes the method of analysis (if any) of the chemical composition and form of the constituents of the chemical product.
    - I accept the APVMA’s chemistry assessment, as detailed in the *Paraquat Review Technical Report*, regarding the information about the method of analysis of the chemical composition and form of the constituents of paraquat chemical products submitted as part of the original applications for product registration.
    - There has not been any new information provided that would alter my satisfaction regarding the method of analysis of the chemical composition and form of the active constituents.
    - I remain satisfied of the method of analysis of the chemical composition and form of the constituents of each registered paraquat chemical product listed in Attachment A.
  - III. Regulation 8AB(2) provides that regulations 8AB(1)(b) and (c) do not apply if the product is prescribed under subregulation 59(1) of the Agvet Regulations for the purposes of section 120A of the Agvet Code.
    - All agricultural chemical products are prescribed under regulation 59(1)(a) of the Agvet Regulations for the purposes of section 120A of the Agvet Code, therefore regulations 8AB(1)(b) and (c) are not relevant to paraquat chemical products.

<sup>3</sup> <https://www.apvma.gov.au/crop-groups>

- IV. Regulations 8AB(1)(d), (e) and (f) of the Agvet Regulations do not apply to paraquat chemical products based on the formulation, chemical composition and the use patterns of paraquat products.

16) Under section 5A(3)(b) of the Agvet Code, the APVMA may have regard to one or more of the following matters in determining whether a chemical product meets the safety criteria:

- a) Section 5A(3)(b)(i) of the Agvet Code – the acceptable daily intake of each constituent contained in the product.
- I. I accept the recommendation of the APVMA's human health risk assessment, which has determined that the acceptable daily intake for paraquat is 0.004 mg/kg bw/day as discussed in paragraph 6)a) above and the *Paraquat Review Technical Report*.
- b) Section 5A(3)(b)(ii) of the Agvet Code – any dietary exposure assessment prepared under subsection 82(4) of the *Food Standards Australia New Zealand Act 1991* as a result of any proposed variation notified under section 82(3) of that Act in relation to the product, and any comments on the assessment given to the APVMA under section 82(4) of that Act.
- I. There has not been a dietary exposure assessment prepared under subsection 82(4) of the *Food Standards Australia New Zealand Act 1991*.
- c) Section 5A(3)(b)(iii) of the Agvet Code – whether any trials or laboratory experiments have been carried out to determine the residues of the product and, if so, the results of those trials or experiments and whether those results show that the residues of the product will not be greater than limits that the APVMA has approved or approves.
- I. I accept the conclusions of the APVMA's Residues and Trade risk assessment, as described in the *Paraquat Review Technical Report*, which assessed the results of trials or experiments that have been conducted to determine the residue of paraquat products that will remain in all situations where those products are used, to determine whether the residues of the product will not be greater than limits that the APVMA has approved or approves (Maximum Residue Levels; MRLs).
- II. Trials or experiments have been conducted to determine the residue of paraquat products, including combined paraquat and diquat products, that will remain in all situations except for:
- Pre-harvest weed control for potatoes
  - Post-emergent weed control over the top of sugarcane
  - Residues remaining on cotton trash or fodder following pre-harvest desiccation of cotton
  - I am **not satisfied** that use of paraquat in the crops listed above will not result in residues of paraquat that will not be greater than the limits that the APVMA has approved or approves.
- III. I accept the conclusions of the APVMA's Residues and Trade risk assessment, as detailed in the *Paraquat Review Technical Report*, that:
- Residues following spray topping use on chickpeas, faba beans, field peas, lentils and lupins will exceed MRLs the APVMA approves until 14 days after the last application
  - Residues in all other situations will not exceed current MRLs approved by the APVMA.
- d) Section 5A(3)(b)(iv) of the Agvet Code – the stability of the product.
- I. I accept the recommendation of the APVMA's chemistry assessment as described in the *Paraquat Review Technical Report*, which has considered information provided in the applications for registration of paraquat chemical products. I am satisfied that those products are expected to be adequately stable provided they are stored in accordance with the instructions on the approved labels.
- e) Section 5A(3)(b)(v) of the Agvet Code – the specifications for containers for the product.

- I. I accept the recommendation of the APVMA's chemistry assessment as described in the *Paraquat Review Technical Report*, which has considered information provided in the applications for registration of paraquat chemical products regarding the containers for paraquat products. I am satisfied that the containers for paraquat products are acceptable with respect to the conditions for containers for chemical products set out in Regulation 18 of the Agvet Regulations, except for regulation 18(e), which requires that the container must enable all or any part of its contents to be removed or discharged in such a way that, with the exercise of no more than reasonable care, the contents cannot harm a person or have an unintended effect that is harmful to the environment.
- II. I am **not satisfied** that the containers for diquat chemical products enable all or any part of the container's contents to be removed or discharged in such a way that, with the exercise of no more than reasonable care, the contents cannot harm a person or have an unintended effect that is harmful to the environment, as required by regulation 18(e), as no relevant information has been provided to the APVMA, as described in the *Paraquat Review Technical Report*.

### Consideration of whether registered chemical products can be varied to meet the safety criteria

- 17) I have considered whether registered paraquat chemical products can be varied in such a way as to meet the safety criteria set out in Section 5A(1) of the Agvet Code for the purposes of section 34A(1).
- a) To address concerns identified in paragraph 15)e) when considering the conditions to which the registrations of chemical products containing paraquat are subject, in accordance with section 5A(3)(a)(v), I propose to vary the conditions referred to as the 'Agricultural Products Active Constituent Quality Assurance Requirements' to remove elements that are set out in the Agvet Code and the Agvet Regulations to read as follows:

Condition of registration: '*Agricultural Chemical Products Active Constituent Quality Assurance Requirements*'

- A chemical product must not be supplied unless the holder of the registration possesses batch analysis results that demonstrate:
  - the active constituent(s) in the chemical product comply with Agricultural and Veterinary Chemicals Code (Agricultural Active Constituents) Standards 2022; and
  - If there is an APVMA standard made under section 6E of the Agvet Code for any constituent that is not an active constituent in the chemical product, that the constituent complied with the APVMA Standard for that constituent; and
  - the active constituent(s) and any excipients in the chemical product comply with the Agricultural and Veterinary Chemicals Code (Allowable Variations in Concentrations of Constituents in Agricultural Chemical Products) Standards 2022 (if applicable).
- A chemical product must not be supplied unless the holder of the registration possesses a record that contains the following information for the batch of chemical product:
  - the name of the chemical product
  - the APVMA product number of the chemical product
  - if the chemical product was imported into Australia by another person on behalf of, or pursuant to an arrangement with the holder, the name and address of that person, and the date of importation
  - if the chemical product was manufactured in Australia by another person on behalf of, or pursuant to an arrangement with the holder, the name and address of that person, and the date of manufacture



- the batch number of the chemical product from which the supply was made and the quantity of the chemical product in that batch
  - the batch number of the active constituent contained in the chemical product, and name and address of the manufacturer of the active constituent
  - the date of the batch analysis;
  - full details and validation data for the analytical methods used; including linearity, precision, accuracy and limit of quantitation if relevant.
  - The holder must keep, or cause to be kept, any batch analysis results or record for 2 years after any batch analysis results or record is made.
  - For the purposes of this condition:
    - *Batch* means a defined quantity of chemical product or active constituent (as the case may be) produced in a single series of operations.
    - *Batch Number* means a distinctive combination of numbers and/or letters that specifically identifies a batch from which the production history can be determined.
    - *Possess* means in the possession of the holder or in the possession of another person pursuant to an arrangement with the holder.
    - *Record* includes information stored or recorded by means of a computer.
- b) To address concerns identified in paragraph 15)f)III and 15)f)IV in relation to the relevant particulars that are or would be entered into the Register for paraquat chemical products as required by section 5A(3)(a)(vi) of the Agvet Code, I propose to vary the instructions for use as indicated below:
- I. vary the instructions for use of diquat applied by ground boom in small scale agriculture, i.e. row crops, vegetables and market gardens, to remove rates that exceed 4.86 kg of paraquat per operator per day and require the operator to use the following minimum personal protective equipment: open cab, single layer of clothing, gloves, PF10 respirator, and face shield or goggles when mixing or loading
  - II. vary the instructions for use of paraquat applied by ground boom in broad scale agriculture to remove rates that exceed 337 kg of paraquat per operator per day and to require the operator to use the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)
  - III. vary the instructions for use of paraquat applied by manually pressurised hand wand to remove rates that exceed 4.5 kg of paraquat per operator per day, or by mechanically pressurised hand wand at 2.3 kg of paraquat per operator per day and to require the operator to use the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading, exceeds acceptable occupational exposure levels
  - IV. vary the instructions for use of chemical products containing both diquat and paraquat applied by ground boom in broad scale agriculture to remove rates that exceed 337 kg of paraquat per operator per day and require the operator to use the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)
  - V. vary the instructions for use of chemical products containing both diquat and paraquat applied by manually pressurised hand wand to remove rates that exceed 4.5 kg of combined active constituent per operator per day, or 2.3 kg of combined active constituent per operator per day by mechanically pressurised hand wand

and require the operator to use the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading

- VI. vary the instructions for use to remove the instructions for using paraquat to in the following situations at rates greater than 45 g paraquat/ha
- non-agricultural situations, including around sheds, roadways, paths and firebreaks
  - orchards, vineyards
  - pasture, including spray topping for prevention of annual ryegrass toxicity
- VII. vary the instructions for use to remove the instructions for using paraquat to in the following situations at rates greater than 231 g paraquat/ha
- potatoes (early emergence and pre-harvest weed control)
  - fallows, lucerne, market gardens, row crops, vegetables
  - bananas
  - hops, sugarcane
  - rice, pre or post-sowing and pre-emergence,
  - peanuts
- VIII. vary the instructions for use to remove the instructions for use of paraquat for spray topping to prevent grass seed set in pulses at rates greater than 149 g paraquat/ha
- IX. vary the instructions for use of chemical products containing paraquat and diquat active constituents in all situations except in fallows as an aid to cultivation at rates below 175 g combined actives/ha.
- c) To address the concerns identified in paragraph 16)c) in relation to whether any trials or laboratory experiments have been carried out to determine the residues of the product and whether those results show that the residues of the product will not be greater than limits that the APVMA has approved or approves as required by section 5A(3)(b)(II), I propose to:
- I. vary the instructions for use of paraquat on “row crops, vegetables, market gardens, nurseries” and “orchards (including bananas) and vineyards” to provide specific instructions for each crop group listed in the APVMA Crop group guidelines that remains supported by other risk assessments
- II. remove the instructions for use of paraquat for pre-harvest weed control or pre-harvest desiccation of potatoes and post-emergent weed control over the top of sugarcane
- III. vary the instructions for use of paraquat to include the following withholding periods
- add a 14-day harvest withholding period for the spray topping use on Chick peas, faba beans, field peas, lentils and lupins, where not currently present
  - concerns related to the potential for residues in cotton trash used for feed or fodder will be addressed by removing the instructions for use of products containing paraquat and diquat on cotton which are also not supported by the environmental assessment in the *Paraquat Review Technical Report*.
  - add a harvest withholding period statement for all other uses of “Not required when used as directed” for pre-emergent or pre-sowing applications (and for post emergent application in peanuts up to 7-8 leaf stage) and for post-emergent directed applications.
- d) To address the concerns identified in paragraph 16)e) in relation to specifications for the containers for the products (section 5A(3)(b)(v) of the Agvet Code), I propose to vary the conditions of product registration to add the following requirement:

*Condition of Product Registration*

*This product must be supplied in a container that is sealed with a fitting compatible with closed mixing and loading systems capable of preventing contact between the contents of the container and users of the product during loading of the chemical into the application mechanism.*

- 18) I am satisfied that the relevant particulars and conditions of registration of the products listed in Table 1 of Attachment A of this notice can be varied in the ways set out in paragraph 17), above, so that the use of the products, in accordance with the instructions for use approved by the APVMA, meets the safety criteria as defined in section 5A of the Agvet Code.

**Consideration of whether registered chemical products meet the efficacy criteria**

- 19) Section 5B(1) of the Agvet Code provides that a chemical product meets the efficacy criteria if use of the product, in accordance with instructions approved, or to be approved, by the APVMA for the product, or contained in an established standard, is, or would be, effective according to criteria determined by the APVMA by legislative instrument.
- a) The criteria for agricultural chemical products are listed in Part 2 of the *Agricultural and Veterinary Chemicals Code (Efficacy Criteria) Determination 2014*.
- I. Section 4(b)(iii) of Part 2 of the *Agricultural and Veterinary Chemicals Code (Efficacy Criteria) Determination 2014* provides that the efficacy of a chemical product can be demonstrated by a history of sale and effective use in equivalent uses.
- II. I have had regard to the APVMA's annual levy data and am satisfied that chemical products containing paraquat are being sold in Australia.
- 20) Section 5B(2) of the Agvet Code provides that, for the purposes of being satisfied as to whether a chemical product meets the efficacy criteria, the APVMA must have regard to the following:
- a) Section 5B(2)(a) - whether any trials or laboratory experiments have been carried out to determine the efficacy of the product and, if so, the results of those trials or experiments.
- I. Trials and laboratory experiments and the results of those trials and experiments were submitted in support of the registration or variation of chemical products containing paraquat and found to demonstrate efficacy of paraquat chemical products prior to registration. I remain satisfied that this information demonstrates the efficacy of paraquat chemical products in destroying a plant for the as per the definition of an agricultural chemical product in section 5AA of the Agvet Code.
- b) Section 5B(2)(b) - any conditions to which its registration is, or would be, subject;
- I. I have considered the conditions of registration which apply to chemical products containing paraquat. I am satisfied that the conditions of registration are appropriate.
- c) Section 5B(2)(c) - any relevant particulars that are, or would be, entered in the Register for the product;
- I. I have considered the relevant particulars that are entered in the Register for chemical products containing paraquat. I am satisfied that the relevant particulars that are entered in the Register are appropriate.
- II. The variations to the instructions for use proposed to satisfy the safety criteria (as set out in paragraph 17)) and trade criteria (as set out in paragraph 26) are within existing use patterns. I am satisfied that these variations are appropriate.
- d) Section 5B(2)(ca) - whether the product conforms, or would conform, to any standard made for the product under section 6E to the extent that the standard relates to matters covered by subsection (1);

- I. There are no standards made under section 6E which are relevant to the efficacy of chemical products containing paraquat.
- e) Section 5B(2)(d) any matters prescribed by the regulations.
  - I. There are no regulations which are relevant to the efficacy of chemical products containing paraquat.

21) Having had regard to the matters set out above, I am satisfied that the use of chemical products containing paraquat meets the efficacy criteria as set out in section 5B of the Agvet Code and the *Agricultural and Veterinary Chemicals Code (Efficacy Criteria) Determination 2014*.

### **Consideration of whether registered chemical products meet the trade criteria**

- 22) Section 5C(1) of the Agvet Code provides that a product meets the trade criteria if use of the product, in accordance with instructions approved, or to be approved, by the APVMA or contained in an established standard, does not, or would not, unduly prejudice trade or commerce between Australia and places outside Australia.
- 23) Section 5C(3) of the Agvet Code provides that when considering whether a chemical products meets the trade criteria, the APVMA is required to have regard to the matters set out in subsection 5C(1) and 5C(2) to the extent prescribed by the regulations, or if there are no such regulations, to the extent that the APVMA thinks the matters are relevant.
- a) Regulation 8AD(2) of the Agvet Regulations provides that if it can be reasonably expected that a chemical product will be used in relation to a crop or animal, a product of which might be provided to a place outside Australia; or a crop that will be fed to animals a product of which might be provided to a place outside Australia then the APVMA must have full regard to the matters set out in section 5C(1) and (2) of the Agvet Code.
    - I. Chemical products containing paraquat are registered for use on crops that are considered major export commodities including berries and other small fruits (grapes), cereal grains, citrus fruit, cotton seed, oilseed {except cotton seed}, pome fruit, pulses, stone fruit and sugar cane. It is therefore reasonably expected that a product of these crops might be provided to a place outside of Australia.
    - II. Chemical products containing paraquat are registered for use on crops that can be used as stockfeed for mammalian and poultry animals. Mammalian and poultry animals and their products (including cattle, dairy products, pigs, sheep, goats, poultry and eggs) are considered major export commodities. It is therefore reasonably expected that a product of these animals might be provided to a place outside of Australia.
- 24) For the purposes of considering whether paraquat chemical products meet the trade criteria as described in section 5C(1) of the Agvet Code, I have has had full regard to the matters set out in section 5C(2).
- a) Section 5C(2)(a) - any conditions to which its registration is, or would be, subject.
    - I. I have had regard to the conditions of registration prescribed by regulation 17C(2) of the Agvet Regulations and the conditions imposed by the APVMA for the purpose of section 21(c)(v) in accordance with 23(1)(b).
    - II. I am satisfied that the conditions of registration currently applied to chemical products containing paraquat remain acceptable and that use of the products, in accordance with any instructions approved by the APVMA or contained in an established standard, does not or would not unduly prejudice trade or commerce between Australia and places outside Australia.
  - b) Section 5C(2)(b) - any relevant particulars that are, or would be, entered in the Register for the product.
    - I. The relevant particulars required to be entered in the Register for a chemical product are set out by section 20(1)(c) of the Agvet Code and prescribed by Regulation 16 of the Agvet Regulations as:
      - the distinguishing number;
      - any instructions for the use of the product

- the distinguishing name of the chemical product
  - the constituents of the chemical product
  - the concentration of each constituent of the chemical product
  - if possible, the composition and purity of each active constituent of the chemical product
  - the formulation type for the chemical product;
  - the net contents of the chemical product
  - identifying information for the holder of the registration for the chemical product
  - the name of each manufacturer of the chemical product
  - the address of each site at which the chemical product is manufactured by the manufacturer
  - the date of entry of these particulars in the Register of Chemical Products
  - identifying information for any nominated agent for the registration.
- II. I have considered the relevant particulars entered in the Register for each registered product containing paraquat and I have concluded that all relevant particulars except for the instructions for use for the product remain acceptable with respect to the trade criteria.
- III. I have had regard to the recommendations of the Residues and Trade assessment, as described in the *Paraquat Review Technical Report*, which considered the instructions for the use of chemical products containing paraquat and the potential for those uses to result in finite diquat residues on major export commodities. I am satisfied that the use of paraquat according to the instructions approved by the APVMA will not unduly prejudice trade between Australia and places outside Australia, with the following exceptions.
- Use of paraquat for post-emergent over-the-top application for weed control in sugarcane is not supported by sufficient information to allow calculation of the level of residues of paraquat that may be present. I am therefore not satisfied that use of paraquat sprayed over-the-top of sugarcane will not pose an undue risk to trade.
  - I am **not satisfied** that use of paraquat for spray-topping on chick-peas, faba beans, field peas, lentils, and lupins will not exceed applicable MRLs because the available information shows that the harvest withholding period should be 14 days, rather than the 7 days currently on some labels
  - The use of paraquat plus diquat products for pre-harvest desiccation of cotton is not supported by sufficient information to quantify residues of paraquat present in cotton trash used for fodder. I am **not satisfied** that this use will not pose an undue risk to trade and I note that this use is also not supported by the outcomes of the environmental safety risk assessment.
  - I am **not satisfied** that the current slaughter interval statement is sufficient to address trade risks as the available information indicates that residues of paraquat may be present in animals fed diets including paraquat-treated pasture, feed or fodder, at levels that exceed international MRLs for up to 12 days after being placed on clean feed.
- c) Section 5C(2)(ba), whether the product conforms, or would conform, to any standard made for the product under section 6E to the extent that the standard relates to matters covered by subsection (1);
- I. There are no standards made under section 6E that are relevant to the risk to trade or commerce between Australia and places outside Australia for the products containing paraquat listed in Attachment A.
- d) Section 5C(2)(c), any matters prescribed by the regulations.
- I. There are no matters prescribed by the regulations for the purposes of section 5C(2)(c) of the Agvet Code

- 25) I am **not satisfied** that the instructions for use of chemical products containing paraquat, recorded in the register for chemical products containing paraquat for the uses indicated in paragraph 24)b)III, above, meets the trade criteria.

### **Consideration of whether registered chemical products can be varied to meet the trade criteria**

- 26) I have considered whether the instructions for use for registered paraquat products can be varied in such a way as to meet the trade criteria set out in Section 5C(1) for the purposes of section 34A(1).

- a) To address concerns identified in paragraph 24)b), when considering the criteria in section 5C(2)(b) of the Agvet Code, in relation to any relevant particulars that are, or would be, entered in the Register for the product I propose to vary the instructions for use of paraquat products as follows.

- I. Remove the instructions for use of paraquat for post-emergent over-the-top application for weed control in sugarcane which is not supported by relevant information.
- II. Vary the harvest withholding period following use of paraquat for spray-topping on chick-peas, faba beans, field peas, lentils, and lupins to be 14 days.
- III. Remove the instructions for use of paraquat on cotton for pre-harvest desiccation, which do not meet the trade criteria and are also not supported by the environment risk assessment and cannot be varied to meet the safety criteria.
- IV. Vary the grazing withholding period statements to be consistent with contemporary labelling requirements as follows:

LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAYS AFTER APPLICATION

HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION

- V. Remove the current slaughter interval statement and replace with the export slaughter interval and trade advice statements as shown below to ensure that residues of paraquat that may be present in commodities derived from animals fed diets including paraquat-treated pasture, feed or fodder do not that exceed international MRLs.

#### **LIVESTOCK DESTINED FOR EXPORT MARKETS**

The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.

#### **EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS**

Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter

- VI. Add the following Trade Advice statement to the instructions for use of products approved for pre-harvest uses on cottonseed and specified pulses (chickpeas, faba beans, field peas, lentils and lupins) and the 'hay-freezing' use.

**EXPORT OF TREATED PRODUCE:** Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for [edible produce name] treated with [chemical product name]. If you are growing [edible produce name] for export, please check with [company name, industry body, etc.] for the latest information on MRLs and import tolerances before using [chemical product name].

- 27) I am satisfied that the instructions for use that are recorded in the Register for the chemical products containing paraquat listed in Attachment A of this notice can be varied in the ways set out in paragraph 26)a) above to allow me to be satisfied that those products meet the Trade Criteria set out in section 5D of the Agvet Code.

### **Consideration of whether registered chemical products comply with any requirement prescribed by the regulations**

- 28) Regulation 42 of the Agvet Regulations prescribes standards for chemical products for the purposes of section 87 of the Agvet Code.
- a) Regulation 42(3) prescribes standards that apply to a chemical product if the chemical product meets specific requirements listed in that regulation.
  - b) Regulation 42(3)(b) prescribes: “for a product or constituent (other than a product or constituent to which paragraph (a) applies) in respect of which a standard has been made under section 6E of the Code—that standard”.
    - I. The APVMA has made the *Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022* under section 6E of the Agvet Code, which applies to all paraquat products listed in Attachment A.
    - II. I accept the recommendation from the APVMA’s chemistry assessment of the information submitted to support registration of the chemical products listed in Attachment A, including declarations of composition and 5-batch analyses as described in the *Paraquat Review Technical Report*, and I am satisfied that registered agricultural chemical products containing paraquat conform to the specifications listed in the *Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022*.
- 29) I am satisfied that registered paraquat chemical products meet the requirements prescribed by regulation 42 of the Agvet Regulations for the purposes of section 87 of the Agvet Code.
- 30) I am satisfied that there are no other requirements prescribed by the regulations that have not been considered.

### **Labels for chemical products**

- 31) Sections 34(1)(c) and (d) of the Agvet Code provide that I must affirm the approval of a label if, and only if, I am satisfied that the label meets the labelling criteria, and complies with any requirement prescribed by the regulations.
- 32) Subsection 34(2) of the Agvet Code provides that subsection 34(1) applies only to the extent that the APVMA decides to reconsider matters covered by this subsection.
- 33) I have decided to reconsider all matters covered by subsection 34(1) in relation to the reconsideration of paraquat label approvals, except where those matters relate to the active constituent amitrole, co-formulated in some chemical products containing paraquat, or to other excipients.

### **Consideration of whether approved labels for paraquat chemical products meet the labelling criteria and comply with any requirement prescribed by the regulations**

- 34) Section 5D(1) of the Agvet Code provides that a label for containers for a chemical product ‘meets the labelling criteria’ if the label contains adequate instructions relating to such of the following as are appropriate:
- a) the circumstances in which the product should be used (5D(1)(a));
  - b) how the product should be used (5D(1)(b));
  - c) the times when the product should be used (5D(1)(c));

- d) the frequency of the use of the product (5D(1)(d));
- e) the withholding period after the use of the product (5D(1)(e));
- f) the re-entry period after the use of the product (5D(1)(f));
- g) the disposal of the product when it is no longer required (5D(1)(g));
- h) the disposal of containers of the product (5D(1)(h));
- i) the safe handling of the product and first aid in the event of an accident caused by the handling of the product (5D(1)(i));
- j) any matters prescribed by the regulations (5D(1)(j)). In this regard, regulation 8AE(1) of the Agvet Regulations prescribes the following:
  - I. Regulation 8AE(1)(a) – for a chemical product that is a veterinary chemical product, the duration of the treatment.
  - II. Regulation 8AE(1)(b) – the prevention of undue prejudice to trade or commerce between Australia and places outside of Australia.
  - III. Regulation 8AE(1)(c) – the appropriate signal words (if any) required by the current Poisons Standard.
  - IV. Regulation 8AE(1)(d) – for a chemical product that is a date-controlled product, the storage of containers for the product.
  - V. Regulation 8AE(1)(e) – any other matter determined by the APVMA CEO under regulation 8AE(2).

35) Section 5D(2) of the Agvet Code provides that for the purposes of being satisfied as to whether a label meets the labelling criteria, the APVMA must have regard to the matters set out in section 5D(2). I have considered these matters, with respect to whether the instructions relating to the matters listed in section 5D(1) are adequate as follows.

- a) Section 5D(2)(a) of the Agvet Code - any conditions to which the label's approval is, or would be, subject.
  - I. I am satisfied that the conditions to which label approvals are subject pursuant to section 23(1) of the Agvet Code, as prescribed by regulations 18B to 18J of the Agvet Regulations, are appropriate for the labels for containers for products listed in Attachment A of this notice, and that no additional conditions of label approval are required.
- b) Section 5D(2)(b) of the Agvet Code - any relevant particulars and instructions that are, or would be, entered in the relevant APVMA file for the label.
  - I. I have had regard the APVMA's chemistry, human health, environment, and residues and trade risk assessments as described in the *Diquat Review Technical Report* in regard to the to the relevant particulars and instructions entered in the file for each approved label listed in Attachment A and I am satisfied that all relevant particulars remain appropriate, except for the instructions for use as related to the matters listed in section 5D(1) of the Agvet Code.
  - II. I have had regard to the instructions entered in the relevant file relating to each matter listed in section 5D(1) as follows:
    - the circumstances in which the product should be used (s5D(1)(a))
      - I am **not satisfied** the instructions for use of paraquat in the following situations at rates greater than 45 g paraquat/ha are adequate to prevent exceedance of the RALs for wild birds, wild mammals or both, as described in the environment section of the *Paraquat Review Technical Report*
        - non-agricultural situations, including around sheds, roadways, paths and firebreaks



- orchards, vineyards
  - pasture, including spray topping for prevention of annual ryegrass toxicity
- I am **not satisfied** the instructions for use of paraquat in the following situations at rates greater than 231 g paraquat/ha are adequate to prevent exceedance of the RALs for wild birds, wild mammals or both, as described in the environment section of the *Paraquat Review Technical Report*
  - potatoes (early emergence and pre-harvest weed control)
  - fallows, lucerne, market gardens, row crops, vegetables
  - bananas
  - hops, sugarcane
  - rice, pre- or post-sowing and pre-emergence
  - peanuts
- I am **not satisfied** the instructions for use of paraquat for spray topping to prevent grass seed set in pulses at rates greater than 149 g paraquat/ha are adequate to prevent exceedance of the RALs for wild mammals, as described in the environment section of the *Paraquat Review Technical Report*
- I am **not satisfied** that the use of paraquat on flowering plants at rates exceeding 175 g ac/ha will not exceed the acceptable oral exposure level for foraging bees as described in the environment section of the *Paraquat Review Technical Report*
- I am **not satisfied** that the labels contain adequate protection statements and restraints to prevent unacceptable levels of exposure to paraquat for non-target species
- I am **not satisfied** that instructions for use of products containing paraquat co-formulated with diquat are adequate to prevent exceedance of the regulatory acceptable levels for wild mammals and/or wild birds, except when used as an aid to cultivation in fallow (full disturbance) at rates up to 175 g combined actives/ha, as described in the paraquat and diquat Review Technical Reports.
- In relation to how the product should be used (s5D(1)(b))
  - I have considered the instructions for how paraquat products should be used that are contained by the approved labels and I am **not satisfied** that the instructions are adequate in the following instances:
    - I am **not satisfied** that the restraints limiting how the products may be used are adequate to prevent exceedance of the acceptable occupational exposure levels described in the worker health and safety section of the *Paraquat Review Technical Report*.
    - I am **not satisfied** that the instructions for use in the following situations are adequate to prevent exceedance of the acceptable levels of occupational exposure as described in the worker health and safety section of the *Paraquat Review Technical Report*.
      1. instructions for use of paraquat applied by ground boom in small scale agriculture, i.e. row crops, vegetables and market gardens, are acceptable up to a maximum application of 6 ha/day at the maximum relevant label rate of 810 g ac/ha (4.86 kg of paraquat per operator per day) if the operator uses the following personal protective equipment: open cab, single layer of clothing, gloves, PF10 respirator, and face shield or goggles when mixing or loading.

2. instructions for use of paraquat applied by ground boom in broad scale agriculture at rates exceeding 337 kg of paraquat per operator per day exceeds acceptable occupational exposure levels, when the operator uses the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system).
  3. instructions for use of paraquat applied by manually pressurised hand wand at rates exceeding 4.5 kg of paraquat per operator per day, or by mechanically pressurised hand wand at rates exceeding 2.3 kg of paraquat per operator per day, exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading.
  4. instructions for use of chemical products containing both diquat and paraquat applied by ground boom in broad scale agriculture at rates that exceed 337 kg of paraquat per operator per day exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)
  5. instructions for use of chemical products containing both diquat and paraquat applied by manually pressurised hand wand to remove rates that exceed 4.5 kg of combined active constituent per operator per day, or 2.3 kg of combined active constituent per operator per day by mechanically pressurised hand wand exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading
- I am **not satisfied** that labels contain adequate instructions for how the products should be used to prevent paraquat spray drift from exceeding RALs in sensitive areas as described in the spray drift section of the *Paraquat Review Technical Report*.
- In relation to the times when the product should be used (s5D(1)(c)):
    - I have considered the instructions for the times when the product should be used and am satisfied that the instructions contained by the labels for paraquat products remain adequate in this respect as detailed in the *Paraquat Review Technical Report*.
  - In relation to the frequency of the use of the product (s5D(1)(d)):
    - I have considered the instructions for frequency of the use of the product and am satisfied that the instructions contained by the labels for paraquat products remain adequate in this respect as detailed in the *Paraquat Review Technical Report*.
  - In relation to the withholding period after the use of the product (s5D(1)(e)):
    - I have considered the instructions for the withholding periods after the use of paraquat products and I am **not satisfied** that the instructions are adequate in the following instances:
      - the harvest withholding period following use of paraquat for spray-topping on chick-peas, faba beans, field peas, lentils, and lupins is currently recorded as either 7 or 14 days, while the available information indicated that a 14-day withholding period is required to ensure that residues will not exceed MRLs in these crops as described in the *Paraquat Review Technical Report*

- the grazing withholding periods contained by the labels are not consistent with the current Agricultural Labelling Code
  - the current “Slaughter Interval” statement contained by the labels is not adequate to ensure that paraquat residues in animal commodities will not exceed international MRLS, as described in the residues and trade section of the *Paraquat Review Technical Report*.
- The re-entry period after the use of the product (s5D(1)(f)):
  - I have considered the re-entry instructions contained on the labels and I am **not satisfied** that the instructions are adequate to prevent exposure of people to levels of paraquat exceeding the acceptable occupational exposure levels as described in the *Paraquat Review Technical Report*.
- The disposal of the product when it is no longer required (s5D(1)(g)) and the disposal of containers for the product (s5D(1)(h)):
  - I have considered the instructions for disposal of the product when it is no longer required and the instructions for disposal of containers for paraquat products contained on the label and the current Agricultural Labelling Code, and I am **not satisfied** that the instructions are adequate, noting that they are not consistent with the current Agricultural Labelling Code, and that it may be an offence to bury chemical products and used containers in some jurisdictions.
  - In addition, I am proposing to require that closed mixing and loading be used for paraquat chemical products. Containers compatible with closed mixing and loading require specific disposal instructions as described in the Agricultural Labelling Code.
- The safe handling of the product and first aid in the event of an accident caused by the handling of the product (s5D(1)(i)).
  - I have considered the hazards and risks of exposure to paraquat in an accident caused by handling the product and I am **not satisfied** that the first aid instructions contained on the approved labels are adequate as described in the worker health and safety section of the *Paraquat Review Technical Report*.
  - I am **not satisfied** that the instructions for safe handling of the product contained on approved labels for paraquat products are adequate to prevent undue exposure to people handling the product as detailed in the worker health and safety section of the *Paraquat Review Technical Report*.
- Any matters prescribed by the regulations (s5D(1)(j)).
  - Regulation 8AE(1)(a) of the Agvet Regulations – for a chemical product that is a veterinary chemical product, the duration of the treatment.
    - Chemical products containing paraquat are not veterinary chemical products.
  - Regulation 8AE(1)(b) of the Agvet Regulations – the prevention of undue prejudice to trade or commerce between Australia and places outside of Australia.
    - I have considered the instructions contained on the labels relevant to the prevention of prejudice to trade or commerce and I am **not satisfied** that the current withholding period, export slaughter interval (ESI), and trade advice statements are adequate, as described in the residues and trade section of the *Paraquat Review Technical Report*.
  - Regulation 8AE(1)(c) of the Agvet Regulations – the appropriate signal words (if any) required by the current Poisons Standard.

- Chemical products containing paraquat are listed in Schedule 7 of the Poisons Standard and are required to bear the signal words “**DANGEROUS POISON**” on the first line of the main label.
- Chemical products are also required to bear the cautionary statement “**KEEP OUT OF REACH OF CHILDREN**” written immediately on a separate line immediately below the signal words.
- Aqueous solutions of Paraquat require the following cautionary statements in addition to the signal words to be written immediately below the KEEP OUT OF REACH OF CHILDREN statement:

**CAN KILL IF SWALLOWED**  
**DO NOT PUT IN DRINK BOTTLES**  
**KEEP LOCKED UP**

- As safety directions are required on all labels, the signal heading must also include the statement “**READ SAFETY DIRECTIONS BEFORE OPENING OR USING**”.
  - I have considered the signal words contained on the labels for products containing paraquat and I am satisfied that the labels listed in Attachment A bear the appropriate signal words and cautionary statements.
- Regulation 8AE(1)(d) of the Agvet Regulations – for a chemical product that is a date-controlled product, the storage of containers for the product.
    - Regulation 4 of the Agvet Regulations defines a date-controlled chemical product as “each veterinary chemical product and an agricultural chemical product specified in Schedule 1 to the Agvet Regulations”.
    - Chemical products containing paraquat are not specified in Schedule 1 to the Agvet Regulations and are therefore not date-controlled chemical products.
  - Regulation 8AE(1)(e) of the Agvet Regulations – any other matter determined by the APVMA CEO under regulation 8AE(2).
    - There are no other matters determined by the APVMA CEO under regulation 8AE(2) in relation to paraquat label approvals.
- c) Section 5D(2)(c) of the Agvet Code - whether the label conforms, or would conform, to any standard made for the label under section 6E to the extent that the standard relates to matters covered by subsection (1).
- I. There is no standard made for paraquat label approvals under section 6E.
- d) Section 5D(2)(d) of the Agvet Code - any matters prescribed by the regulations.
- I. Regulation 18E requires that if a labelling standard has not been made by the APVMA, then the label must comply with the requirements of either the *Veterinary Labelling Code*, if the product is a veterinary chemical product, or the *Agricultural Labelling Code*, if the product is an agricultural chemical product.
- II. I am **not satisfied** that the approved labels for paraquat agricultural chemical products comply with the current *Agricultural Labelling Code*, in particular in relation to the instructions for disposal of the product when it is no longer required (section 5D(1)(g)) and the disposal of containers for the product (section 5D(1)(h)) as noted in paragraph 35)b)II which do not contain the disposal statements required by the current *Agricultural Labelling Code*, and noting that it may be an offence to bury chemical products and used containers in some jurisdictions.

- e) I am satisfied that paraquat labels approvals are compliant with all other matters prescribed by the regulations; specifically, the conditions to which label approvals are subject as prescribed by regulations 18B to 18J.

36) I am **not satisfied** that currently approved labels for containers for paraquat chemical products contain adequate instructions relating to the matters set out in paragraph 35)b) above.

37) I am satisfied that all particulars, excluding the instructions contained on the label, that are recorded in the relevant APVMA file remain appropriate.

**Consideration of whether approved labels for chemical products can be varied so as to meet the labelling criteria and comply with any requirement prescribed by the regulations**

38) I have considered whether the labels approved for containers for paraquat chemical products can be varied in such a way as to meet the labelling criteria set out in Section 5D(1) of the Agvet Code for the purposes of section 34A(1).

- a) I propose to vary the labels for containers for paraquat products to address concerns identified in paragraph 35) above, when considering the matters in section 5D(2)(b) of the Agvet Code as follows.

I. I propose to vary the instructions relating to the circumstances in which the products should be used (s5D(1)(a)) to:

- remove instructions for use in the following situations at rates greater than 45 g paraquat/ha
  - Non-agricultural situations, including around sheds, roadways, paths and firebreaks
  - Orchards, vineyards
  - Pasture, including spray topping for prevention of annual ryegrass toxicity
- remove instructions for use in the following situations at rates greater than 149 g paraquat/ha
  - spray topping to prevent grass seed set in pulses
- remove instructions for use in the following situations at rates greater than 231 g paraquat/ha
  - Potatoes (early emergence and pre-harvest weed control)
  - Fallows, lucerne, market gardens, row crops, vegetables
  - Bananas
  - Hops, sugarcane
  - Rice, pre- or post-sowing and pre-emergence,
  - Peanuts
- remove the instructions for use of products containing paraquat co-formulated with diquat in any situation except as an aid to cultivation in fallow (full disturbance) at rates up to 175 g combined active constituents per hectare
- add the following protection statement related to bees

*Harmful to bees. DO NOT apply to flowering weeds or crops at rates exceeding [175 g ac/ha]. DO NOT allow spray drift to flowering weeds or crops in the vicinity of the treatment area. Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.*

- Add the following protection statements and restraints for the protection of non-target species

DO NOT apply if heavy rains or storms are forecast within 3 days

DO NOT irrigate to the point of field runoff for at least 3 days after application.

Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.

Very toxic to aquatic life. DO NOT contaminate wetlands or watercourses with this product or used containers.

Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.

II. I propose to vary the instructions in relation to how the product should be used (section 5D(1)(b)) to address the concerns identified in paragraph 35) to:

- Add the following restraints to limit occupational exposure:
- General Restraints
  - DO NOT remove contents except for immediate use.
  - DO NOT apply by spraying equipment carried on the back of the user.
  - DO NOT continue to use if eye irritation or bleeding from the nose occurs.
  - DO NOT use open mixing/loading equipment. Closed mixing and loading MUST be used.
- Restraints for specific uses
  - For applications greater than 6 ha per day:
    - DO NOT apply using open cab equipment. Enclosed cab application MUST be used.
  - For small scale applications up to 6 ha per day:
    - DO NOT apply using open cab equipment unless using a PF10 respirator.
  - For hand spray applications
    - DO NOT use hand wand sprays by spraying out of the window of a vehicle.
- Add the following spray drift restraints to prevent paraquat spray drift from exceeding RALs in sensitive areas:

#### SPRAY DRIFT RESTRAINTS

*Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)*

*DO NOT allow bystanders to come into contact with the spray cloud.*

*DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.*

*DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.*

*DO NOT apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.*

*DO NOT apply by a boom sprayer unless the following requirements are met:*

*- spray droplets not smaller than a MEDIUM spray droplet size category*

*- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.*

Paraquat - buffer zones for boom sprayers						
Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha or lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

- Add the following spray drift restraints to products containing both paraquat and diquat to prevent combined paraquat and diquat spray drift from exceeding RALs in sensitive areas

#### SPRAY DRIFT RESTRAINTS

*Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)*

*DO NOT allow bystanders to come into contact with the spray cloud.*

*DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.*

*DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.*

*DO NOT apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.*

*DO NOT apply by a vertical sprayer.*

*DO NOT apply by aircraft*

*DO NOT apply by a boom sprayer unless the following requirements are met:*

*- spray droplets not smaller than a MEDIUM spray droplet size category*

*- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.*

Diquat-paraquat co-formulated chemical products – buffer zones for boom sprayers						
Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
175 g acs/ha	0.5 m or lower	5	45	0	0	Not required
	1.0 m or lower	30	120	0	15	Not required
150 g acs/ha or lower	0.5 m or lower	0	40	0	0	Not required
	1.0 m or lower	30	110	0	15	Not required

III. I propose to vary the instructions in relation to the withholding period after the use of the product (s5D(1)(e)) as follows:

- Vary the Harvest Withholding Period following use of paraquat for spray-topping on chick-peas, faba beans, field peas, lentils, and lupins to 14 days, for labels where it is not already 14 days
- Vary the harvest Withholding Period statement for all other uses (as supported by other assessment outcomes) to “not required when used as directed”
- Vary the current grazing withholding periods to read:

LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION.

HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.

IV. I propose to vary the instructions in relation to the re-entry period after the use of the product (s5D(1)(f)) to read as follows for paraquat products.

***Re-entry period***

*DO NOT allow entry to treated areas until the spray has dried except in an enclosed cab. DO NOT allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 3 days.*

V. I propose to vary the instructions in relation to the re-entry period after the use of the product (s5D(1)(f)) to read as follows for products containing paraquat and diquat.

***Re-entry period***

*DO NOT allow entry to treated areas until the spray has dried.*

VI. I propose to vary the instructions for the disposal of the product when it is no longer required (s5D(1)(g)) and the disposal of containers for the product (s5D(1)(h)) to read:



**Storage and Disposal**

*Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight.*

*Empty contents fully into application equipment. Close all valves and return to [point of supply/designated collection point/other specific collection details] for refill or storage.*

- VII. I propose to vary the instructions for the safe handling of the product and first aid in the event of an accident caused by the handling of the product (s5D(1)(i)) to read as follows:

**First aid statements (all products)**

*If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.*

**Safety Directions (all products)**

*Very dangerous, particularly the concentrate. Do not swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, do not touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using. If clothing becomes contaminated with product or with wet spray remove clothing immediately. Do not inhale spray mist. Do not allow children to play with containers or any equipment that is used. When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles. When applying by low (manual pressurised) or high (mechanically pressurised) hand wand wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat, impervious footwear and a full face piece respirator with a canister specified for paraquat/diquat. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing and footwear*

- VIII. I propose to vary the instructions in relation to the prevention of undue prejudice to trade or commerce between Australia and places outside of Australia (Regulation 8AE(1)(b) of the Agvet Regulations) to include the following statements:

**LIVESTOCK DESTINED FOR EXPORT MARKETS**

*The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.*

**EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS**

*Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.*

- IX. I propose to vary the labels to include the following Trade Advice statement should be added to the labels of products containing pre-harvest uses on cottonseed and specified pulses (chickpeas, faba beans, field peas, lentils and lupins):

#### EXPORT OF TREATED PRODUCE

*Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for [edible produce name] treated with [chemical product name]. If you are growing [edible produce name] for export, please check with [company name, industry body, etc.] for the latest information on MRLs and import tolerances before using [chemical product name].*

- X. I propose to vary the labels to include the relevant signal words and precautionary statements required by the current Poisons Standard, where these are not already present, as follows:

**DANGEROUS POISON**  
**KEEP OUT OF REACH OF CHILDREN**  
**CAN KILL IF SWALLOWED**  
**DO NOT PUT IN DRINK BOTTLES**  
**KEEP LOCKED UP**  
**READ SAFETY DIRECTIONS BEFORE OPENING OR USING.**

- 39) Section 34A(3) of the Agvet Code provides that if the variation would affect instructions for use on a label, the APVMA must not make the variation until it has consulted each co-ordinator designated for a jurisdiction and taken into account any recommendations made by the co-ordinators.

- a) The APVMA will consult with each co-ordinator designated for a jurisdiction and take into account any recommendations made by the co-ordinators prior to making any variations that would affect instructions for use on a label, noting the proposals set out in this statement of reasons may be amended after consideration of all consultation submissions.

- 40) I am satisfied that the relevant particulars of the label approvals listed in Table 1 of Attachment A can be varied in the ways set out in paragraph 38) and Attachment D, so that the labels contain adequate instructions so as to meet the labelling criteria and comply with any requirement prescribed by the regulations.

## Conclusions

- 41) Having had regard to the matters set out above regarding paraquat active constituent approvals:

- a) I am **not satisfied** that the paraquat active constituent approvals listed in Table 1 in Attachment A **Error! Reference source not found.** meet the safety criteria;
- b) I am satisfied that the conditions of the paraquat active constituent approvals listed in Table 1 in Attachment A of this notice can be varied as described in paragraph 8) of this statement of reasons to meet the safety criteria and allow the approvals to be affirmed; and
- c) I am satisfied that the active constituents listed in Table 1 in Attachment A **Error! Reference source not found.** comply with any other requirement prescribed by the regulations.

- 42) Having had regard to the matters set out above regarding paraquat chemical products:

- a) I am **not satisfied** that the paraquat chemical products meet the safety criteria, trade criteria and any requirement prescribed by the regulations
  - b) I am satisfied that the paraquat chemical products meet the efficacy criteria
  - c) I am satisfied that the relevant particulars and conditions of paraquat chemical product registrations listed in Table 1 in Attachment A of Attachment A can be varied in such a way, as set out in paragraphs 17) and 26), of the statement of reasons, to allow the chemical product registrations to be affirmed
- 43) Having had regard to the matters set out above regarding paraquat label approvals:
- a) I am **not satisfied** that the label approvals for containers for paraquat chemical products meet the labelling criteria and comply with any requirement prescribed by the regulations
  - b) I am satisfied that the particulars of paraquat label approvals listed Table 1 in Attachment A of this notice can be varied, as set out in paragraph 38) of the statement of reasons and as reflected in the proposed labels in Attachment D of this notice, to allow the APVMA to be satisfied that the labels meet the labelling criteria in 5D of the Agvet Code and to allow the label approvals to be affirmed
- 44) Consequently, pursuant to section 34A(1) of the Agvet Code, I propose to:
- a) vary the conditions of paraquat active constituent approvals listed in Table 1 in Attachment A of this notice, in a manner set out in paragraphs 8) of the statement of reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - b) vary the relevant particulars and conditions of the chemical product registrations listed in Table 1 in Attachment A, in a manner set out in paragraphs 17), and 26) of the statement of reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - c) vary the relevant particulars of the label approvals listed in Table 1 in Attachment A the manner set out in paragraph 38) of the statement of reasons, and as reflected in the proposed labels in Attachment D of this notice, to allow affirmation under section 34(1) of the Agvet Code.

### Preliminary consideration of a phase-out period

- 45) I have considered whether a phase-out period could be applied to existing paraquat approvals and registrations in the event of any final decision to suspend, cancel or vary any paraquat approvals or registrations.
- 46) If, having considered all submissions received in response to this section 34AB notice, I proceed to suspend or cancel any paraquat active constituent approvals, chemical product registrations or label approvals, this will be done in accordance with the Agvet Code and in particular Division 5 of Part 2 of that Code. Division 5 of Part 2 includes requirements regarding the giving of notice of suspensions and cancellations and the inclusion of instructions relating to possession, custody or use of the constituent or product (section 45A). This Division also includes provision in relation to the deeming of a permit to possess, have custody of or use the constituent or product, or product as labelled (section 45B).
- 47) If, having considered all submissions received in response to this section 34AB notice, I proceed to vary any paraquat label approvals, a determination may be made under section 81(3) of the Agvet Code to permit the supply of registered chemical products with labels that were approved at an earlier time for a period allowed by the APVMA.
- 48) While I have not yet made any final decision to suspend, cancel or vary any paraquat approvals or registrations, my preliminary view is that, in the event that a decision to cancel, suspend or vary is made, any section 45B permit could have the maximum duration of 12 months provided by the Agvet Code, and any

determination under section 81(3) of the Agvet Code could allow supply of relevant chemical products with the earlier approved label also for a 2-year period.

## Attachment C: Information on which the reasons are based

- 1) The information on which the reasons in the Draft Statement of Reasons is based is set out below:
  - a) Information provided to the APVMA in response to notices:
    - I. Issued to Holders under section 32 of the Agvet Code on 27 October 1997, and additional notices issued under section 32 of the Agvet Code on 1 July 2015, 10 May 2016, 16 August 2017, and 28 February 2024
    - II. Published in the APVMA Gazette under section 32 of the Agvet Code on 2 December 1997
    - III. Issued to Holders under section 33 of the Agvet Code on 2 September 2021 and 28 August 2023
  - b) Other information assessed by the APVMA and summarised in the following published reports:
    - I. Paraquat toxicology report – summary, 26 October 2016
    - II. Paraquat toxicology report – supplement I toxicology, 26 October 2016
    - III. Paraquat toxicology report – supplement II neurotoxicology, 26 October 2016
    - IV. Paraquat Review Technical Report, 30 July 2024
  - c) Other information assessed by the APVMA summarised in the following unpublished reports (these are internal APVMA reports which include confidential commercial information belonging to multiple parties):
    - I. Paraquat and Diquat - Review on toxicology and occupational uses - HHRA FTR - APVMA COPY
    - II. Residues and Trade assessment – Paraquat Reconsideration – Final Recommendations
    - III. Paraquat - chemical review - environment 7.1 – fate
    - IV. Paraquat - chemical review - environment 7.2 – effects
    - V. Paraquat - chemical review - environment 7.3 – risk
    - VI. Paraquat - chemical review - environment 7.4 – combo with diquat
- 2) The relevant provisions of the Agvet Code and instruments under that Code, in particular those set out below:

**Table C1: Agricultural and Veterinary Chemicals Code Act 1994**

Section	Section Heading
<b>3</b>	Definitions
<b>5A</b>	Definition of <i>meets the safety criteria</i>
<b>5B</b>	Definition of <i>meets the efficacy criteria</i>
<b>5C</b>	Definition of <i>meets the trade criteria</i>
<b>5D</b>	Definition of <i>meets the labelling criteria</i>
<b>6E</b>	The APVMA may make standards
<b>19</b>	How approval of active constituent takes place
<b>20</b>	How registration of chemical product takes place

Section	Section Heading
21	How approval of label takes place
23	Conditions of approval or registration
31	APVMA may reconsider an approval or registration
33	APVMA may require information, reports, results or samples
34	Reconsideration by APVMA
34A	Varying relevant particulars or conditions to allow affirmation
34AA	Suspension or cancellation
34AB	Notice of proposed decision

Table C2: Agricultural and Veterinary Chemicals Code Regulations 1995

Section	Section Heading
8AA	Safety Criteria – active constituents
8AB	Safety Criteria – chemical products
8AD	Trade Criteria
8AE	Labelling Criteria
15	Particulars of approved active constituents to be recorded
16	Particulars of registered chemical products to be recorded
17	Particulars for label
17C	Conditions of approval or registration – active constituents and chemical products
18	Conditions of registration of chemical products - containers
18E	Labelling standards and requirements

Table C3: Other legislative instruments under the *Agricultural and Veterinary Chemicals Code Act 1994*

Legislative instruments
<u>Agricultural and Veterinary Chemical Code (Efficacy Criteria) Determination 2014</u>
<u>Agricultural and Veterinary Chemicals Code (Conditions of Approval or Registration) Order 2021</u>
<u>Agricultural and Veterinary Chemicals Code (Agricultural Active Constituents) Standards 2022</u>
<u>Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022</u>

- 10) *Therapeutic Goods (Poisons Standard—February 2024) Instrument 2024* (i.e. the Standard for the Uniform Scheduling of Medicines and Poisons)
- 11) The Agricultural Labelling Code as published on the APVMA website
- 12) The Veterinary Labelling Code as published on the APVMA website
- 13) The APVMA's risk assessment manuals as published on the APVMA website at <https://www.apvma.gov.au/registrations-and-permits/data-guidelines/risk-assessment-manuals>
  - a. Chemistry and manufacture
  - b. Environment
  - c. Human health
  - d. Residues and trade
  - e. Spray Drift Risk Assessment Manual
- 14) Annual levy data demonstrating sale of products containing paraquat in Australia

## Attachment D: Proposed sample labels for paraquat chemical products.

Representative labels for each product group are provided below

Active Constituents	Product Group
Soluble concentrate products containing paraquat as paraquat dichloride	
paraquat 250 g/L	1a
paraquat 300 g/L	1b
Paraquat 330 g/L or 334 g/L	1c, 1d
paraquat 350 g/L	1e
paraquat 360 g/L	1f
Soluble concentrate (SL) formulation containing paraquat as paraquat dichloride and diquat as diquat dibromide	
diquat 115 g/L paraquat 135 g/L	2
Soluble concentrate products containing paraquat and amitrole	
250 g/L paraquat, 10 g/L amitrole	3a
300 g/L paraquat, 12 g/L amitrole	3b



**Paraquat 250 g/L – product group 1a sample label**

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING.		
Product Name:	[Product Name]		
Constituent Statements:	ACTIVE CONSTITUENT: 250 g/L PARAQUAT present as PARAQUAT DICHLORIDE		
Mode of Action:	GROUP	22	HERBICIDE
Statement of Claims:	For the control of certain grasses and broadleaf weeds as per directions for use.		
Net Contents:	5 L - 1000 L		
Restraints:	<p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft or misting machines.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>For small scale applications up to 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment. Enclosed cab applications <b>MUST</b> be used.</p> <p><b>For hand spray applications:</b>  <b>DO NOT</b> use hand wand sprays by spraying out of the window of a vehicle.</p> <p><b>DO NOT</b> add wetter unless spraying at high volume. Where [Trade name] is mixed with water at less than 400 mL/100 L of water, add 60 mL 1000 g/L NON-IONIC SURFACTANT per 100 L of spray.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying but operations should commence within 7 days.</p> <p><b>SPRAY DRIFT RESTRAINTS</b></p>		

Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)

**DO NOT** allow bystanders to come into contact with the spray cloud.

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table below provides guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

**Paraquat – buffer zones for boom sprayers**

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:

Included in a separate table at the end of document.

Other Limitations:

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE.  
THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.

Withholding Periods:

GRAZING:  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION.  
HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.

	<p><b>HARVEST:</b> FIELD PEAS, CHICK PEAS, FABA BEANS, LUPINS, LENTILS AND VETCH – DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION. <b>OTHER USES:</b> NOT REQUIRED WHEN USED AS DIRECTED.</p>
Trade Advice:	<p><b>LIVESTOCK DESTINED FOR EXPORT MARKETS</b> The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.</p> <p><b>EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS</b> Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.</p> <p><b>EXPORT OF TREATED PRODUCE</b> Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for Field peas, Lupins, Lentils, Chickpeas, Faba beans, or Vetch treated with [Trade Name]. If you are growing Field peas, Lupins, Lentils, Chickpeas, Faba beans or Vetch for export, please check with [Company name] for the latest information on MRLs and import tolerances before using [Trade name].</p>
General Directions:	<p>This product kills annual grasses and most annual broadleaf weeds (excluding capeweed) in specified situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. Is immediately inactivated in the soil or heavy dew. The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds. Long-term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.</p> <p><b>1 Mixing</b> Add the required quantity of product to water in the spray tank and agitate to give even mixing. Agitate again if left standing.</p> <p><b>2 Clean water</b> Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.</p> <p><b>3 Application</b> (i) Cereals and Broadacre Spraying Use only through a properly calibrated boom spray which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used, it must be mounted so as to turn the soil back on to the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100 L/ha may be used for seedlings or well grazed weeds up to 2 cm high. For plant height 2-5 cm use 150 L/ha and up to 6-10 cm use 200L/ha. Spray volumes may be as low as 50 L/ha (30 L/ha in WA) for weed growth below 5 cm high, or for spray topping. Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give spray droplets not smaller than a MEDIUM spray droplet size category.</p> <p>(ii) High Volume Application Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops.</p>

	(iii) Wash spray equipment with clean water immediately after use. This product is highly corrosive to metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.
Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b>  <b>GROUP 22 HERBICIDE</b>  [Trade name] is a member of the bipyridyl group of herbicides. The product has the “photosynthesis at photosystem I inhibitor” mode of action. For weed resistance management the product is a Group 22 herbicide.</p> <p>Some naturally-occurring weed biotypes resistant to the product and other Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by the product or other Group 22 herbicides.</p> <p>Since the occurrence of resistant weeds is difficult to detect prior to use, [Company name] accepts no liability for any losses that may result from the failure of the product to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab.  <b>DO NOT</b> allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 2 days.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied on or near water which is used for human consumption.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF HONEY BEES AND OTHER INSECT POLLINATORS</b>  Harmful to bees.  <b>DO NOT</b> apply to flowering weeds or crops at rates exceeding 175 g ac/ha.  <b>DO NOT</b> allow spray drift to flowering weeds or crops in the vicinity of the treatment area.  Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.</p> <p>This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Store in the closed, original container in a dry, cool, well ventilated area. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p> <p>Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>

Safety Directions:	<p>Very dangerous, particularly the concentrate. DO NOT swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, DO NOT touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p> <p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>When applying by low (manual pressurised) or high (mechanically pressurised) hand wand, wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat, impervious footwear and a full face piece respirator with a canister specified for paraquat/diquat.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water), clothing and footwear</p>
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First Aid Instructions:	If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
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First Aid Warnings:	
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### DIRECTIONS FOR USE

CROP USE OR SITUATION	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Aid to Cultivation to minimise cultivation and prepare a clean bed for sowing.	Wild oats at 2-5 leaf stage in autumn / winter.	QLD, VIC, SA, TAS, NT only	600 mL to 800 mL	<p>Apply by ground boom only.</p> <p>Where cultivation follows spraying, it may commence one hour after spraying but should be completed within 7 days. Where heavy weed growth is present at spraying a better seed bed will result if cultivation is delayed 3-5 days.</p> <p>Pasture: Remains of old pasture should be reduced by heavy grazing. Remove stock 3-5 days before spraying to allow fresh growth.</p>
		NSW, ACT only	600 mL	
Rice	Annual grass and broadleaf weeds	QLD, NSW, NT only	800 mL	<p>Apply by ground boom only.</p> <p>Post- sowing, pre-crop emergence.</p>
Bananas	Annual weeds	QLD, NSW, NT, only	100 mL/100 L	Apply soon after emergence and before weeds reach 15 cm in height. Avoid chemical contact with roots and peepers near the pseudo stem.
Spray topping to reduce seed set	Annual ryegrass	All States	400 mL	<b>As an aid in managing annual ryegrass resistance. For use on escapes from a previous herbicide application in the current crop.</b>

Chickpea Faba beans Field peas Lentils Lupins Vetch				<p>Apply by ground boom only at the rate of 50-100L/ha. Spray with a calibrated boom spray raised to give double overlap at the level of the ryegrass seed heads.</p> <p>Spray the crop when the last ryegrass seed heads at the bottom of the plant have emerged and the majority are at or just past flowering (with anthers present or glumes open) but before haying off is evident - usually October to November.</p> <p>Reduction in crop yield may occur especially if the crop is less advanced relative to the ryegrass, that is if crops have a majority of green immature pods.</p>
Peanuts	<i>Datura</i> spp. (2-4 leaf)	QLD, NT only	400 mL	<p>Apply by ground boom only.</p> <p>Spray peanuts up to 7-8 leaf stage but before majority of plants flowering. Foliage will be scorched following application but plants recover rapidly. Apply in 200-250L/ha for thorough coverage of weed foliage. A dense canopy of weeds may reduce weed control due to shielding. Add 60mL 1000g/L NON-IONIC SURFACTANT/100L of spray mix. Do not use alkaline or anionic wetting agents.</p>
Post-emergence (in-crop)	Annual ground cherry (2-3 leaf)		600 mL	
	Apple-of-Peru (2-4 leaf)			
	Milkweed (2-3 leaf)			
	Stagger weed (2-3 leaf)		800 mL	
	Blue heliotrope (2-3 leaf)			
	Wandering Jew (2-3 leaf)			
	Anoda weed (2-4 leaf)			

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

**Paraquat 300 g/L – product group 1b sample label**

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Product Name:	[Product name]
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Constituent Statements:	ACTIVE CONSTITUENT: 300 g/L PARAQUAT present as PARAQUAT DICHLORIDE
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Mode of Action:	GROUP 22 HERBICIDE
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Statement of Claims:	For the control of certain grasses and broad leaf weeds as per directions for use.
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Net Contents:	5L - 1000L
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Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft, misting machines or handheld equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale applications up to 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment. Enclosed cab applications <b>MUST</b> be used.</p> <p><b>DO NOT</b> add wetter unless spraying at high volume. Where [Trade name] is mixed with water at less than 400 mL/100 L of water, add 100 mL of [600 g/L non-ionic surfactant] or 60 mL of [1000 g/L non-ionic surfactant] per 100 L of spray.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying but operations should commence within 7 days.</p> <p><b>SPRAY DRIFT RESTRAINTS</b> Specific definitions for terms used in this section of the label can be found at <a href="http://apvma.gov.au/spraydrift">apvma.gov.au/spraydrift</a></p>
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**DO NOT** allow bystanders to come into contact with the spray cloud.

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

**Paraquat - buffer zones for boom sprayers**

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:

Included in a separate table at the end of document.

Other Limitations:

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE.  
THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.

Withholding Periods:

GRAZING:  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION.  
HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.  
  
HARVEST:



	<p>FIELD PEAS, CHICK PEAS, FABA BEANS, LUPINS, LENTILS AND VETCH – DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.</p> <p>OTHER USES: NOT REQUIRED WHEN USED AS DIRECTED.</p>
Trade Advice:	<p><b>LIVESTOCK DESTINED FOR EXPORT MARKETS</b>  The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.</p> <p><b>EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS</b>  Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.</p> <p><b>EXPORT OF TREATED PRODUCE</b>  Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for Field peas, Lupins, Lentils, Chickpeas, Faba beans, or Vetch treated with [Trade name]. If you are growing Field peas, Lupins, Lentils, Chickpeas, Faba beans or Vetch for export, please check with [Company] for the latest information on MRLs and import tolerances before using [Trade name].</p>
General Directions:	<p>This product kills annual grasses and most annual broadleaf weeds (excluding capeweed) in specified situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. Is immediately inactivated in the soil. At spraying, weeds should be growing vigorously and must not be covered with soil or heavy dew. The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds. Long-term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.</p> <p><b>MIXING:</b>  Add the required amount of product to water in the spray tank and agitate to give even mixing. Agitate again if left to stand.</p> <p><b>Clean Water:</b> Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.</p> <p><b>APPLICATION:</b></p> <p>i) Cereals and Broadacre Spraying  Use only through a properly calibrated boom spray which should be filled with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed.  It is essential that a good marking or guidance system be used. If a disc marker is used, it must be mounted so as to turn the soil back on to the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100 L/ha may be used for seedlings or well grazed weeds up to 2 cm high. For plant height 2-5 cm use 150 L/ha and up to 6-10 cm use 200 L/ha. Spray volumes may be as low as 50 L/ha (30 L/ha in WA) for weed growth below 5 cm high, or for spray topping. Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give spray droplets not smaller than a MEDIUM spray droplet size.</p> <p>ii) High Volume Application  Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops.</p>

	<p>iii) Wash spray equipment with clean water immediately after use. This product is highly corrosive to metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.</p>
Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b>  <b>GROUP 22 HERBICIDE</b>  [Trade name] is a member of the bipyridyls group of herbicides. [Trade name] has the inhibitor of photosynthesis at photosystem I mode of action. For weed resistance management [Trade name] is a Group 22 herbicide. Some naturally occurring weed biotypes resistant to [Trade name] and other Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by [Trade name] or other Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use [Company] accepts no liability for any losses that may result from the failure of [Trade name] to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab.  <b>DO NOT</b> allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 2 days.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied on or near water which is used for human consumption</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF HONEY BEES AND OTHER INSECT POLLINATORS.</b>  Harmful to bees.  <b>DO NOT</b> apply to flowering weeds or crops at rates exceeding 583 mL/ha.  <b>DO NOT</b> allow spray drift to flowering weeds or crops in the vicinity of the treatment area. Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers. This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>

Storage and Disposal:	<p>Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.</p> <p>Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p> <p>ENVIRODRUM MICRO MATIC VALVE (110 L): Store the original sealed Envirodrum in a cool well- ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT tamper with the Micro Matic valve or the security seal. DO NOT contaminate the Envirodrum with water or any foreign matter. After each use of the product, please ensure that the Micro Matic coupler delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the Envirodrum have been used, please return the Envirodrum to the point of purchase. The Envirodrum remains the property of [Company].</p>
Safety Directions:	<p>Very dangerous, particularly the concentrate. DO NOT swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, DO NOT touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p> <p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing and footwear.</p>
First Aid Instructions:	<p>If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p>
First Aid Warnings:	

**DIRECTIONS FOR USE**

<b>CROP OR SITUATION</b>	<b>WEEDS CONTROLLED</b>	<b>STATE</b>	<b>RATE/ha</b>	<b>CRITICAL COMMENTS</b>
Aid to cultivation to minimise cultivation and prepare a clean bed for sowing	Wild oats at 2 to 5 leaf stage in autumn/winter	QLD, VIC, SA, TAS, NT only	500mL to 668mL	<p>Apply by ground boom only.</p> <p>Where cultivation follows spraying, it may commence one hour after spraying, but should be completed within 7 days. Where heavy weed growth is present at spraying, a better seed bed will result if cultivation is delayed 3 to 5 days.</p> <p>Pasture: Remains of old pasture should be reduced by continuous heavy grazing. Remove stock 3 to 5 days before spraying to allow fresh growth.</p>
		NSW, ACT only	500mL	
Rice	Annual grass and broadleaf weed control	QLD, NSW, NT only	668mL	<p>Apply by ground boom only.</p> <p>Post-sowing, pre-crop emergence.</p>
Spray topping to reduce seed set  Chickpea Faba beans Field peas Lentils Lupins Vetch	Annual ryegrass	NSW, VIC, SA, WA, ACT only	334mL	<p>As an aid in managing annual ryegrass resistance. For use on escapes from a previous herbicide application in the current crop.</p> <p>Apply by ground boom only in spray volume of 50-100 L/ha. Spray with a calibrated boom spray raised to give double overlap at the level of the ryegrass seed heads.</p> <p>Spray the crop when the last ryegrass seed heads at the bottom of the plant have emerged and the majority are at or just past flowering (with anthers present or glumes open) but before haying off is evident - usually October to November. Reduction in crop yield may occur especially if the crop is less advanced relative to the ryegrass, that is if crops have a majority of green immature pods.</p>
Peanuts  Post-emergence (in crop)	<i>Datura</i> spp. (2 to 4 leaf)	QLD, NT only	334 mL	<p>Apply by ground boom only.</p> <p>Spray peanuts up to 7-8 leaf stage but before majority of plants are flowering. Foliage will be scorched following application but plants recover rapidly. Apply in spray volume of 200 - 250 L/ha for thorough coverage of weed foliage. A dense canopy of weeds may reduce weed control due to shielding. Add 100 mL of [600 g/L non-ionic surfactant] or 60 mL of [non-ionic surfactant]/100 L of spray mix. Do not use alkaline or anionic wetting agents.</p> <p>Do not spray (on peanuts) under extremely hot dry conditions when peanuts are very small.</p>
	Annual ground cherry (2 to 3 leaf)		500 mL	
	Apple-of-Peru (2 to 4 leaf)			
	Milkweed (2 to 3 leaf)			
	Stagger weed (2 to 3 leaf)		668 mL	
	Blue heliotrope (2 to 3 leaf)			
	Wandering Jew (2 to 3 leaf)			
	Anoda weed (2 to 3 leaf)			

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION**

**Paraquat 330 g/L – product group 1c and 1d sample label**

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING.		
Product Name:	[Product name]		
Constituent Statements:	ACTIVE CONSTITUENT: 330 g/L [334 g/L] PARAQUAT present as PARAQUAT DICHLORIDE		
Mode of Action:	GROUP	22	HERBICIDE
Statement of Claims:	For the control of certain grasses and broadleaf weeds as specified in the Directions for Use table.		
Net Contents:	1L to 1000 L		
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft, misting machines or handheld equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale applications up to 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment. Enclosed cab applications <b>MUST</b> be used.</p> <p><b>DO NOT</b> add wetter unless spraying at high volume. Where [Trade name] is mixed with water at less than 300 mL/100 L of water, add 100 mL of [600 g/L non-ionic surfactant] or 60 mL of [1000 g/L non-ionic surfactant] per 100 L of spray. Do not use alkaline or anionic wetting agents.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying but operations should commence within 7 days.</p> <p><b>SPRAY DRIFT RESTRAINTS</b></p>		

Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)

**DO NOT** allow bystanders to come into contact with the spray cloud.

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

**Paraquat - buffer zones for boom sprayers**

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha or lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use: Included in a separate table at the end of document.

Other Limitations: FOR USE ONLY AS AN AGRICULTURAL HERBICIDE.  
THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.

Withholding Periods: GRAZING:  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION.  
HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.  
  
HARVEST:

	<p>FIELD PEAS, CHICK PEAS, FABA BEANS, LUPINS, LENTILS AND VETCH – DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.</p> <p>OTHER USES: NOT REQUIRED WHEN USED AS DIRECTED.</p>
Trade Advice:	<p><b>LIVESTOCK DESTINED FOR EXPORT MARKETS</b>  The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.</p> <p><b>EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS</b>  Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.</p> <p><b>EXPORT OF TREATED PRODUCE</b>  Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for Field peas, Lupins, Lentils, Chickpeas, Faba beans, or Vetch treated with [Trade name]. If you are growing Field peas, Lupins, Lentils, Chickpeas, Faba beans or Vetch for export, please check with [Company] for the latest information on MRLs and import tolerances before using [Trade name].</p>
General Directions:	<p>This product kills annual grasses and most annual broadleaf weeds (excluding capeweed) in specified situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. [Trade name] is immediately inactivated in the soil. At spraying, weeds should be growing vigorously and must not be covered with soil or heavy dew.</p> <p>The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds. Long term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.</p> <p><b>MIXING</b>  Add the required quantity of product to water in the spray tank and agitate to give even mixing. Agitate again if left standing.</p> <p><b>CLEAN WATER</b>  Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.</p> <p><b>APPLICATION</b>  <b>Cereals and Broadacre Spraying</b>  Use only through a properly calibrated boom spray which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used, it must be mounted so as to turn the soil back onto the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100 L/ha may be used for seedlings or well grazed weeds up to 2 cm high. For plant height 2-5 cm use 150 L/ha and up to 6-10 cm use 200 L/ha. Spray volumes may be as low as 50 L/ha (30 L/ha in WA) for weed growth below 5 cm high, or for spray topping. Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give spray droplets not smaller than a MEDIUM spray droplet size.</p> <p><b>High Volume Application</b></p>

	Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops. Wash spray equipment with clean water immediately after use. This product is highly corrosive to metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.
Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b>  <b>GROUP 22 HERBICIDE</b>  [Trade name] is a member of the bipyridyls group of herbicides.  Spraytop® 330 has the inhibitor of photosynthesis at photosystem I mode of action. For weed resistance management [Trade name] is a Group 22 herbicide. Some naturally occurring weed biotypes resistant to [Trade name] and other Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by [Trade name] or other Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use [Company] accepts no liability for any losses that may result from the failure of [Trade name] to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab.  <b>DO NOT</b> allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 2 days.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied on or near water which is used for human consumption.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF HONEY BEES AND OTHER INSECT POLLINATORS.</b>  Harmful to bees.  <b>DO NOT</b> apply to flowering weeds or crops at rates exceeding 530 mL/ha.  <b>DO NOT</b> allow spray drift to flowering weeds or crops in the vicinity of the treatment area. Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers. This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	All pack sizes: Store in the closed, original container in a dry, cool, well-ventilated locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight.



	<p>Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p> <p>Returnable container with Micro Matic Valve (60, 110 L: DO NOT tamper with the Micro Matic valve or the security seal. DO NOT contaminate the container with water or any foreign matter. After each use of the product, please ensure that the Micro Matic coupler, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the container have been used, close all the valves and return the container to the point of purchase. The container remains the property of [Company].</p> <p>1000 L: Storage must be secure so that contents cannot be tampered with. All locks and/or seals must be in order. If locks or seals are broken prior to initial use then the integrity of this product cannot be assured. If this occurs [Company] should be advised immediately. This container is reusable and remains the property of [Company]. DO NOT rinse empty container. Empty contents fully into application equipment. Close all valves and return to the point of supply or other designated collection point for refill or storage. No other liquid, solid or pesticide product should be put into it. When empty return to [Company] for cleaning, relabelling and refilling.</p>
Safety Directions:	<p>Very dangerous, particularly the concentrate. Do not swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, do not touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p> <p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. Do not inhale spray mist. Do not allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing and footwear</p>
First Aid Instructions:	<p>If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p>
First Aid Warnings:	

**DIRECTIONS FOR USE**

<b>CROP USE OR SITUATION</b>	<b>WEEDS CONTROLLED</b>	<b>STATE</b>	<b>RATE/ha</b>	<b>CRITICAL COMMENTS</b>
Aid to cultivation to minimise cultivation and prepare a clean bed for sowing	Wild Oats at 2-5 leaf stage in Autumn/Winter	Qld, Vic, Tas, SA, NT only	450 mL to 600 mL	<p>Apply by ground boom only.</p> <p>Where cultivation follows spraying, it may commence one hour after spraying but should be completed within 7 days. Where heavy weed growth is present at spraying a better seed bed will result if cultivation is delayed 3-5 days.</p> <p>Pasture: Remains of old pasture should be reduced by heavy grazing. Remove stock 3-5 days before spraying to allow fresh growth.</p>
		NSW, ACT only	450 mL	
Rice	Annual grass and broadleaf weed control	Qld, NSW, NT only	600 mL	<p>Apply by ground boom only.</p> <p>Post-sowing, pre-crop emergence.</p>
Spray-topping to reduce seed set  Chickpeas, Faba Beans, Field Peas, Lentils, Lupins, Vetch	Annual Ryegrass	All States	300 mL	<p><b>As an aid in managing annual ryegrass resistance. For use on escapes from a previous herbicide application in the current crop.</b></p> <p>Apply by ground boom only in 50-100 L/ha. Spray with a calibrated boom spray raised to give double overlap at the level of the ryegrass seed heads.</p> <p>Spray the crop when the last ryegrass seed heads at the bottom of the plant have emerged and the majority are at, or just past flowering (with anthers present or glumes open) but before haying off is evident – usually October to November</p> <p>Reduction in crop yield may occur especially if the crop is less advanced relative to the ryegrass; that is if crops have a majority of green immature pods.</p>
Peanuts  Post-emergence (in crop)	<b>2 to 4 leaf:</b> <i>Datura</i> spp.	Qld, NT only	300 mL	<p>Apply by ground boom only.</p> <p>Spray peanuts up to 7-8 leaf stage but before majority of plants are flowering. Foliage will be scorched following application, but plants recover rapidly. Apply in 200-250 L/ha for thorough coverage of weed foliage. A dense canopy of weeds may reduce weed control due to shielding. Add 100 mL of [600 g/L non-ionic surfactant] or 60 mL of [1000 g/L non-ionic surfactant] /100 L of spray mix.</p> <p>Do not spray (on peanuts) under extremely hot dry conditions when peanuts are very small.</p>
	<b>2 to 3 leaf:</b> Annual Ground Cherry, Milkweed		450 mL	
	<b>2 to 4 leaf:</b> Apple-of-Peru			
	<b>2 to 3 leaf:</b> Stagger Weed Blue Heliotrope Wandering Jew Anoda Weed		600 mL	

**NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL  
UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

**Paraquat 350 g/L – product group 1e sample label**

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING.
Product Name:	[Trade name]
Constituent Statements:	350 g/L PARAQUAT PRESENT AS PARAQUAT DICHLORIDE
Mode of Action:	GROUP 22 HERBICIDE
Statement of Claims:	For the Control of certain Grasses and Broadleaf Weeds as per Directions for Use
Net Contents:	5L-1000L
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft, misting machines or handheld equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale applications up to 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment. Enclosed cab applications <b>MUST</b> be used.</p> <p><b>DO NOT</b> add wetter unless spraying at high volume. Where [Trade name] is mixed with water at less than 285 mL/100 L of water, add 60 mL of 1000 g/L agricultural wetting agent per 100 L of spray.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying but operations should commence within 7 days.</p> <p><b>SPRAY DRIFT RESTRAINTS</b>  Specific definitions for terms used in this section of the label can be found at <a href="http://apvma.gov.au/spraydrift">apvma.gov.au/spraydrift</a></p> <p><b>DO NOT</b> allow bystanders to come into contact with the spray cloud.</p>

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category

- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

**Paraquat - buffer zones for boom sprayers**

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha or lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:

This section contains file attachment.

Other Limitations:

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE.  
THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.

Withholding Periods:

GRAZING:  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAYS AFTER APPLICATION.  
HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.

HARVEST:  
CHICK PEAS, FABA BEANS, FIELD PEAS, LENTILS, LUPINS, AND VETCH: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.  
OTHER USES NOT REQUIRED WHEN USED AS DIRECTED.

Trade Advice:	<p><b>LIVESTOCK DESTINED FOR EXPORT MARKETS</b> The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.</p> <p><b>EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS</b> Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.</p> <p><b>EXPORT OF TREATED PRODUCE</b> Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for chickpeas, faba beans, field peas, lentils or lupins treated with [Trade name]. If you are growing chickpeas, faba beans, field peas, lentils, lupins or vetch for export, please check with [Company] for the latest information on MRLs and import tolerances before using [Trade name].</p>
General Directions:	<p>This product kills annual grasses and most annual broadleaf weeds (excluding Capeweed) in specified situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. Is immediately inactivated in the soil. At spraying, weeds should be growing vigorously and must not be covered with soil or heavy dew. The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds. Long term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.</p> <p><b>MIXING</b> Add the required quantity of product to water in the spray tank and agitate to give even mixing. Agitate again if left standing.</p> <p><b>CLEAN WATER</b> Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.</p> <p><b>APPLICATION</b> Cereals and Broadacre Spraying Use only through a properly calibrated boom spray which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used, it must be mounted so as to turn the soil back onto the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100 L/ha may be used for seedlings or well grazed weeds up to 2 cm high. For plant height 2-5 cm use 150 L/ha and up to 6-10 cm use 200 L/ha. Spray volumes may be as low as 50 L/ha (30 L/ha in WA) for weed growth below 5 cm high, or for spray topping. Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give spray droplets not smaller than a MEDIUM spray droplet size.</p> <p><b>HIGH VOLUME APPLICATION</b> Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops. Wash spray equipment with clean water immediately after use. This product is highly corrosive to metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.</p>
Resistance Warning:	<p><b>GROUP 22 HERBICIDE</b> [Trade name] is a member of the bipyridyls group of herbicides. [Trade name] has the inhibitor of photosynthesis at photosystem 1 mode of action.</p>

	<p>For weed resistance management [Trade name] is a Group 22 herbicide. Some naturally-occurring weed biotypes resistant to [Trade name] and other Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by [Trade name] or other Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use [Company] accepts no liability for any losses that may result from the failure of [Trade name] to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab. <b>DO NOT</b> allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 2 days.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied on or near water which is used for human consumption.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF HONEYBEES AND OTHER INSECT POLLINATORS</b>  Harmful to bees.  <b>DO NOT</b> apply to flowering weeds or crops at rates exceeding 500mL/ha.  <b>DO NOT</b> allow spray drift to flowering weeds or crops in the vicinity of the treatment area. Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.  This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Store in the closed, original container in a cool, well-ventilated area. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p> <p>100L, 110L  Do not remove or tamper with the dry valves or security seal. Do not contaminate the drum with water or any other foreign matter. After each use of the product ensure that the dry valve coupler, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the drum is empty remove the dry valve coupler and return to the point of purchase.</p> <p>Other containers:  Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>
Safety Directions:	<p>Very dangerous, particularly the concentrate. Do not swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, do not touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p>

	<p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. Do not inhale spray mist. Do not allow children to play with containers or any equipment that is used. When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing and footwear</p>
First Aid Instructions:	If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
First Aid Warnings:	

**DIRECTIONS FOR USE**

<b>CROP / SITUATION</b>	<b>WEEDS</b>	<b>RATE/ha</b>	<b>STATE</b>	<b>CRITICAL COMMENTS</b>
<b>Aid to Cultivation</b> to minimize cultivation and prepare a clean bed for sowing	Wild Oats at 2-5 leaf stage in autumn / winter	430-570 mL	Qld, Vic, Tas, SA, NT only	<p>Apply by ground boom only.</p> <p>Where cultivation follows spraying, it may commence one hour after spraying but should be completed within 7 days. Where heavy weed growth is present at spraying a better seed bed will result if cultivation is delayed 3-5 days.</p> <p><b>Pasture:</b> Remains of old pasture should be reduced by heavy grazing. Remove stock 3-5 days before spraying to allow fresh growth.</p>
		430 mL	NSW, ACT only	
<b>Rice</b>	Annual grass and broadleaf weed control	570 mL	Qld, NSW, NT only	<p>Apply by ground boom only.</p> <p>Post- sowing, pre-crop emergence.</p>
<b>Spray topping to reduce seed set</b> Chickpeas, Faba beans, Field peas, Lentils, Lupins, Vetch	Annual Ryegrass	285 mL	All states	<p><b>As an aid in managing Annual Ryegrass resistance. For use on escapes from a previous herbicide application in the current crop.</b></p> <p>Apply by ground boom only in 50-100 L/ha. Spray with a calibrated boom spray raised to give double overlap at the level of the Ryegrass seed heads.</p> <p>Spray the crop when the last Ryegrass seed heads at the bottom of the plant have emerged and the majority are at or just past flowering (with anthers present or glumes open) but before haying off is evident – usually October to November..</p> <p>Reduction in crop yield may occur especially if the crop is less advanced relative to the Ryegrass, i.e. if crops have a majority of green immature pods.</p>
<b>Peanuts</b>  Post-emergence (in-crop)	<i>Datura</i> spp. (2-4 leaf)	285 mL	Qld, NT only	<p>Apply by ground boom only.</p> <p>Spray peanuts up to 7-8 leaf stage but before majority of plants are flowering. Foliage will be scorched following application but plants recover rapidly. Apply in 200-250 L/ha for thorough coverage of weed foliage. A dense canopy of weeds may reduce weed control due to shielding. Add 60 mL of 1000 g/L agricultural wetting agent per 100 L of spray mix. DO NOT use alkaline or anionic wetting agents.</p> <p>DO NOT spray (on peanuts) under extremely hot dry conditions when peanuts are very small.</p>
	Annual ground cherry (2-3 leaf)	430 mL		
	Apple-of-Peru (2-4 leaf)			
	Milkweed (2-3 leaf)			
	Stagger Weed (2-3 leaf)	570 mL		
	Blue Heliotrope (2-3 leaf)			
	Wandering Jew (2-3 leaf)			
	Anoda Weed (2-4 leaf)			

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION**



**Paraquat 360 g/L – product group 1f sample label**

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING.		
Product Name:	[Trade name]		
Constituent Statements:	350 g/L PARAQUAT PRESENT AS PARAQUAT DICHLORIDE		
Mode of Action:	GROUP	22	HERBICIDE
Statement of Claims:	For the Control of certain Grasses and Broadleaf Weeds as per Directions for Use		
Net Contents:	5L-1000L		
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft, misting machines or handheld equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale applications up to 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment. Enclosed cab applications <b>MUST</b> be used.</p> <p><b>DO NOT</b> add wetter unless spraying at high volume. Where [Trade name] is mixed with water at less than 285 mL/100 L of water, add 60 mL of 1000 g/L agricultural wetting agent per 100 L of spray.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying but operations should commence within 7 days.</p> <p><b>SPRAY DRIFT RESTRAINTS</b>          Specific definitions for terms used in this section of the label can be found at <a href="http://apvma.gov.au/spraydrift">apvma.gov.au/spraydrift</a></p> <p><b>DO NOT</b> allow bystanders to come into contact with the spray cloud.</p>		

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category

- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

**Paraquat - buffer zones for boom sprayers**

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha or lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:

This section contains file attachment.

Other Limitations:

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE.  
THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.

Withholding Periods:

GRAZING:  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAYS AFTER APPLICATION.  
HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.

HARVEST:  
CHICK PEAS, FABA BEANS, FIELD PEAS, LENTILS, LUPINS, AND VETCH: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.

OTHER USES: NOT REQUIRED WHEN USED AS DIRECTED.

Trade Advice:	<p><b>LIVESTOCK DESTINED FOR EXPORT MARKETS</b> The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.</p> <p><b>EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS</b> Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.</p> <p><b>EXPORT OF TREATED PRODUCE</b> Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for chickpeas, faba beans, field peas, lentils or lupins treated with [Trade name]. If you are growing chickpeas, faba beans, field peas, lentils, lupins or vetch for export, please check with [Company] for the latest information on MRLs and import tolerances before using [Trade name].</p>
General Directions:	<p>This product kills annual grasses and most annual broadleaf weeds (excluding Capeweed) in specified situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. Is immediately inactivated in the soil. At spraying, weeds should be growing vigorously and must not be covered with soil or heavy dew. The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds. Long term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.</p> <p><b>MIXING</b> Add the required quantity of product to water in the spray tank and agitate to give even mixing. Agitate again if left standing.</p> <p><b>CLEAN WATER</b> Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.</p> <p><b>APPLICATION</b> <b>Cereals and Broadacre Spraying</b> Use only through a properly calibrated boom spray which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used, it must be mounted so as to turn the soil back onto the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100 L/ha may be used for seedlings or well grazed weeds up to 2 cm high. For plant height 2-5 cm use 150 L/ha and up to 6-10 cm use 200 L/ha. Spray volumes may be as low as 50 L/ha (30 L/ha in WA) for weed growth below 5 cm high, or for spray topping. Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give spray droplets not smaller than a MEDIUM spray droplet size.</p> <p><b>HIGH VOLUME APPLICATION</b> Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops. Wash spray equipment with clean water immediately after use. This product is highly corrosive to metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.</p>
Resistance Warning:	<p><b>GROUP 22 HERBICIDE</b> [Trade name] is a member of the bipyridyls group of herbicides. [Trade name] has the inhibitor of photosynthesis at photosystem 1 mode of action.</p>

	<p>For weed resistance management [Trade name] is a Group 22 herbicide. Some naturally-occurring weed biotypes resistant to [Trade name] and other Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by [Trade name] or other Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use [Company] accepts no liability for any losses that may result from the failure of [Trade name] to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab. <b>DO NOT</b> allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 2 days.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied on or near water which is used for human consumption.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF HONEYBEES AND OTHER INSECT POLLINATORS</b>  Harmful to bees.  <b>DO NOT</b> apply to flowering weeds or crops at rates exceeding 500mL/ha.  <b>DO NOT</b> allow spray drift to flowering weeds or crops in the vicinity of the treatment area. Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.  This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Store in the closed, original container in a cool, well-ventilated area. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p> <p>100L, 110L  Do not remove or tamper with the dry valves or security seal. Do not contaminate the drum with water or any other foreign matter. After each use of the product ensure that the dry valve coupler, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the drum is empty remove the dry valve coupler and return to the point of purchase.</p> <p>Other containers:  Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>
Safety Directions:	<p>Very dangerous, particularly the concentrate. <b>DO NOT</b> swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, <b>DO NOT</b> touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p>

	<p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used. When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing and footwear</p>
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First Aid Instructions:	If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
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First Aid Warnings:	
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### DIRECTIONS FOR USE

CROP / SITUATION	WEEDS	RATE/ha	STATE	CRITICAL COMMENTS
Aid to Cultivation to minimize cultivation and prepare a clean bed for sowing	Wild Oats at 2-5 leaf stage in autumn / winter	430-570 mL	Qld, Vic, Tas, SA, NT only	<p>Apply by ground boom only.</p> <p>Where cultivation follows spraying, it may commence one hour after spraying but should be completed within 7 days. Where heavy weed growth is present at spraying a better seed bed will result if cultivation is delayed 3-5 days.</p> <p><b>Pasture:</b> Remains of old pasture should be reduced by heavy grazing. Remove stock 3-5 days before spraying to allow fresh growth.</p>
		430 mL	NSW, ACT only	
Rice	Annual grass and broadleaf weed control	570 mL	Qld, NSW, NT only	<p>Apply by ground boom only.</p> <p>Post- sowing, pre-crop emergence.</p>
Spray topping to reduce seed set Chickpeas, Faba beans, Field peas, Lentils, Lupins, Vetch	Annual Ryegrass	285 mL	All states	<p><b>As an aid in managing Annual Ryegrass resistance. For use on escapes from a previous herbicide application in the current crop.</b></p> <p>Apply by ground boom only in 50-100 L/ha. Spray with a calibrated boom spray raised to give double overlap at the level of the Ryegrass seed heads.</p> <p>Spray the crop when the last Ryegrass seed heads at the bottom of the plant have emerged and the majority are at or just past flowering (with anthers present or glumes open) but before haying off is evident – usually October to November..</p> <p>Reduction in crop yield may occur especially if the crop is less advanced relative to the Ryegrass, i.e. if crops have a majority of green immature pods.</p>
Peanuts	<i>Datura</i> spp. (2-4 leaf)	285 mL		Apply by ground boom only.

CROP / SITUATION	WEEDS	RATE/ha	STATE	CRITICAL COMMENTS
Post-emergence (in-crop)	Annual ground cherry (2-3 leaf)	430 mL	Qld, NT only	<p>Spray peanuts up to 7-8 leaf stage but before majority of plants are flowering. Foliage will be scorched following application but plants recover rapidly. Apply in 200-250 L/ha for thorough coverage of weed foliage. A dense canopy of weeds may reduce weed control due to shielding. Add 60 mL of 1000 g/L agricultural wetting agent per 100 L of spray mix. DO NOT use alkaline or anionic wetting agents.</p> <p>DO NOT spray (on peanuts) under extremely hot dry conditions when peanuts are very small.</p>
	Apple-of-Peru (2-4 leaf)			
	Milkweed (2-3 leaf)			
	Stagger Weed (2-3 leaf)	570 mL		
	Blue Heliotrope (2-3 leaf)			
	Wandering Jew (2-3 leaf)			
	Anoda Weed (2-4 leaf)			

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION**

**Paraquat 135 g/L plus diquat 115 g/L – product group 2 sample label**

Signal Headings:	<p>DANGEROUS POISON</p> <p>KEEP OUT OF REACH OF CHILDREN</p> <p>CAN KILL IF SWALLOWED</p> <p>DO NOT PUT IN DRINK BOTTLES</p> <p>KEEP LOCKED UP</p> <p>READ SAFETY DIRECTIONS BEFORE OPENING OR USING.</p>
Product Name:	[Product name]
Constituent Statements:	<p>ACTIVE CONSTITUENTS:</p> <p>135 g/L PARAQUAT present as PARAQUAT DICHLORIDE</p> <p>115 g/L DIQUAT present as DIQUAT DIBROMIDE</p>
Mode of Action:	GROUP 22 HERBICIDE
Statement of Claims:	For control of certain grasses and broadleaf weeds.
Net Contents:	[Insert]
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft or misting machines or hand-held equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale application up to 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment. Enclosed cab application <b>MUST</b> be used.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying.</p> <p><b>SPRAY DRIFT RESTRAINTS</b>          Specific definitions for terms used in this section of the label can be found at <a href="http://apvma.gov.au/spraydrift">apvma.gov.au/spraydrift</a></p> <p><b>DO NOT</b> allow bystanders to come into contact with the spray cloud.</p> <p><b>DO NOT</b> apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or</p>

cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table below provides guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

**Paraquat – buffer zones for boom sprayers**

Applicati on rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:	This section contains file attachment.
Other Limitations:	FOR USE ONLY AS AN AGRICULTURAL HERBICIDE. THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.
Withholding Periods:	<p>GRAZING: LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAYS AFTER APPLICATION. HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.</p> <p>HARVEST CHICK PEAS, FABA BEANS, FIELD PEAS, LENTILS, LUPINS, VETCH - DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION. OTHER USES: NOT REQUIRED WHEN USED AS DIRECTED.</p>
Trade Advice:	LIVESTOCK DESTINED FOR EXPORT MARKETS



	<p>The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.</p> <p><b>EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS</b> Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.</p> <p><b>EXPORT OF TREATED PRODUCE</b> Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for chickpeas, faba beans, field peas, lentils, lupins or vetch treated with [Trade name]. If you are growing chickpeas, faba beans, field peas, lentils, lupins or vetch for export, please check with [Company] for the latest information on MRLs and import tolerances before using [Trade name].</p>
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General Directions:	<p>[Trade name] quickly kills a wide range of annual grasses, broadleaf weeds and some perennial grasses when sprayed directly onto the leaves. The active ingredients are rapidly and tightly absorbed by clay and silt particles in the soil and do not leave any effective soil residues. Thus, crops sown almost immediately after spraying are not affected by the [Trade name], nor are weed seeds which germinate after spraying. At spraying weeds should therefore not be covered by soil or dust as this may severely reduce efficacy.</p> <p>Where insect pests are anticipated use recommended insecticide treatment. Regular checks should be made before and after sowing.</p> <p>Suitable residual herbicides can be tank mixed with [Trade name] to provide extended in-crop weed control in fallows and subsequent crops. Read label recommendations of the respective residual herbicides prior to their use and observe precautions against use of residual herbicides before planting susceptible crops. See compatibility statement on this label for compatibility of [Trade name] with other herbicides. The principle of selective weed control with this product is that annual weeds are controlled but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limited at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds.</p> <p>Refer to local pasture guidelines for optimum plant densities.</p> <p>Mixing</p> <p>The recommended rate of [Trade name] should be added to water in the spray tank and agitated to give even mixing. Agitate again if left standing.</p> <p>Water Volume</p> <p>It is essential to obtain good leaf coverage with the spray. The following volumes are recommended:</p>		
	<b>Winter Rainfall Areas</b>	<b>Boom Spray</b>	<b>Summer Rainfall Areas: Weed Stage and Density</b>
	Plant height up to 2 cm	50 to 100 L/ha	Small plants (2 to 5 leaf) and well separated
	Plant height up to 2 to 5 cm	100 to 150 L/ha	30 to 50 % ground cover

**Note:**

(1) If the volume is increased above 100 L/ha additional wetter should be added at the rate of 200 mL of [600 g/L non-ionic surfactant]/100 L or 120 mL [1000 g/L non-ionic surfactant] per 100 L of additional water.

(2) Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.

**Application****Boom Spray**

Use only through a properly calibrated boom spray which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used it must be mounted so as to turn the soil back on to the area sprayed. Coverage of the weeds with the spray solution is critical for maximising efficacy. This is particularly important with fine leaf grasses. Use the recommended spray volume for the corresponding weed size and density from the Water Volume table above.

**Clean up**

Wash spray equipment with clean water immediately after use. This product is corrosive to metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.

[Trade name] is not compatible with copper, zinc or manganese sulphates.

**Direct Drilling Procedure (1)**

Use of [Trade name] in crop establishment with no working before sowing.

Step	Critical Comments
1. Burn	If possible crop stubble or pasture trash should be burnt early to avoid problems at sowing. Can also promote weed seed germination.
2. Shallow cultivation - optional	Should be carried out on opening rains to a depth of no more than 2 cm. This will encourage early even germination of weeds particularly annual grasses.
3. Heavily graze paddocks continuously from germination	This prepares the paddock for spraying by keeping the pasture short and open and at the same time restricts the development of the weed roots which will assist seed bed formation.
4. Remove stock 2 to 3 days before spraying	Allow the weeds to freshen up - important for maximum uptake of [Trade name]. Spraying can, however, take place immediately after stock removal provided there is sufficient leaf cover and the pasture is not dusty.
5. Spraying with a boom spray	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under Directions for Use.
6. Sow 3 to 5 days after spraying	A rigid tyne spring release combine is preferred to ensure adequate penetration. Points should not be worn. The combine must be level and set to work 3 to 5 cm and sow seed at recommended depth. Use standard seed and fertiliser rates. When harrowing is considered necessary use trailing harrows. Sowing can commence one 1 hour after spraying and should be completed within 7 days. Where heavy weed growth is present a better seed bed will result if sowing is delayed for 3 to 5 days.

## Crop Establishment with a Cultivation AFTER Spraying. Crop Establishment Procedure (2)

Step	Critical Comments
1. Graze paddocks continuously from germination	This prepares the paddock for spraying by keeping the pasture short and open and at the same time restricts the development of the weed roots, which will assist seed bed formation.
2. Remove stock 2 to 3 days before spraying	Allows the weeds to freshen up - important for maximum uptake of [Trade name]. Spraying can take place immediately after stock removal provided there is sufficient leaf cover and the pasture is not dusty.
3. Spray with a boom spray	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under Directions for Use.
4. Cultivate	Between 1 hour and 7 days after spraying. When dense weed growth is present implement penetration and resulting seed bed may be improved if cultivation commences 3 to 5 days after spraying. It is not necessary to cultivate deeper than sowing depth. Use scarifier or combine with heavy harrows.
5. Sow	Sow at the recommended seed and fertilizer rates and depth.

## Crop Establishment with a Cultivation BEFORE Spraying. Crop Establishment Procedure (3)

Step	Critical Comments
1. Graze	Graze pasture or stubble to keep growth of weeds down to a minimum following the autumn break.
2. Cultivate 4 to 6 weeks prior to the anticipated sowing date	Cultivate after autumn rains when conditions are suitable to produce a seed bed and before heavy weed growth develops. A scarifier and heavy harrows should be used with the aim of killing existing weed growth and leaving the seed bed in a level condition. It is not necessary to cultivate deeper than the sowing depth.
3. Wait	Wait 4 to 6 weeks to allow a full germination of weeds. Graze if necessary
4. Remove stock 2 to 3 days before spraying	Allow the weeds to freshen up - important for maximum uptake of [Trade name]
5. Spray with a boom spray	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under Directions for Use.
6. Sow	Between one 1 hour and 7 days after spraying, sow crop in the normal manner. Sow at recommended seed and fertiliser rates and depth.  NOTE: Where heavy weed growth is present at spraying, a better seed bed will result if sowing is delayed for 3 to 5 days.

NOTE: For on the farm advice and assistance, contact your dealer or [Company] Representative.

Resistance Warning:	<b>RESISTANT WEEDS WARNING</b> <b>GROUP 22 HERBICIDE</b> [Trade name] is a member of the bipyrldyls group of herbicides. [Trade name] has the inhibitors of photo-synthesis at photosystem I mode of action. For weed resistance
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	<p>management [Trade name] is a Group 22 herbicide. Some naturally occurring weed biotypes resistant to [Trade name] and other Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by [Trade name] or other Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, [Company] accepts no liability for any losses that may result from the failure of [Trade name] to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied of or near water which is used for human consumption.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers. This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in the closed, original container in a dry, cool, well ventilated locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p> <p>Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>

Safety Directions:	<p>Very dangerous, particularly the concentrate. DO NOT swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, DO NOT touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p> <p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) and footwear.</p>
First Aid Instructions:	If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
First Aid Warnings:	

## DIRECTIONS FOR USE

Crop/Situation	Weeds Controlled		Growth Stage	Rate/ha	States	Critical Comments
	Common Name	Botanical Name				
<b>SOUTHERN AUSTRALIA</b>  <b>DIRECT DRILLING</b> with full combine  <b>or</b>  with cultivation before spraying  <b>or</b>  with cultivation after spraying as an aid in the establishment of crops Including:  <b>Winter</b> Canola, Chickpeas, Cereals (Wheat, Barley, Oats, Rye, Triticale), Field beans, Field peas, Lentils, Linseed (Linola), Lupins, Vetch	Seedling grasses	<i>Lolium rigidum</i> <i>Bromus</i> spp. <i>Hordeum</i> spp. <i>Avena</i> spp.	2 to 3 leaf	0.6 to 0.8 L	Sthn NSW, Vic, Tas, SA, WA only  <b>Apply by ground boom only.</b>  <b>Refer to Crop Establishment Procedure (1)</b>  In WA apply after the autumn break within 4 weeks of weed germination. In the other states apply to young or well grazed weeds. In a typical mixed weed situation use the rate recommended for the growth stage of the hardest-to-kill weed species. Rates shown are for optimum conditions, for sowing equipment with wide points and overall soil disturbance.	
	Annual Ryegrass Brome Grass Barley Grass Volunteer Cereals Wild Oats					
	Vulpia (Silver Grass, Sand Fescue)		<i>Vulpia</i> spp	2 to 3 leaf		0.6 to 0.8 LΔ

<p><b>Spring/Summer</b> Fodder Rape, Pigeon peas, Safflower, Sorghum, Soybeans, Sunflower</p> <p><b>Pasture</b> Clover Grass, Lucerne, Medic</p>					<p>Δ For control of Vulpia (Silver Grass) add a 160 mL of [600 g/L non-ionic surfactant] or 100 mL of [1000 g/L non-ionic surfactant] per 100L.</p> <p><b>Also refer to Crop Establishment Procedure (2) - cultivation after spraying.</b></p> <p>Cultivation or sowing can commence 30 minutes after spraying but should be completed within 7 days unless a suitable residual herbicide is added or weeds are sprayed again.</p> <p>Where heavy weed growth is present at spraying a better seed bed will result if cultivation or sowing is delayed 3 to 5 days to obtain maximum root release.</p> <p><b>Also refer to Crop Establishment Procedure (3) - cultivation before spraying.</b></p> <p>Spraying may be carried out before or after sowing or transplanting but 3 days before the crop emerges.</p>
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**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS  
AUTHORISED UNDER APPROPRIATE LEGISLATION**

**Paraquat 250 g/L plus 10 g/L amitrole – product group 3a sample label**

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING
Product Name:	[Trade name]
Constituent Statements:	ACTIVE CONSTITUENTS: 250 g/L PARAQUAT PRESENT AS PARAQUAT DICHLORIDE 10 g/L AMITROLE
Mode of Action:	GROUP 22   34 HERBICIDE
Statement of Claims:	For the control of certain grasses and broadleaf weeds as per Directions for Use table.
Net Contents:	5 L - 1000 L
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft, misting machines or handheld equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale application up to 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment. Enclosed cab applications <b>MUST</b> be used.</p> <p><b>DO NOT</b> add wetter unless spraying at high volume. Where [Trade name] is mixed with water at less than 400 mL/100L of water, add 60 mL 1000g/L NONIONIC SURFACTANT per 100L spray. <b>DO NOT</b> use alkaline or anionic wetting agents.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying but operations should commence within 7 days.</p> <p><b>SPRAY DRIFT RESTRAINTS</b></p>

Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)

**DO NOT** allow bystanders to come into contact with the spray cloud.

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

**Paraquat - buffer zones for boom sprayers**

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:

Other Limitations:

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE.  
THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.

Withholding Periods:

GRAZING:  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION.  
HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.



	HARVEST: NOT REQUIRED WHEN USED AS DIRECTED.
Trade Advice:	
General Directions:	<p>This product kills annual grasses and most annual broadleaf weeds in specific situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. It is immediately inactivated in the soil or heavy dew. The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds. Long-term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.</p> <p><b>MIXING</b> Add the required quantity of product to water in the spray tank and agitate to give even mixing. Agitate again if left standing.</p> <p><b>Clean Water</b> Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.</p> <p><b>APPLICATION</b> (i) Cereals and Broadacre Spraying Use only through a properly calibrated boom spray, which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used, it must be mounted so as to turn the soil back on to the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100L/ha may be used for seedlings or well grazed weeds up to 2cm high. For plant height 2-5cm use 150L/ha and up to 6-10cm use 200L/ha. Spray volumes may be as low as 50L/ha (30L/ha in WA) for weed growth below 5cm high.</p> <p>Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give medium spray droplet size category.</p> <p>(ii) High Volume Applications Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops. READ ALL SAFETY DIRECTIONS before commencing work.</p> <p>(iii) Wash spray equipment with clean water immediately after use. This product is highly corrosive to metals particularly galvanised iron and aluminum and should not be left for long periods in tanks or equipment made of these materials. READ ALL SAFETY DIRECTIONS before commencing work.</p>
Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b> Group 22, 34 HERBICIDE [Trade name] is a member of the bipyridyl and triazole group of herbicides. The product has the "photosynthesis at photosystem I inhibitor" and the inhibition of lycopene cyclase modes of action. For weed resistance management [Trade name] is a Group 22 and Group 34 Herbicide.</p> <p>Some naturally occurring weed biotypes resistant to the product and other Group 22 and Group 34 herbicides may exist through normal genetic variability in any weed population.</p>

	<p>The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by this product or other Group 22 and Group 34 herbicides.</p> <p>Since the occurrence of resistant weeds is difficult to detect prior to use, [Company] accepts no liability for any losses that may result from the failure of this product to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab.  <b>DO NOT</b> allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 2 days.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied on or near water which is used for human consumption</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK,</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF HONEY BEES AND OTHER INSECT POLLINATORS.</b>  Harmful to bees.  <b>DO NOT</b> apply to flowering weeds or crops at rates exceeding 700 mL/ha.  <b>DO NOT</b> allow spray drift to flowering weeds or crops in the vicinity of the treatment area. Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.</p> <p>This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Store in the closed, original container in a cool, well-ventilated area. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p> <p>Envirodrum - Micro Matic Valve (110L)  <b>DO NOT</b> tamper with the Micro Matic valve or the security seal. <b>DO NOT</b> contaminate the Envirodrum with water or any other foreign matter. After each use of the product please ensure that the Micro Matic coupler, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the Envirodrum have been used, please return the empty Envirodrum to the point of purchase.</p> <p>Other Containers  Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>

Safety Directions:	<p>Very dangerous, particularly the concentrate. DO NOT swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes, or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat, and skin. When handling, DO NOT touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds, and clothing. Protect eyes while using. If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing and footwear.</p>
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First Aid Instructions:	If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
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First Aid Warnings:	
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#### DIRECTIONS FOR USE

CROP USE OR SITUATION	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Aid to Cultivation to minimise cultivation and prepare a clean bed for sowing	Wild Oats at 2-5 leaf stage in Autumn/Winter	QLD, VIC, SA, TAS, NT only	450 mL – 600 mL	Apply by ground boom only.  Where cultivation follows spraying, it may commence one hour after spraying but should be completed within 7 days. Where heavy weed growth is present at spraying, a better seed bed will result if cultivation is delayed 3-5 days.
		NSW, ACT only	450 mL	<b>Pasture:</b> Remains of old pasture should be reduced by continuous grazing. Remove stock 3-5 days before spraying to allow fresh growth.
Wild Oat control in Spring Fallows	Wild Oats at 2-5 leaf stage	QLD, NSW, NT, ACT only	0.9 L	Apply by ground boom only.  Avoid spraying under hot, dry conditions. Best results will be obtained when spraying is carried out in the late evening.

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION**

**Paraquat 300 g/L plus 12 g/L amitrole – product group 3b sample label**

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING.		
Product Name:	[Product name]		
Constituent Statements:	ACTIVE CONSTITUENTS: 300 g/L PARAQUAT present as paraquat dichloride 12 g/L AMITROLE		
Mode of Action:	GROUP	22   34	HERBICIDE
Statement of Claims:	For the control of certain grasses and broadleaf weeds as per Directions for Use table.		
Net Contents:	5 L - 1000 L		
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft, misting machines or handheld equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale applications up to 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment. Enclosed cab applications <b>MUST</b> be used.</p> <p><b>DO NOT</b> add wetter unless spraying at high volume. Where [Trade name] is mixed with water at less than 400 mL/100L of water, add 60 mL 1000g/L NONIONIC SURFACTANT per 100L spray. <b>DO NOT</b> use alkaline or anionic wetting agents.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying but operations should commence within 7 days.</p> <p><b>SPRAY DRIFT RESTRAINTS</b></p>		

Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)

**DO NOT** allow bystanders to come into contact with the spray cloud.

**DO NOT** apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

Paraquat - buffer zones for boom sprayers						
Application rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:	This section contains file attachment.
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Other Limitations:	FOR USE ONLY AS AN AGRICULTURAL HERBICIDE. THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.
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Withholding Periods:	GRAZING: LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAYS AFTER APPLICATION. HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.
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	HARVEST NOT REQUIRED WHEN USED AS DIRECTED
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Trade Advice:	
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General Directions:	<p>This product kills annual grasses and most annual broadleaf weeds in specific situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. It is immediately inactivated in the soil or heavy dew. The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds. Long-term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.</p> <p><b>MIXING</b> Add the required quantity of product to water in the spray tank and agitate to give even mixing. Agitate again if left standing.</p> <p><b>Clean Water</b> Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.</p> <p><b>APPLICATION</b> i) Cereals and Broadacre Spraying Use only through a properly calibrated boom spray, which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used, it must be mounted so as to turn the soil back on to the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100L/ha may be used for seedlings or well grazed weeds up to 2cm high. For plant height 2-5cm use 150L/ha and up to 6-10cm use 200L/ha. Spray volumes may be as low as 50L/ha (30L/ha in WA) for weed growth below 5cm high.</p> <p>Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give MEDIUM spray droplet size category.</p> <p>ii) High Volume Applications Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops.</p> <p>iii) Wash spray equipment with clean water immediately after use. This product is highly corrosive to metals particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.</p>
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Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b> <b>GROUP 22, 34 HERBICIDE</b> [Trade name] is a member of the bipyridyl and triazole groups of herbicides. [Trade name] has the "photosynthesis at photosystem I inhibitor" and the inhibitor of carotenoid biosynthesis modes of action. For weed resistance management [Trade name] is a Group 22 and Group 34 Herbicide. Some naturally occurring weed biotypes resistant to [Trade name] and other Group 22 and Group 34 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by [Trade name] or other Group 22 and Group 34 herbicides.</p>
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	<p>Since the occurrence of resistant weeds is difficult to detect prior to use, [Company] accepts no responsibility for any losses that may result from the failure of [Trade name] to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab.  <b>DO NOT</b> allow entry to the treated area for scouting and irrigation until the spray has dried (day 0), and for ploughing, tilling, levelling, planting, and mechanical harvesting for 2 days.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied on or near water which is used for human consumption.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK,</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF HONEY BEES AND OTHER INSECT POLLINATORS.</b>  Harmful to bees.  <b>DO NOT</b> apply to flowering weeds or crops at rates exceeding 583 mL/ha.  <b>DO NOT</b> allow spray drift to flowering weeds or crops in the vicinity of the treatment area. Before spraying, notify beekeepers to move hives to a safe location with an untreated source of nectar and pollen, if there is potential for managed hives to be affected by the spray or spray drift.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND THE ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers. This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Store in the closed, original container in a cool, well-ventilated area. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p> <p>Envirodrum - Micro Matic Valve (110L)  <b>DO NOT</b> tamper with the Micro Matic valve or the security seal. <b>DO NOT</b> contaminate the Envirodrum with water or any other foreign matter. After each use of the product please ensure that the Micro Matic coupler, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the Envirodrum have been used, please return the empty Envirodrum to the point of purchase.</p> <p>Other containers  Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>
Safety Directions:	<p>Very dangerous, particularly the concentrate. <b>DO NOT</b> swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes, or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat, and skin. When handling, <b>DO NOT</b> touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds, and clothing. Protect eyes while using.</p>

	<p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing and footwear.</p>
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First Aid Instructions:	If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
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First Aid Warnings:	
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## DIRECTIONS FOR USE

CROP USE OR SITUATION	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Aid to Cultivation to minimise cultivation and prepare a clean bed for sowing	Wild Oats at 2-5 leaf stage in Autumn/Winter	QLD, VIC, SA, TAS, NT only	375 mL – 500 mL	Apply by ground boom only.  Where cultivation follows spraying, it may commence one hour after spraying but should be completed within 7 days. Where heavy weed growth is present at spraying, a better seed bed will result if cultivation is delayed 3-5 days.  <b>Pasture:</b> Remains of old pasture should be reduced by heavy grazing. Remove stock 3-5 days before spraying to allow to fresh growth.
		NSW, ACT only	375 mL	
Wild Oat control in Spring Fallows	Wild Oats at 2-5 leaf stage	QLD, NSW, NT, ACT only	750 mL	Apply by ground boom only.  Avoid spraying under hot, dry conditions. Best results will be obtained when spraying is carried out in the late evening.

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**



## Attachment E: Paraquat Review Technical Report

The Paraquat Review Technical Report is published on the APVMA website and is available at the following address <https://www.apvma.gov.au/chemicals-and-products/chemical-review/listing/paraquat/paraquat-review-technical-report>.

## Notice under section 34AB of the Agricultural and Veterinary Chemicals Code: diquat reconsideration – proposed decisions on reconsideration

- 15) I, Sheila Logan, Executive Director, Risk Assessment Capability, as the delegate of the Australian Pesticides and Veterinary Medicines Authority (APVMA) am proposing to make regulatory decisions in relation to the reconsideration of diquat active constituent approvals, product registrations, and label approvals being conducted under Part 2, Division 4 of the Agricultural and Veterinary Chemicals Code scheduled to the *Agricultural and Veterinary Chemicals Code Act 1994 (Agvet Code)*.
- 16) This notice is issued under section 34AB of the Agvet Code and relates to the reconsideration of the diquat active constituent approvals, product registrations and label approvals listed in Attachment A of this notice. This reconsideration extends to compliance with any requirement prescribed by the regulations for those approvals and registrations listed in Attachment A.
- 17) The Draft Statement of Reasons for the proposed decisions is included as Attachment B of this notice.
- 18) The information on which the reasons are based is set out in Attachment C of this notice.
- 19) Pursuant to section 34A(1) of the Agvet Code, I propose to:
  - a. vary the conditions of diquat active constituent approvals listed in Table 1 of Attachment A of this notice, in a manner set out in paragraphs 8) of the Draft Statement of Reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - b. vary the relevant particulars and conditions of the chemical product registrations listed in Table 1 of Attachment A, in a manner set out in paragraphs 17), and 29) of the Draft Statement of Reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - c. vary the relevant particulars of the label approvals listed in Table 1 of Attachment A in the manner set out in paragraph 40) of the Draft Statement of Reasons, and as reflected in the proposed labels in Attachment D of this notice, to allow affirmation under section 34(1) of the Agvet Code.
- 20) Further, pursuant to section 34AA(1) of the Agvet Code, I propose to:
  - a. cancel the chemical product registrations listed in Table 2 of Attachment A, as I am **not satisfied** that the relevant particulars or conditions of the registrations can be varied in such a way as to allow the registrations to be affirmed; and
  - b. cancel the label approvals listed in Table 2 of Attachment A, as I am **not satisfied** that the relevant particulars or conditions of the approvals can be varied in such a way as to allow the approvals to be affirmed.
- 21) The *Diquat Review Technical Report*, contained in Attachment E, summarises the technical and scientific assessments of the hazards and risks associated with diquat that have been completed by the APVMA's staff of relevantly qualified experts in chemistry, toxicology and worker health and safety, residues and trade, and the environment. I have had regard to their reports and advice, which are summarised in the *Diquat Review Technical Report*, and accept the findings as correct. The *Diquat Review Technical Report* is published to provide a record of the assessments that does not contain any of the confidential commercial information included in the APVMA's internal reports referred to in Attachment C. The *Diquat Review Technical Report* is incorporated into this notice to record the material findings of fact and reasons for my proposed decision. Where the Draft Statement of Reasons at Attachment B refers to the *Diquat Review Technical Report*, I intend to incorporate and adopt all relevant findings of fact and reasons within the *Diquat Review Technical Report* into this notice of my proposed decision.

## Written submissions are invited

22) I invite written submissions on the proposed course of action. All submissions will be considered by the APVMA prior to finalisation of this reconsideration.

23) Submissions or requests for further information can be sent to:

Chemical Review  
Australian Pesticides and Veterinary Medicines Authority  
GPO Box 3262  
Sydney NSW 2001

**Phone:** +61 2 6770 2400

**Email:** [chemicalreview@apvma.gov.au](mailto:chemicalreview@apvma.gov.au)

**Please note:** Submissions will be published on the APVMA website, unless you have asked for the submission to remain confidential (see [public submission coversheet](#)).

- Please lodge your submission with a public submission coversheet, which provides options for how your submission will be published.
- Note that all submissions received are subject to legislative requirements, including the *Freedom of Information Act 1982*, the *Privacy Act 1988* and the Agvet Code. In providing your submission to the APVMA, you agree to the APVMA publicly disclosing your submission in whole or summary form. The APVMA confirms that if your submission includes confidential commercial information or protected information as defined in the Agvet Code, such information will be subject to the relevant provisions of the Agvet Code including relevant limitations on use and disclosure by the APVMA.

24) The closing date for submissions is 29 October 2024.

Sheila Logan  
Executive Director, Risk Assessment Capability

With the delegated authority under sections 11, 32 and 44 of the *Agricultural and Veterinary Chemicals (Administration) Act 1992*.

Date: 30 July 2024

## Attachments:

**Note:** The below Attachments form part of this Notice.

**Attachment A:** Active constituent approval(s), product registration(s) and approved label(s) placed under reconsideration.

**Attachment B:** Draft Statement of Reasons

**Attachment C:** Information on which the reasons are based

**Attachment D:** Proposed sample labels for diquat chemical products

**Attachment E:** *Diquat Review Technical Report*

## Contact information

For any enquiries or further information about this matter, please contact:

Chemical Review  
Australian Pesticides and Veterinary Medicines Authority  
GPO Box 3262  
Sydney NSW 2001

**Phone:** +61 2 6770 2400

**Email:** [chemicalreview@apvma.gov.au](mailto:chemicalreview@apvma.gov.au)

## Attachment A: Active constituent approval(s), product registration(s) and label approval(s) placed under reconsideration

**Table 3: Active constituent approval(s), product registration(s) and associated label approval(s) placed under reconsideration that I am proposing to vary to allow affirmation**

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Diquat	Active	44219	Diquat Dibromide Manufacturing Concentrate	Syngenta Australia Pty Ltd	N/A
Diquat	Active	56655	Diquat Dibromide Manufacturing Concentrate	Halley International Enterprise (Australia) Pty Ltd	N/A
Diquat	Active	56808	Diquat Dibromide Manufacturing Concentrate	Conquest Crop Protection Pty Ltd	N/A
Diquat	Active	58221	Diquat Dibromide Manufacturing Concentrate	Sinon Australia Pty Limited	N/A
Diquat	Active	58386	Diquat Dibromide Manufacturing Concentrate	ADAMA Australia Pty Limited	N/A
Diquat	Active	59111	Diquat Dibromide Manufacturing Concentrate	Pacific Agriscience Pty Ltd	N/A
Diquat	Active	62650	Diquat Dibromide	Agrogill Chemicals Pty Ltd	N/A
Diquat	Active	64501	Diquat Dibromide	Sharda Worldwide Exports Pvt Ltd	N/A
Diquat	Active	67123	Diquat Dibromide	Titan Ag Pty Ltd	N/A
Diquat	Active	87160	Diquat Dibromide Manufacturing Concentrate	Agrogill Chemicals Pty Ltd	N/A
Diquat	Active	88034	Diquat Dibromide Manufacturing Concentrate	Foison Scitech Co., Limited	N/A
Diquat	Active	88714	Diquat Dibromide Manufacturing Concentrate	Foison Scitech Co., Limited	N/A
Diquat	Product	46534	Reglone Non-Residual Herbicide	Syngenta Australia Pty Ltd	46534/03, 46534/04, 46534/05, 46534/0502, 46534/0606, 46534/0799, 46534/1000, 46534/1004, 46534/54411, 46534/62108, 46534/105980
Diquat	Product	58411	Imtrade Diquat 200 Non-Residual Herbicide	Imtrade Australia Pty Ltd	58411/0605, 58411/51114, 58411/106301, 58411/141286, , 58411/141286A
Diquat	Product	58833	Conquest Sanction 200 Non-Residual Herbicide	Conquest Crop Protection Pty Ltd	58833/0704, 58833/54698
Diquat	Product	59332	Kenso Agcare Diquat 200 Herbicide	Kenso Corporation (M) Sdn. Bhd.	59332/0605, 59332/61317, 59332/116863

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Diquat	Product	60297	Dia-Kill 200 Herbicide	Sinon Australia Pty Limited	60297/0106, 60297/62335
Diquat	Product	63173	Accensi Diquat 200 Non-Residual Herbicide	Accensi Pty Ltd	63173/0908, 63173/59906
Diquat	Product	64177	Titan Diquat 200 Non-Residual Herbicide	Titan Ag Pty Ltd	64177/50573, 64177/136794
Diquat	Product	64311	Farmalinx Diquat 200 Herbicide	Farmalinx Pty Ltd	64311/0809, 64311/58258
Diquat	Product	64889	Genfarm Diquat 200 Non-Residual Herbicide	Nutrien Ag Solutions Limited	64889/0610, 64889/58177
Diquat	Product	65909	Rainbow Diquat 200 Non-Residual Herbicide	Shandong Rainbow International Co Ltd	65909/53424
Diquat	Product	66064	KDPC Desiquat Non-Residual Herbicide	KD Plant Care Pty Ltd	66064/52662
Diquat	Product	68432	Ozcrop Diquat 200 Herbicide	Oz Crop Pty Ltd	68432/58362
Diquat	Product	83557	Apparent Diquat 200 Herbicide	Titan Ag Pty Ltd	83557/108606, 83557/12506, 83557/138945
Diquat	Product	84436	4Farmers Diquat 200 Herbicide	4 Farmers Australia Pty Ltd	84436/110412
Diquat	Product	88533	Barmac Diquat 200 Herbicide	Amgrow Pty Ltd	88533/121617
Diquat	Product	88796	Foison Diquat 200SL Herbicide	Foison Scitech Co., Limited	88796/122345
Diquat	Product	89075	Agrevo Diquat 200SL Herbicide	Agrevo Australia Pty Ltd	89075/123546
Diquat	Product	90843	Slash 200 SL Herbicide	Asiatic Agricultural Industries Pte Ltd	90843/130192
Diquat	Product	92386	KELPIE DIQUAT 200SL Herbicide	SINOCHEM INTERNATIONAL AUSTRALIA PTY. LTD.	92386/135349
Paraquat, Diquat	Product	46516	Spray.Seed 250 Herbicide	Syngenta Australia Pty Ltd	46516/03, 46516/04, 46516/05, 46516/0307, 46516/0405, 46516/0901, 46516/0903, 46516/1004, 46516/1197, 46516/56456, 46516/60621, 46516/137913
Paraquat, Diquat	Product	58336	Halley Premier 250 Herbicide	Halley International Enterprise (Australia) Pty Ltd	58336/0504, 58336/0805
Paraquat, Diquat	Product	58412	Imtrade Spraykill 250 Herbicide	Imtrade Australia Pty Ltd	58412/104038
Paraquat, Diquat	Product	58470	Conquest Scorch 250 Herbicide	Conquest Crop Protection Pty Ltd	58470/0208, 58470/0304, 58470/0904, 58470/54699
Paraquat, Diquat	Product	58733	4Farmers Brown Out 250 Herbicide	4 Farmers Australia Pty Ltd	58733/0204, 58733/111359
Paraquat, Diquat	Product	59098	Spray-Plant 250 Herbicide	Sipcam Pacific Australia Pty Ltd	59098/0305, 59098/1208

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat, Diquat	Product	59333	Kenso Agcare Speedy 250 Herbicide	Kenso Corporation (M) Sdn. Bhd.	59333/0205, 59333/49612, 59333/53090, 59333/61930
Paraquat, Diquat	Product	59878	Genfarm Di-Par 250 Herbicide	Nutrien Ag Solutions Limited	59878/1209, 59878/60018, 59878/1005, 59878/107916
Paraquat, Diquat	Product	60287	Combik 250 Herbicide	Sinon Australia Pty Limited	60287/0906, 60287/59401, 60287/135167
Paraquat, Diquat	Product	61460	Alarm Herbicide	Sipcam Pacific Australia Pty Ltd	61460/1006
Paraquat, Diquat	Product	61860	Titan Eos Herbicide	Titan Ag Pty Ltd	61860/0607, 61860/0808
Paraquat, Diquat	Product	62495	Sanonda Paraquat/Diquat Herbicide	Sanonda (Australia) Pty Ltd	62495/0308
Paraquat, Diquat	Product	62631	Accensi Paraquat/Diquat 250 Herbicide	Accensi Pty Ltd	62631/0908, 62631/58694
Paraquat, Diquat	Product	63274	Uni-Spray 250 Herbicide	UPL Australia Pty Ltd	63274/0808
Paraquat, Diquat	Product	63565	Ozcrop Blowout Herbicide	Oz Crop Pty Ltd	63565/0209, 63565/101815
Paraquat, Diquat	Product	64325	Farmalinx Paradat Herbicide	Farmalinx Pty Ltd	64325/0809
Paraquat, Diquat	Product	64704	Fosterra Paraquat / Diquat Herbicide	Fosterra Pty Ltd	64704/49007
Paraquat, Diquat	Product	64802	Kwacknock 250 Herbicide	Grow Choice Pty Limited	64802/0310, 64802/60104
Paraquat, Diquat	Product	65295	Rainbow Diqu-Para 250 Herbicide	Shandong Rainbow International Co Ltd	65295/51629, 65295/61985
Paraquat, Diquat	Product	65708	Pacific Diquat/Paraquat 250 Herbicide	Pacific Agriscience Pty Ltd	65708/51671
Paraquat, Diquat	Product	66197	Unispray 250 Herbicide	UPL Australia Pty Ltd	66197/52973, 66197/104254
Paraquat, Diquat	Product	66327	AW Dismantle Herbicide	Agri West Pty Limited	66327/53393
Paraquat, Diquat	Product	66788	Agro-Essence Paraquat+Diquat 250 Herbicide	Agro-Alliance (Australia) Pty Ltd	66788/54406
Paraquat, Diquat	Product	67399	Easyfarm Paraquat-Diquat 250 Herbicide	Easyfarm Pty Ltd	67399/55961, 67399/59778
Paraquat, Diquat	Product	67627	Apparent Weedy Seedy 250 Herbicide	Titan Ag Pty Ltd	67627/56500, 67627/102353
Paraquat, Diquat	Product	67707	Smart Combination 250 Herbicide	Crop Smart Pty Ltd	67707/56672, 67707/60106, 67707/118522
Paraquat, Diquat	Product	67891	Spalding Exocet 250 Herbicide	DGL Environmental Pty Ltd	67891/57038

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Paraquat, Diquat	Product	68075	Ezycrop Paraquat-Diquat 250 Herbicide	Ezycrop Pty Ltd	68075/57436, 68075/59891
Paraquat, Diquat	Product	68202	Novaguard Paraquat-Diquat 250 Herbicide	Novaguard Pty Ltd	68202/57760
Paraquat, Diquat	Product	68280	Agro Burner 250 Herbicide	Agrogill Chemicals Pty Ltd	68280/57926
Paraquat, Diquat	Product	68479	Agmate Paraquat & Diquat 250 SL Herbicide	Agcare Pty Ltd	68479/58428
Paraquat, Diquat	Product	81790	Relyon Di-Par 250 SC Herbicide	Nutrien Ag Solutions Limited	81790/104058, 81790/111908, 81790/112881, 81790/126047
Paraquat, Diquat	Product	83169	Barmac Paraquat/Diquat 250 Herbicide	Amgrow Pty Ltd	83169/107673
Paraquat, Diquat	Product	83923	Accensi Paraquat / Diquat Prime 250 Herbicide	Accensi Pty Ltd	83923/109251
Paraquat, Diquat	Product	85112	Raystar Paraquat Diquat SL Herbicide	Raystar Cropprotection Pty Ltd	85112/112304
Paraquat, Diquat	Product	89832	Genfarm Di-Par 250 SC Herbicide	Nutrien Ag Solutions Limited	89832/126207
Paraquat, Diquat	Product	89918	Trio Paraquat Diquat 250 SL Herbicide	CTS Chemicals Pty Ltd	89918/126340, 89918/135188
Paraquat, Diquat	Product	90172	Cropsure Squadron 250 Herbicide	Cropsure Pty Ltd	90172/127840
Paraquat, Diquat	Product	91135	Agmerch Paraquat 135 & Diquat 115 Herbicide	Agmerch Pty Ltd	91135/131016

**Table 4: Active constituent approval(s), product registration(s) and associated label approval(s) placed under reconsideration that I am proposing to cancel**

Active Constituent(s)	Type	Approval or registration number	Name	Holder	Label approval number(s) associated with the product
Diquat	Product	81984	AQ200 Aquatic Herbicide	Aquatic Site Maintenance Pty Ltd	81984/107598, 81984/104562
Diquat	Product	82741	Water Treats Aquatic Weed Killer	Clearwater Lakes And Ponds Pty Ltd	82741/106581



## Attachment B: Draft Statement of Reasons

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## Material findings of fact and reasons for the proposed decisions

- 3) I have reconsidered diquat active constituent approvals, registrations of chemical products containing diquat and associated label approvals under Part 2, Division 4 of the Agricultural and Veterinary Chemicals Code scheduled to the *Agricultural and Veterinary Chemicals Code Act 1994* (Agvet Code) to determine whether:
- a) the active constituents meet the safety criteria (section 5A of the Agvet Code),
  - b) the chemical products meet the safety criteria (section 5A of the Agvet Code), the efficacy criteria (section 5B of the Agvet Code) and the trade criteria (section 5C of the Agvet Code),
  - c) the labels meet the labelling criteria (section 5D of the Agvet Code), and
  - d) the active constituents, chemical products and labels comply with the requirements prescribed by the *Agricultural and Veterinary Chemicals Code Regulations 1995* (Agvet Regulations).

## Active constituents

- 4) Section 34(1) of the Agvet Code provides that I must affirm the approval of an active constituent if, and only if, I am satisfied that the constituent:
- a) meets the safety criteria (section 5A), and
  - b) complies with any requirement prescribed by the Agvet Regulations.
- 5) Section 34(2) of the Agvet Code provides that subsection 34(1) applies only to the extent that the APVMA decides to reconsider matters covered by that subsection.
- 6) I have decided to reconsider all matters covered by subsection 34(1) in relation to the reconsideration of diquat active constituent approvals.

## Consideration of whether active constituents meet the safety criteria

- 7) Section 5A(1) of the Agvet Code provides that an active constituent meets the safety criteria if use of the active constituent, in accordance with any instructions approved or to be approved by the APVMA for the constituent or contained in an established standard:
- a) is not, or would not be, an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues (section 5A(1)(a)).
  - b) is not, or would not be, likely to have an effect that is harmful to human beings (section 5A(1)(b)).
  - c) is not, or would not be, likely to have an unintended effect that is harmful to animals, plants or things or to the environment (section 5A(1)(c)).
- 8) For the purposes of considering whether the active constituents meet the safety criteria as described in section 5A(1)(a) to (c) of the Agvet Code, I have had regard to the matters set out in section 5A(2)(a) of the Agvet Code as follows:
- a) Section 5A(2)(a)(i) of the Agvet Code – the toxicity of the constituent and its residues, including metabolites and degradation products, in relation to relevant organisms and ecosystems, including human beings.
    - I. I have considered assessment reports by the APVMA's relevant expert staff regarding the following information in respect of the toxicity of diquat and its residues as summarised in the *Diquat Review Technical Report*:

- Studies examining the absorption, metabolism and excretion of diquat in animal models and humans exposed through occupational, accidental or intentional exposure as described in the toxicology section of the *Diquat Review Technical Report*.
  - Studies on the toxicological effects of diquat, including the toxicological mode of action, acute and chronic toxicity, genotoxicity, reproductive and developmental toxicity in animal models and humans exposed through occupational, accidental or intentional exposure as described in the toxicology section of the *Diquat Review Technical Report*.
  - Studies on the potential for diquat to cause neurotoxicity as described in the toxicology section of the *Diquat Review Technical Report*.
  - Studies on the metabolism and degradation of diquat on treated crops and the residues and metabolites that are present in commodities following harvest as described in the residues and trade section of the *Diquat Review Technical Report*.
  - Studies on the environmental fate and behaviour of diquat in the environment, including degradation and environmental toxicity studies as detailed in the environmental safety section of *Diquat Review Technical Report*.
  - The APVMA's records of approval of diquat active constituents for use in agricultural chemical products.
- II. I am satisfied that the following health-based guidance values are applicable for diquat as described in the toxicology section of the *Diquat Review Technical Report*.
- The acceptable daily intake<sup>4</sup> (ADI) for diquat is proposed to be amended from 0.002 milligrams per kilogram body weight per day (mg/kg bw/day) to 0.006 mg per kilogram body weight per day based on a no observed adverse effect level (NOAEL) of 0.6 mg/kg bw/day in a two-year rat dietary study, based on lenticular cataract formation at the next higher dose. The ADI of 0.006 mg/kg bw/day incorporates a 100-fold uncertainty factor to account for inter- and intra-species variation in sensitivity.
  - The acute reference dose<sup>5</sup> (ARfD) for diquat remains at 0.8 mg of diquat per kg body weight based on a no observed adverse effect level of 75 mg per kilogram body weight in a rat acute neurotoxicity study. The ARfD incorporates a 100-fold uncertainty factor to account for inter- and intra-species variation in sensitivity.
- III. I am satisfied that an acceptable level of exposure to diquat for workers corresponds to a greater than 100-fold margin of exposure applied to a point of departure of 0.282 mg/kg bw/day as described in the worker health and safety section of the *Diquat Review Technical Report*.
- IV. I am satisfied that, due to little metabolism or degradation in plants or animals, *diquat cation* is the appropriate residue definition for both risk assessment and enforcement of compliance with Maximum Residue Limits in plant and animal commodities as described in the residues and trade section of the *Diquat Review Technical Report*.
- V. I agree with the APVMA's assessment of the fate and behaviour of diquat in the environment and the toxicity of diquat and its metabolites and residues to non-target species, which has identified Regulatory Acceptable Levels (RALs) of exposure to diquat as detailed in the environmental safety section of the *Diquat Review Technical Report*.

<sup>4</sup> ADI - Acceptable Daily Intake (for humans): a level of intake of a chemical (expressed mg/kg bw/day; milligrams per kilogram of body weight per day) that can be ingested daily over an entire lifetime without any appreciable risk to health

<sup>5</sup> ARfD - Acute Reference Dose (for humans): the amount of a substance in food or drinking-water, (expressed as mg/kg of body weight), that can be ingested or absorbed over 24 hours or less, without appreciable health risk.

- VI. I am satisfied that exposure of non-target species to diquat below the RALs listed in Table 5 below is not expected to have an unintended effect that is harmful to animals, plants, things or the environment.

**Table 5: Regulatory Acceptable Levels for exposure of non-target species to diquat**

Group	Exposure type	RAL
Mammals	Acute	12 mg/kg bw
	Chronic	4.0 mg/kg bw/d
Birds	Acute	7.0 mg/kg bw
	Chronic	3.2 mg/kg bw/d
Aquatic animals	Acute	47 µg/L
Aquatic primary producers	Chronic	2.1 µg/L
Sediment dwellers	Chronic	11 mg/kg ds
Adult bees	Acute contact	42 µg/bee
	Acute oral	8.8 µg/bee
Foliar arthropods	Contact	4.1 g/ha
Ground arthropods	Contact	1000 g/ha
Soil macro-organisms	Acute	9.4 mg/kg ds
	Chronic	9.4 mg/kg ds
Soil micro-organisms	Chronic	500 mg/kg ds
Terrestrial plants	Post-emergent	12 g/ha

- b) Section 5A(2)(a)(ii) of the Agvet Code – the method by which the constituent is, or is proposed to be, manufactured.
- I. The APVMA's chemistry assessment, as detailed in the *Diquat Review Technical Report*, considered information submitted and assessed in the original applications for active constituent approval regarding the method of manufacture for each approved diquat active constituent.
  - II. I agree with the APVMA's chemistry assessment recommendation, and I remain satisfied in respect to the manufacturing method for approved diquat dibromide active constituents based on the information provided and the assessments conducted at the time of approval.
- c) Section 5A(2)(a)(iii) of the Agvet Code – the extent to which the constituent will contain impurities.
- I. The APVMA's chemistry assessment has considered the following information in relation to the extent to which the constituent will contain impurities, as described in the chemistry section of the *Diquat Review Technical Report*:
    - the specifications for diquat active constituents in *Agricultural and Veterinary Chemicals Code (Agricultural Active Constituents) Standards 2022* (Active Constituents Standards 2022) and the Food and Agriculture Organization of the United Nations (FAO) Specifications for Plant Protection Products (FAO Specification for Diquat)
    - information regarding the form and composition of approved diquat active constituents, including the potential for impurities of toxicological concern, submitted in applications for approval of diquat active constituents as described in the chemistry section of the *Diquat Review Technical Report*

- information submitted in the original applications for active constituent approval including Declarations of Composition and Certificates of Analysis
  - information demonstrating that ethylene dibromide and 2,2'dipyridyl are components used in the manufacture of diquat dibromide and may remain as impurities in the final manufacturing concentrate
  - information demonstrating that 2,2':6', 2"-terpyridine may be present as a contaminant in 2,2'bipyridyl used as a component to manufacture diquat dibromide and may remain as an impurity in the final manufacturing concentrate
  - information demonstrating that ethylene dibromide and 2,2'dipyridyl and terpyridines are impurities of toxicological concern.
- II. I agree with the APVMA's chemistry assessment as described in the *Diquat Review Technical Report* which concluded that:
- The Active Constituents Standards 2022 specifies that diquat dibromide manufacturing concentrate must have a purity of 375 – 485 g/kg of diquat dibromide (200 – 260 g/kg of diquat ion) and a minimum purity of 940 g/kg diquat dibromide on a dry weight basis
  - The Active Constituent Standards 2022 specifies that diquat dibromide manufacturing concentrate must not exceed maximum levels for two toxicologically significant impurities; 10 mg/kg for ethylene dibromide and 2.5 g/kg for free 2,2'-bipyridyl (0.25% w/w maximum of the diquat dibromide content)
  - The FAO Specification for Diquat dibromide manufacturing concentrate specifies a purity of not less than 377 g/kg (467 g/L) of diquat dibromide and maximum levels of three toxicologically significant impurities; 10 mg/kg for ethylene dibromide, 0.75 g/kg for free 2,2'-bipyridyl and 1 mg/kg for total terpyridines.
- III. I agree with the APVMA's chemistry assessment, as described in the *Diquat Review Technical Report* which concluded that:
- formation of additional impurities of toxicological concern during storage of the manufacturing concentrate or in the formulated chemical product is not expected to occur
  - the Food and Agriculture Organization of the United Nations (FAO) Specifications for Plant Protection Products (FAO Specification for Diquat) represents consensus among the international regulatory authorities that are members of the FAO regarding the acceptable composition and purity, and maximum levels of impurities of toxicological concern of diquat dibromide
  - there is the potential for the presence or formation of impurities of toxicological concern during the synthesis of diquat dibromide manufacturing concentrate, as described above and in the *Diquat Review Technical Report*
  - due to the toxicity of these impurities, the APVMA should adopt the FAO specification for diquat dibromide manufacturing concentrates as the applicable parameters to be met in the next amendment of the Active Constituents Standard
  - active constituents (manufacturing concentrates) with the approval numbers 44219, 87160, 88714 will contain impurities below the limit specified in the FAO Specification for Diquat, as detailed in the *Diquat Review Technical Report*
  - the available information for the diquat dibromide active constituents 56655, 56808, 58221, 58386, 59111, 62650, 64501, 67123, 88034 is not sufficient to determine the extent that the

active constituent will contain impurities of toxicological concern as detailed in the *Diquat Review Technical Report*.

- IV. I am **not satisfied** that the diquat active constituent approvals 56655, 56808, 58221, 58386, 59111, 62650, 64501, 67123, 88034 meet the safety criteria due to the potential for the presence of impurities of toxicological concern as detailed in the *Diquat Review Technical Report*.
- d) Section 5A(2)(a)(iv) of the Agvet Code – whether an analysis of the chemical composition of the constituent has been carried out and, if so, the results of the analysis.
- I. The APVMA's chemistry assessment, as detailed in the *Diquat Review Technical Report*, has considered the batch analyses that were submitted and assessed by the APVMA as part of the original approval for each diquat active constituent.
- II. The APVMA's assessment of the batch analyses for active constituents 44219, 87160 and 88714 concluded that the chemical composition of those diquat active constituents is compliant with the FAO Specifications for Diquat, as detailed in the chemistry section of the *Diquat Review Technical Report*. I am satisfied that the chemical composition of these active constituents is acceptable.
- III. The APVMA's assessment of the batch analysis information available for the active constituents 56655, 56808, 58221, 58386, 59111, 62650, 64501, 67123, 88034 concluded that the information did not provide adequate details for the APVMA to determine whether the active constituent meets the FAO Specifications for Diquat.
- IV. I am **not satisfied** that the diquat active constituent approvals 56655, 56808, 58221, 58386, 59111, 62650, 64501, 67123, 88034 meet the safety criteria due to the lack of information related to the chemical composition of the constituent, in particular in relation to the impurities of toxicological concern identified in paragraph 6)c)
- e) Section 5A(2)(a)(v) of the Agvet Code – any conditions to which its approval is, or would be, subject.
- I. I have had regard to the conditions prescribed by the Agvet Regulations in accordance with section 23(1)(a) of the Agvet Code.
- Regulation 17C(1) of the Agvet Regulations prescribes conditions to which the approval of an active constituent for a proposed or existing chemical product is subject.
  - The *Agricultural and Veterinary Chemicals Code (Conditions of Approval or Registration) Order 2021* (Conditions of Approval or Registration Order) prescribes conditions to which the approval of an active constituent for a proposed or existing chemical product is subject.
- II. I have also had regard to the conditions the APVMA has imposed on the approval of diquat active constituents in accordance with section 23(1)(b) of the Agvet Code through the condition referred to as the *Agricultural Active Constituents Quality Assurance Requirements* which is reproduced below.
- “Agricultural Active Constituents must meet Quality Assurance Requirements
    - A person must not Supply the Active Constituent, or cause it to be supplied, unless the Active Constituent:
      - complies with the APVMA Standard for the Active Constituent; and
      - was manufactured at a site of manufacture listed in the Record of Approved Active Constituents.

- A person must at the time of Supply of a Batch of the Active Constituent to another person also supply details of the Batch Number of the Active Constituent to the person to whom the active constituent was supplied.
  - For the purposes of these conditions a constituent complies with the APVMA Standard if the constituent, when measured using a validated analytical method:
    - does not contain less than the minimum purity and/or content of the constituent as set out in the APVMA Standard; and
    - does not contain more than the maximum level of any impurity as set out in the APVMA Standard
  - Definitions and Interpretation – in these conditions the following words have the following meanings:
    - ‘APVMA Standard’ means the standard determined by the APVMA to which a constituent must comply and which is published on the APVMA website;
    - ‘Batch’ means a defined quantity of material produced in a single series of operations;
    - ‘Batch Number’ means that a distinctive combination of numbers and/or letters that specifically identifies a Batch and from which the production history can be determined;
    - ‘Supply’ has the same meaning as given to it in Section 3 of the Agvet Codes and includes the doing of those things through, or pursuant to an arrangement with another person.”
- III. I am **not satisfied** that the current condition referred to as the ‘Agricultural Active Constituent Quality Assurance Requirements’ remains appropriate, noting that items 1 and 3 of the condition above are redundant with the *Agricultural and Veterinary Chemicals Code (Agricultural Active Constituents) Standards 2022* and Regulation 17C(1) of the Agvet Regulations.
- IV. I am satisfied that the conditions imposed by the Conditions of Approval or Registration Order in conjunction with the conditions prescribed by the Agvet Regulations, as referenced above, remain appropriate and are acceptable.
- f) Section 5A(2)(a)(vi) of the Agvet Code – any relevant particulars that are, or would be, entered in the Record for the constituent.
- I. The relevant particulars recorded for each approved diquat active constituent have been reviewed. Sections 3 and 19(c) of the Agvet Code provide that the relevant particulars are the distinguishing number, any instructions for use and any other particulars required by section 19(c) to be entered in the Record. Section 19(c) refers also to any other particulars prescribed by the regulations. Regulation 15(1) prescribes the following particulars for the purposes of section 19(c) of the Agvet Code:
- if a name is given to the active constituent by the International Union of Pure and Applied Chemistry—that name
  - if no name is given to the active constituent by the International Union of Pure and Applied Chemistry—the name given to the active constituent in the standard prescribed in respect of the active constituent for the purposes of paragraph 87(1)(a) of the Code
  - the name of the active constituent
  - the composition and purity of the active constituent
  - the name of the manufacturer of the active constituent

- the address of each site at which the active constituent is manufactured by the manufacturer
  - identifying information for the holder of the approval of the active constituent
  - the date of entry of these particulars in the Record of Approved Active Constituents
  - identifying information for any nominated agent for the approval.
- II. I have had regard to the APVMA staff's assessment of the information entered in the Record and other relevant particulars, and the information submitted in support of the original applications for diquat active constituent approval.
- III. I am satisfied that the relevant particulars, including instructions for use, entered into the Record for diquat active constituent approvals remains correct and acceptable.
- g) Section 5A(2)(a)(via) of the Agvet Code – whether the constituent conforms, or would conform, to any standard made for the constituent under section 6E to the extent that the standard relates to matters covered by subsection 5A(1).
- I. The Agricultural Active Constituents Standards 2022 were made under section 6E(1) of the Agvet Code for active constituents used in agricultural chemical products, including diquat.
- II. The APVMA's chemistry assessment, as detailed in the *Diquat Review Technical Report*, concluded that all diquat active constituents conform to the Agricultural Active Constituents Standard 2022.
- III. I accept the recommendation from the APVMA's chemistry assessment in the *Diquat Review Technical Report* and I am satisfied that all diquat active constituent approvals conform to the Agricultural Active Constituents Standards 2022.
- IV. The APVMA's chemistry assessment, as detailed in the *Diquat Review Technical Report*, also concluded that the Agricultural Active Constituents Standard 2022 should be amended to include specifications for additional impurities of toxicological concern that have been identified as relevant by the FAO. The FAO Specification for diquat dibromide manufacturing concentrate is not less than 377 g/kg (467 g/L) of diquat dibromide and maximum levels of three toxicologically significant impurities; 10 mg/kg for ethylene dibromide, 0.75 g/kg for free 2,2'-bipyridyl and 1 mg/kg for total terpyridines.
- V. I note the recommendation of the APVMA's chemistry assessment that active constituents with the approval numbers 44219, 87160, and 88174 would conform to the proposed amended Agricultural Active Constituents Standard.
- VI. I note that the APVMA's chemistry assessment was not able to conclude whether the active constituents 56655, 56808, 58221, 58386, 59111, 62650, 64501, 67123 and 88034 would conform with the proposed amendments to the Agricultural Active Constituents Standard due to a lack of information.
- h) Section 5A(2)(a)(vii) of the Agvet Code - any matters prescribed by the regulations.
- I. Regulation 8AA of the Agvet Code Regulations prescribes the method of analysis (if any) of the chemical composition of the active constituent concerned.
- II. I have had regard to the APVMA's assessment of the information about the method of analysis of the chemical composition of the active constituent submitted as part of the original applications for approval and found to be acceptable by the APVMA at that time, as described in the chemistry section of the *Diquat Review Technical Report*.



- I accept the APVMA's previous findings regarding the method of analysis and note that there has not been any new information provided that would alter my satisfaction regarding the method of analysis of the chemical composition of the active constituents.
  - I am satisfied of the method of analysis of the chemical composition of each approved diquat active constituent listed in Attachment A.
- i) Section 5A(2)(b) of the Agvet Code – such other matters as the APVMA thinks relevant.
- l. There are no other matters that I think relevant regarding whether diquat active constituents meet the safety criteria.
- 9) Having had regard to the matters described above, I am **not satisfied** that the diquat active constituent approvals listed in Attachment A meet the safety criteria for the following reasons:
- a) for the following active constituent approvals, 56655, 56808, 58221, 58386, 59111, 62650, 64501, 67123 and 88034, I am **not satisfied** that the information considered with respect to the extent to which the constituent will contain impurities (section 5A(2)(a)(iii)), see paragraph 6)c) above; or the analyses conducted on the chemical composition of the active constituent (section 5A(2)(a)(iv), see paragraph 6)d) above, demonstrates that the limits for impurities of toxicological concern identified in the *Diquat Review Technical Report* (10 mg/kg for ethylene dibromide, 0.75 g/kg for free 2,2'-bipyridyl and 1 mg/kg for total terpyridines) will not be exceeded. Active constituents containing these impurities may be an undue hazard to people exposed to the constituent during its handling or people using anything containing its residues, or likely to have an effect that is harmful to human beings, or to have an unintended effect that is harmful to animals, plants or things or to the environment.
- b) for all diquat dibromide active constituent approvals, I am **not satisfied** that the condition of approval referred to as the 'Agricultural Active Constituent Quality Assurance Requirements' remains appropriate as it substantially duplicates conditions imposed by the Agvet Regulations and the requirements of the Agricultural Active Constituent Standard 2022.

### Consideration of whether active constituent approvals can be varied to meet the safety criteria

- 10) I have considered whether diquat active constituent approvals can be varied in such a way as to meet the safety criteria set out in Section 5A(1) for the purposes of section 34A(1) of the Agvet Code as follows:
- a) I am satisfied that concerns identified in paragraphs 6)b), 6)c), 6)d) and 8)f) above regarding the extent to which the constituent contains impurities and analysis of the constituent and relevant particulars that are entered in the Record can be addressed by varying the conditions of active constituent approval to include an additional condition of approval
- Condition of approval*
- On or before the date 1 year after the publication of the section 34AC notice of the diquat final regulatory decision, you are required to provide to the APVMA the results of 5 batch analyses and an amended Declaration of Composition demonstrating compliance of the active constituent [insert approval number] with the FAO Specification for Diquat.*
- b) to address concerns identified in paragraph 6)e)III which relate to my consideration of the conditions of approval of diquat active constituents, as required in section 5A(2)(a)(v) of the Agvet Code, I propose to vary the condition referred to as the 'Agricultural Active Constituent Quality Assurance Requirements' to remove items that are redundant with requirements set out in legislation to read
- Condition of approval: Agricultural Active Constituent Quality Assurance Requirements*
- Upon supply of any quantity of active constituent a Batch Number must also be provided to the recipient.*

Definitions and Interpretation

*'Batch' means a defined quantity of active constituent or chemical product (as the case may be) produced in a single series of operations;*

*'Batch Number' means a distinctive combination of numbers and/or letters that specifically identifies a Batch and from which the production history can be determined.*

- 11) For the purposes of section 34(A)(1)(b), I am satisfied that the relevant particulars or conditions of the diquat active constituent approvals listed in Table 1 in Attachment A of this notice can be varied in the ways set out in paragraph 8) above, to allow the approval of those active constituents to be affirmed.

**Consideration of whether active constituents comply with any requirement prescribed by the regulations**

- 12) Section 34(1)(d) of the Agvet Code provides that the APVMA must affirm an active constituent approval only if I am satisfied that the constituent complies with any requirements prescribed by the regulations.
- a) There are no other requirements prescribed by the Agvet Regulations for diquat active constituents that have not already been considered above.

**Chemical Products**

- 13) Section 34(1)(b) and (d) of the Agvet Code provides that the APVMA must affirm the registration for a chemical product if, and only if, it is satisfied that the product:
- a) meets the safety criteria (section 5A)
- b) meets the efficacy criteria (section 5B)
- c) meets the trade criteria (section 5C) and
- d) complies with any requirement prescribed by the regulations.
- 14) Section 34(2) of the Agvet Code provides that subsection 34(1) applies only to the extent that the APVMA decides to reconsider matters covered by the subsection.
- 15) I have decided to reconsider all matters covered by paragraph 34(1)(b) in relation to the reconsideration of diquat chemical product registrations.

**Consideration of whether registered chemical products meet the safety criteria**

- 16) Section 5A(1) of the Agvet Code provides that a chemical product meets the safety criteria if use of the product, in accordance with any instructions approved, or to be approved, by the APVMA for the product or contained in an established standard:
- a) is not, or would not be, an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues (section 5A(1)(a))
- b) is not, or would not be, likely to have an effect that is harmful to human beings (section 5A(1)(b))
- c) is not, or would not be, likely to have an unintended effect that is harmful to animals, plants or things or to the environment (section 5A(1)(c)).
- 17) For the purposes of being satisfied that diquat chemical products meet the safety criteria, I have had regard to the criteria set out in section 5A(3)(a) of the Agvet Code.

- a) Section 5A(3)(a)(i) – the toxicity of the product and its residues, including metabolites and degradation products, in relation to relevant organisms and ecosystems, including human beings.
- I. I have considered assessment reports by the APVMA's relevant expert staff regarding the following information in respect of the toxicity of diquat chemical products and their residues as summarised in the *Diquat Review Technical Report*:
- information on the toxicity of diquat and its residues, as set out in paragraph 6)a) above, and in the *Diquat Review Technical Report* and the references therein, including the diquat health based guidance values and regulatory acceptable levels for exposure of non-target species
  - information on the presence and formation of impurities of toxicological concern during manufacture and storage of diquat chemical products as described in the *Diquat Review Technical Report*
  - the APVMA's records of registration of diquat agricultural chemical products
  - the impact of any excipients in the chemical products on the toxicity of the diquat chemical products to relevant organisms and ecosystems, including human beings as detailed in the *Diquat Review Technical Report*
  - environmental toxicity studies on the effects of formulated diquat products on non-target species, as detailed in the *Diquat Review Technical Report*
  - information about the combined toxicity of paraquat and diquat in relation to regulatory acceptable levels for exposure of non-target species and environmental effects of products that contain both active constituents as detailed in the *Diquat Review Technical Report*.
- II. The APVMA's chemistry assessment as detailed in the *Diquat Review Technical Report* concluded that there is sufficient information on the toxicity of the impurities of toxicological concern; ethylene dibromide, 2,2'bipyridyl and total terpyridines, and the potential sources of these impurities in both diquat manufacturing concentrate and formulated products to determine that formulated diquat chemical products are not expected to contain unacceptable levels of impurities of toxicological concern.
- III. The APVMA has determined that an ADI for diquat should be established at 0.006 mg/kg bw/day and the ARfD of 0.8 mg bw/day should be retained, as described in paragraph 8)a)II and the *Diquat Review Technical Report*.
- IV. The APVMA's worker exposure assessment described in the *Diquat Review Technical Report* has determined that acceptable levels of occupational exposure to diquat can be defined by applying a greater than 100-fold margin of exposure to a point of departure of 0.282 mg/kg bw/day.
- V. I am satisfied that exposure of non-target organisms to diquat below the regulatory acceptable levels as set out in paragraph 8)a)VI (above) and the *Diquat Review Technical Report* is not likely to have an unintended effect that is harmful to animals, plants or things or to the environment.
- VI. I am satisfied that there is sufficient information to assess the impact of formulation excipients and, where relevant, the co-formulated active constituent paraquat, on the toxicity of diquat chemical products and their residues in relation to relevant organisms and ecosystems, including human beings.

- VII. I am therefore satisfied that the toxicity of diquat chemical products and their residues, including metabolites and degradation products, is sufficiently defined to allow assessment as to whether diquat chemical products meet the safety criteria.
- b) Section 5A(3)(a)(ii) of the Agvet Code - the relevant poison classification of the product under the law in force in this jurisdiction.
- I. The relevant poison classification of the product under the law in force in this jurisdiction is stipulated by *Therapeutic Goods (Poisons Standard—February 2024) Instrument 2024*. This instrument is also commonly referred to as the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). Diquat is currently included in Schedule 7 of the SUSMP except when included in Schedule 6. Diquat is included in Schedule 6 in preparations containing 20% or less of diquat.
- II. No changes to the current poisons scheduling is required.
- III. I have had regard to the APVMA's chemistry and toxicology assessments with respect to the information recorded in the Register for each diquat chemical product and to information submitted in support of the original applications for registration, including the product formulation information as described in the *Diquat Review Technical Report*. I am satisfied that chemical products containing diquat meet the requirements prescribed by the SUSMP.
- c) Section 5A(3)(a)(iii) of the Agvet Code – how the product is formulated.
- I. I accept the APVMA's chemistry assessment of the registration records for diquat chemical products in having regard to how registered chemical products containing diquat are formulated as described in the *Diquat Review Technical Report*.
- Registered chemical products containing diquat are formulated as:
    - soluble concentrates (SL) containing 200 g/L of diquat
    - soluble concentrates containing 135 g/L of paraquat co-formulated with 115 g/L of diquat as an additional active constituent.
- II. I am satisfied that the formulation of chemical products containing diquat remains acceptable with respect to the safety criteria.
- d) Section 5A(3)(a)(iv) of the Agvet Code - the composition and form of the constituents of the product.
- I. I accept the APVMA's chemistry assessment of the registration records for diquat chemical products in respect of the composition and form of the constituents of the chemical products containing diquat, including the Declaration of Composition for the active constituent, certificates of analysis for the formulated products and the manufacturer's specification of other constituents, as described in the *Diquat Review Technical Report*.
- II. I am satisfied that the composition and form of the constituents of the registered diquat products remain acceptable with respect to the safety criteria for chemical products.
- e) Section 5A(3)(a)(v) of the Agvet Code - any conditions to which a product's registration is, or would be, subject.
- I. I have considered the registration records for diquat chemical products and the relevant provisions in the Agvet Code and Agvet Regulations in considering the conditions to which diquat chemical products are or would be subject.

- Chemical product registrations are currently subject to the conditions prescribed by items 1, 2, 3, 4, 5, 6, and 7 of the table in regulation 17C(2) of the Agvet Regulations.
  - Note: Regulation 17C(3)) specifies that Items 3 and 4 of regulation 17C(2) do not apply to any agricultural chemical product as these are prescribed under regulation 59(1)(a) for the purposes of section 120A of the Agvet Code.
- II. Section 23(1)(a) of the Agvet Code, in conjunction with Regulation 18 of the Agvet Regulations also prescribes conditions for registration of chemical products relating to containers for chemical products.
- III. Registered chemical products are also subject to the conditions of registration imposed by the APVMA in the *Agricultural and Veterinary Chemicals Code (Conditions of Approval or Registration) Order 2021*, in accordance with section 23(1)(a) of the Agvet Code.
- IV. I am satisfied that the conditions detailed above are appropriate for the registered chemical products containing diquat.
- V. Agricultural chemical product registrations are subject to the additional condition imposed by the APVMA under section 23(1)(b) of the Agvet Code referred to as the 'Agricultural Products Active Constituent Quality Assurance Requirements' which is reproduced below:
- "Agricultural Products must meet the Agricultural Products Active Constituent Quality Assurance Requirements
    - Manufacture of active constituent - the registrant must not supply the chemical product, or cause it to be supplied, unless the active constituent contained in the chemical product:
      - complies with the APVMA Standard for that active constituent; and
      - was manufactured at a site of manufacture listed in the Record of approved active constituents.
    - Analysis results - the registrant must not supply the chemical product or cause it to be supplied unless the registrant has in its possession prior to the supply of each batch of the chemical product, batch analysis results that show:
      - the active constituent contained in the chemical product complied with the APVMA Standard for that active constituent;
      - if there is an APVMA Standard for a constituent in the chemical product that is not an active constituent, the constituent complied with the APVMA Standard for that constituent; and
      - the batch number of the active constituent contained in the chemical product.
    - Records - the registrant must, at or prior to the supply of a batch of the chemical product by the registrant or by another person on behalf of the registrant, make or have in its possession, a record that contains the following information:
      - The name of the chemical product.
      - The APVMA product number of the chemical product.
      - If the chemical product was imported into Australia by another person on behalf of, or pursuant to an arrangement with the registrant, the name and address of that person.

- If the chemical product was manufactured in Australia by another person on behalf of, or pursuant to an arrangement with the registrant, the name and address of that person.
- The date of importation into, or manufacture in, Australia as the case may be.
- The batch number of the chemical product from which the supply was made.
- The quantity of the chemical product that constitutes the batch
- The batch number, and name and address of the manufacturer of the active constituent contained in the chemical product
- The registrant must produce, or cause to be produced, to the APVMA any batch analysis results or record within 10 working days of the request having been made by the APVMA, or other such period as determined by the APVMA.
- The registrant must keep, or cause to be kept, any batch analysis results or record for 2 years after any batch analysis results or record is made.
- Possession of batch analysis results and records - for the purposes of these conditions, batch analysis results or records are in the possession of the registrant if batch analysis results or records are:
  - in the possession of the registrant; or
  - in the possession of another person pursuant to an arrangement with the registrant.
- Compliance with the Standard - for the purposes of these conditions, a constituent complies with the APVMA Standard if the constituent, when measured using a validated analytical method does not contain:
  - less than the minimum purity and/or content of the constituent as set out in the APVMA Standard for the Constituent
  - more than the maximum level of any impurity as set out in the APVMA Standard.
- Definitions and Interpretation - in these conditions the following words have the following meanings:
  - 'APVMA Standard' means the standard determined by the APVMA to which a constituent contained in chemical products must comply and which is published on the APVMA website.
  - 'Batch' means a defined quantity of material produced in a single series of operations.
  - 'Batch number' means that a distinctive combination of numbers and/or letters that specifically identifies a batch and from which the production history can be determined.
  - 'Batch analysis results' means the results of analysis from each batch of the constituent that include:
    1. the name of the manufacturer and the manufacturing site address
    2. the date of the analysis
    3. the batch number and date of manufacture of the batch

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4. the analysis result(s) for the constituent purity and/or content and/or isomer ratio and/or the specified impurities as per the APVMA Standard for the constituent
  5. full details and validation data for the analytical method(s) used for the determination of the constituent purity (linearity and precision) and/or the content and/or the isomer ratio and/or the specified impurities (linearity, precision, accuracy and limit of quantitation if relevant).
- If analytical methods and validation data have been previously provided to the APVMA, a reference to that submission will suffice.
  - 'Record' means a document in written or electronic form that contains the particulars set out in paragraph (3) and which is readily accessible for the purposes of Part 9 of the Agvet Code (Enforcement).
  - 'Supply' has the same meaning as given to it in section 3 of the Agvet Code and includes the doing of those things through, or pursuant to an arrangement with, another person."
- VI. I am **not satisfied** that the current condition referred to as 'Agricultural Products Quality Assurance Requirements', remains appropriate, as the condition is substantially redundant with requirements imposed by the Agvet Code or the Agvet Regulations.
- f) Section 5A(3)(a)(vi) of the Agvet Code – any relevant particulars that are, or would be, entered in the Register for the product:
- I. The relevant particulars required to be entered in the Register for a chemical product are set out by section 20(1)(c) of the Agvet Code and prescribed by Regulation 16 of the Agvet Regulations as:
    - the distinguishing number
    - any instructions for the use of the product
    - the distinguishing name of the chemical product
    - the constituents of the chemical product
    - the concentration of each constituent of the chemical product
    - if possible, the composition and purity of each active constituent of the chemical product
    - the formulation type for the chemical product
    - the net contents of the chemical product
    - identifying information for the holder of the registration for the chemical product
    - the name of each manufacturer of the chemical product
    - the address of each site at which the chemical product is manufactured by the manufacturer
    - the date of entry of these particulars in the Register of Chemical Products
    - identifying information for any nominated agent for the registration.
  - II. I have had regard to the APVMA's assessments of the relevant particulars entered in the Register for each of the products listed in Tables 1 and 2 of Attachment A and have also considered the conclusions of the chemistry, environment, human health, and residues and trade risk assessments described in the *Diquat Review Technical Report*.

- III. I am satisfied that all relevant particulars that are entered in the Register for diquat chemical products, except for the instructions for use of the product mentioned in paragraph 15)f)IV below, remain acceptable.
- IV. I am **not satisfied** that the use of diquat chemical products according to the instructions for use entered in the Register meets the safety criteria in the following situations for the reasons indicated and discussed in the *Diquat Review Technical Report*.
- Instructions for use of diquat applied by ground boom in small scale agriculture, i.e. row crops, vegetables and market gardens, are acceptable up to a maximum application of 6 ha/day at the maximum label rate of 800 g ac/ha (4.8 kg of diquat per operator per day) when the operator uses the following personal protective equipment: open cab, single layer of clothing, gloves, PF10 respirator, and face shield or goggles when mixing or loading.
  - Instructions for use of diquat applied by ground boom in broad scale agriculture at rates above 317.7 kg of diquat per operator per day exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system).
  - Instructions for use of diquat applied by manually pressurised hand wand at rates exceeding 6.2 kg of diquat per operator per day, or by mechanically pressurised hand wand at rates above 1.5 kg of diquat per operator per day exceeds acceptable occupational exposure levels when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading.
  - Instructions for use of chemical products containing both diquat and paraquat applied by ground boom in broad scale agriculture at rates above 337 kg of paraquat per operator per day exceeds acceptable occupational exposure levels, when the operator uses the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system).
  - Instructions for use of chemical products containing both diquat and paraquat applied by manually pressurised hand wand at rates above 4.5 kg of combined active constituent per operator per day, or by mechanically pressurised hand wand at rates above 2.3 kg of combined active constituent per operator per day exceeds acceptable occupational exposure levels, when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading.
  - Instructions for use of chemical products in diquat in aquatic areas will exceed regulatory acceptable levels for non-target aquatic species as described in the *Diquat Review Technical Report*.
  - Instructions for use of diquat in the following situations will exceed the regulatory acceptable levels for wild birds and wild mammals as described in the *Diquat Review Technical Report*:
    - Pre-harvest crop desiccation in poppies, oilseeds, sunflower, cereals, rice, sugarcane, lupins, lucerne, pulses
    - General weed control in infested areas, orchards, and vineyards.
  - Instructions for use of diquat in the following situations will exceed the regulatory acceptable levels for wild mammals as described in the *Diquat Review Technical Report*



- Pre-harvest crop desiccation in cotton at all registered rates
  - General weed control in pasture and lucerne at rates exceeding 88 g diquat/ha.
  - Instructions for use of chemical products containing diquat in the following situations will exceed the regulatory acceptable levels for birds:
    - pre-harvest crop desiccation in potatoes at all registered rates
    - general weed control in row crops, vegetables, market gardens, and oilseeds at rates exceeding 283 g ac/ha
    - General weed control in wheat and oats at rates exceeding 122 g ac/ha.
  - Instructions for use of co-formulated products containing 115 g/L diquat and 135 g/L paraquat active constituents in any situation, except as an aid to cultivation in fallow (full disturbance) at rates up to 175 g combined active/ha, will exceed the regulatory acceptable levels for wild mammals and/or wild birds as described in the diquat and paraquat review technical reports.
  - Instructions for use of diquat on “row crops, vegetables, and market gardens”, “orchards and vineyards (including bananas)” and “winter cereals” are not consistent with the APVMA crop group guidelines<sup>6</sup>, which require assessment of residues on specific crops, or current methods for assessing human dietary exposure to residues of diquat following its use in those situations, as described in the residues and trade assessment in the Diquat Review Technical Report. Therefore, I am not able to be satisfied that these uses will not result in human dietary exposure exceeding the ADI or ARfD.
- g) Section 5A(3)(a)(via) of the Agvet Code – whether the product conforms, or would conform, to any standard made for the product under section 6E to the extent that the standard relates to matters covered by subsection 5A(1).
- I. *The Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022* is the only standard made under section 6E that relates to matters covered by section 5A(1) of the Agvet Code and prescribes the maximum allowable variation of the concentration of constituents in registered chemical products from the nominal quantities recorded in the Register for active constituents and non-active constituents.
  - II. I accept the APVMA’s chemistry assessment, as detailed in the *Diquat and Review Technical Report*, in regard to Declarations of Composition and Certificates of Analysis for diquat chemical products supplied as part of the original registration applications. I am satisfied that all registered diquat chemical products comply with the *Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022*.
- h) Section 5A(3)(a)(vii) of the Agvet Code – any matters prescribed by the regulations.
- I. Regulation 8AB prescribes matters the APVMA must have regard to for the purposes of being satisfied as to whether a chemical product meets the safety criteria.
  - II. Regulation 8AB(1)(a) of the Agvet Regulations prescribes the method of analysis (if any) of the chemical composition and form of the constituents of the chemical product.
    - I accept the APVMA’s chemistry assessment, as detailed in the *Diquat and Review Technical Report*, regarding the information about the method of analysis of the chemical composition

<sup>6</sup> <https://www.apvma.gov.au/crop-groups>

and form of the constituents of diquat chemical products submitted as part of the original applications for product registration.

- There has not been any new information provided that would alter my satisfaction regarding the method of analysis of the chemical composition and form of the active constituents.
  - I remain satisfied of the method of analysis of the chemical composition and form of the constituents of each registered diquat chemical product listed in Attachment A.
- III. Regulation 8AB(2) provides that regulations 8AB(1)(b) and (c) do not apply if the product is prescribed under subregulation 59(1) of the Agvet Regulations for the purposes of section 120A of the Agvet Code.
- All agricultural chemical products are prescribed under regulation 59(1)(a) of the Agvet Regulations for the purposes of section 120A of the Agvet Code, therefore regulations 8AB(1)(b) and (c) are not relevant to diquat chemical products.
- IV. Regulations 8AB(1)(d), (e) and (f) of the Agvet Regulations do not apply to diquat chemical products based on the on the formulation, chemical composition and the use patterns of diquat products.
- 18) Under section 5A(3)(b) of the Agvet Code, the APVMA may have regard to one or more of the following matters in determining whether a chemical product meets the safety criteria:
- a) Section 5A(3)(b)(i) of the Agvet Code – the acceptable daily intake of each constituent contained in the product.
- I. I accept the recommendation of the APVMA's human health risk assessment, which has determined that the acceptable daily intake for diquat is 0.006 mg/kg bw/day as discussed in paragraph 6)a) above and the *Diquat Review Technical Report*.
- b) Section 5A(3)(b)(ii) of the Agvet Code – any dietary exposure assessment prepared under subsection 82(4) of the *Food Standards Australia New Zealand Act 1991* as a result of any proposed variation notified under section 82(3) of that Act in relation to the product, and any comments on the assessment given to the APVMA under section 82(4) of that Act.
- I. There has not been a dietary exposure assessment prepared under subsection 82(4) of the *Food Standards Australia New Zealand Act 1991*.
- c) Section 5A(3)(b)(iii) of the Agvet Code – whether any trials or laboratory experiments have been carried out to determine the residues of the product and, if so, the results of those trials or experiments and whether those results show that the residues of the product will not be greater than limits that the APVMA has approved or approves.
- I. I accept the conclusions of the APVMA's Residues and Trade risk assessment, as described in the *Diquat Review Technical Report*, which assessed the results of trials or experiments that have been conducted to determine the residue of diquat products, including combined paraquat and diquat products, that will remain in all situations where those products are used to determine whether the residues of the product will not be greater than limits that the APVMA has approved or approves (Maximum Residue Levels; MRLs).
- II. Residues data is available for all uses of diquat products, except for use on:
- pineapple, green onions, brassica vegetables other than crops with specific residue data, i.e. broccoli, head cabbages, cauliflower and Chinese cabbage (type Pe-tsai), fruiting vegetables (cucurbits), stalk and stem vegetables (including a specific label use for asparagus), herbs and spices

- I am **not satisfied** that the use of diquat on the crops listed above will not result in residues of diquat that will not be greater than limits that the APVMA has approved or approves.
- III. I accept that the conclusions of the APVMA's Residues and Trade risk assessment, as described in the *Diquat Review Technical Report*, that:
- there is insufficient data for sorghum to confirm the current MRL for pre-harvest desiccation uses and assess dietary risk
  - there is insufficient data for rice to confirm the current MRLs for pre-harvest desiccation uses and assess dietary risk
  - there is insufficient residue data to support the registered use on cotton for pre-harvest desiccation
  - there is insufficient residue data to support the over-the-top use or pre-harvest desiccation of sugarcane
  - I am **not satisfied** that the residues in food resulting from the use of diquat as listed above, have been quantified to allow the APVMA to set a limit for the residues resulting from these uses.
- IV. I am satisfied that the results of the trials considered by the APVMA's Residues and Trade risk assessment show that the residues of diquat (and paraquat for combined products) will not be greater than the relevant MRLs, provided the harvest withholding periods listed below are observed:
- for orchards and row crops for pre-emergent applications or applications by a shielded spray – “Not required when used as directed”
  - for the pre-harvest desiccation of potatoes and sweet potatoes – 7 and 14 days respectively, noting these uses are not supported by the environment risk assessment outcomes
  - for pre-harvest desiccation of all pulse crops with this use (dry beans, dry peas, lentils, chickpeas, faba beans, lupins, mung beans, pigeon peas and soya beans) – 4 days, noting these uses are not supported by the environment risk assessment outcomes
  - for barley, oats, rye, triticale and wheat for pre-harvest weed control – 4 days, noting these uses are not supported by the environment risk assessment outcomes
  - for maize following direct drilling at cultivation – “Not required when used as directed”, noting these uses are not supported by the environment risk assessment outcomes
  - for pre-emergent use on rice – “Not required when used as directed”, noting these uses are not supported by the environment risk assessment outcomes
  - for canola, linseed and sunflower – 7 days, noting these uses are not supported by the environment risk assessment outcomes
  - for poppies – 2 days, noting this use is not supported by the environment risk assessment outcomes
  - for establishing sugarcane or controlling weeds in a fallow prior to sugarcane – “Not required when used as directed”, noting these uses are not supported by the environment risk assessment outcomes
  - for hops – “Not required when used as directed”
  - for crop establishment uses (canola, chickpeas, cereals (wheat, barley, oats, rye, triticale, sorghum, maize, millet), cotton, field beans, field peas, lentils, linseed, lupins, fodder rape,

mungbeans, navy beans, peanuts, pigeon peas, safflower, soybeans, sunflower, pasture (clover, grass, lucerne, medic), vetch) – “Not required when used as directed”

- the supported grazing withholding period statement in relation to diquat is “DO NOT graze or cut for stock food for 1 day after application” (noting that diquat products that also contain paraquat require a 7 day grazing withholding period for horses).

d) Section 5A(3)(b)(iv) of the Agvet Code – the stability of the product.

- I accept the recommendation of the APVMA’s chemistry assessment, as described in the *Diquat Review Technical Report*, which considered the information provided in the applications for registration of diquat chemical products. I am satisfied that those products are expected to be adequately stable provided they are stored in accordance with the instructions on the approved labels as described in the *Diquat Review Technical Report*.

e) Section 5A(3)(b)(v) of the Agvet Code – the specifications for containers for the product.

- I accept the recommendation of the APVMA’s chemistry assessment, as described in the *Diquat Review Technical Report*, that the containers for diquat chemical products are acceptable with respect of the conditions for containers for chemical products set out in Regulation 18 of the Agvet Regulations, except for regulation 18(e), which requires that the container must enable all or any part of its contents to be removed or discharged in such a way that, with the exercise of no more than reasonable care, the contents cannot harm a person or have an unintended effect that is harmful to the environment.
- I am **not satisfied** that the containers for diquat chemical products enable all or any part of the container’s contents to be removed or discharged in such a way that, with the exercise of no more than reasonable care, the contents cannot harm a person or have an unintended effect that is harmful to the environment, as required by regulation 18(e), as no relevant information has been provided to the APVMA, as described in the *Diquat Review Technical Report*.

### Consideration of whether relevant particulars or conditions of registered chemical products can be varied to meet the safety criteria

19) I have considered whether registered diquat chemical products can be varied in such a way as to meet the safety criteria set out in Section 5A(1) of the Agvet Code for the purposes of section 34A(1) as follows:

- To address concerns identified in paragraph 15)e) when considering the conditions to which the registrations of chemical products containing diquat are subject, in accordance with section 5A(3)(a)(v), I propose to vary the conditions referred to as the ‘Agricultural Products Active Constituent Quality Assurance Requirements’ to remove elements that are set out in the Agvet Code and the Agvet Regulations to read as follows:

Condition of registration: ‘*Agricultural Chemical Products Active Constituent Quality Assurance Requirements*’

- A chemical product must not be supplied unless the holder of the registration possesses batch analysis results that demonstrate:
  - the active constituent(s) in the chemical product comply with Agricultural and Veterinary Chemicals Code (Agricultural Active Constituents) Standards 2022; and
  - If there is an APVMA standard made under section 6E of the Agvet Code for any constituent that is not an active constituent in the chemical product, that the constituent complied with the APVMA Standard for that constituent; and

- the active constituent(s) and any excipients in the chemical product comply with the Agricultural and Veterinary Chemicals Code (Allowable Variations in Concentrations of Constituents in Agricultural Chemical Products) Standards 2022 (if applicable).
  - A chemical product must not be supplied unless the holder of the registration possesses a record that contains the following information for the batch of chemical product:
    - the name of the chemical product
    - the APVMA product number of the chemical product
    - if the chemical product was imported into Australia by another person on behalf of, or pursuant to an arrangement with the holder, the name and address of that person, and the date of importation
    - if the chemical product was manufactured in Australia by another person on behalf of, or pursuant to an arrangement with the holder, the name and address of that person, and the date of manufacture
    - the batch number of the chemical product from which the supply was made and the quantity of the chemical product in that batch
    - the batch number of the active constituent contained in the chemical product, and name and address of the manufacturer of the active constituent
    - the date of the batch analysis;
    - full details and validation data for the analytical methods used; including linearity, precision, accuracy and limit of quantitation if relevant
  - The holder must keep, or cause to be kept, any batch analysis results or record for 2 years after any batch analysis results or record is made.
  - For the purposes of this condition:
    - *Batch* means a defined quantity of chemical product or active constituent (as the case may be) produced in a single series of operations.
    - *Batch Number* means a distinctive combination of numbers and/or letters that specifically identifies a batch from which the production history can be determined.
    - *Possess* means in the possession of the holder or in the possession of another person pursuant to an arrangement with the holder
    - *Record* includes information stored or recorded by means of a computer
- II. To address concerns identified in paragraph 15)f)III and 15)f)IV in relation to the instructions for use of the products that are relevant particulars that are or would be entered into the Register for diquat chemical products as required by section 5A(3)(a)(vi) of the Agvet Code, I propose to vary the instructions for use as indicated below:
- vary the instructions for use of diquat applied by ground boom in small scale agriculture, i.e. row crops, vegetables and market gardens, to remove rates that exceed 4.8 kg of diquat per operator per day and require the operator to use the following minimum personal protective equipment: open cab, single layer of clothing, gloves, PF10 respirator, and face shield or goggles when mixing or loading
  - vary the instructions for use of diquat applied by ground boom in broad scale agriculture to remove rates that exceed 317.7 kg of diquat per operator per day and require the operator to use the following minimum personal protective equipment: enclosed cab application, with

closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)

- vary the instructions for use of diquat applied by manually pressurised hand wand to remove rates that exceed 6.2 kg of diquat per operator per day, or 1.5 kg of diquat per operator per day by mechanically pressurised hand wand and require the operator to use the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading
- vary the instructions for use of chemical products containing both diquat and paraquat applied by ground boom in broad scale agriculture to remove rates that exceed 337 kg of paraquat per operator per day and require the operator to use the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)
- vary the instructions for use of chemical products containing both diquat and paraquat applied by manually pressurised hand wand to remove rates that exceed 4.5 kg of combined active constituent per operator per day, or 2.3 kg of combined active constituent per operator per day by mechanically pressurised hand wand and require the operator to use the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading
- vary the instructions for use of diquat in the following situations
  - vary the instructions for general weed control in pasture and lucerne to remove rates that exceed 88 g diquat/ha
  - vary the instructions for general weed control in row crops, vegetables, market gardens, and oilseeds to remove rates that exceed 283 g diquat/ha
  - vary the instructions for general weed control in wheat and oats at rates to remove rates that exceed 122 g ac/ha
- remove the instructions for use of chemical products containing diquat in the following situations
  - aquatic areas
  - pre-harvest crop desiccation in potatoes, cotton, poppies, oilseeds, sunflower, cereals, rice, sugarcane, lupins, lucerne, pulses
  - general weed control in infested areas, orchards, and vineyards
- remove the instructions for use of co-formulated products containing 115 g/L diquat and 135 g/L paraquat active constituents in any situation, except as an aid to cultivation in fallow (full disturbance) and vary those instructions to remove rates that exceed 175 g combined active constituent/ha
- vary the instructions for use of diquat on “row crops, vegetables, and market gardens” and “orchards and vineyards” to refer to specific crops or use situations, consistent with the APVMA crop group guidelines where those uses are supported by all other risk assessments as below:
  - replace the broad claims for orchards (including bananas) and vineyards with the following crops noting that not all crops are supported by other assessments:

- 
- citrus, grapes, pome fruit, stone fruit, tree nuts, tropical fruit (edible peel), tropical fruit (inedible peel, except pineapple)
    - replace the broad claims for row crops, vegetables and market gardens with the following crops, noting that not all crops are supported by other assessments:
      - berries and other small fruit (except grapes), brassica vegetables (broccoli, head cabbages, cauliflower and Chinese cabbage (type pe-tsai)), bulb vegetables (except green onions), fruiting vegetables (other than cucurbits), leafy vegetables, legume vegetables, pineapple, root and tuber vegetables.
  - III. To address the concerns identified in paragraph 16)c) in relation to whether any trials or laboratory experiments have been carried out to determine the residues of the product and whether those results show that the residues of the product will not be greater than limits that the APVMA has approved or approves as required by section 5A(3)(b)(iii), I propose to:
    - remove instructions for use of products containing diquat in the following situations which are not supported by sufficient residues information:
      - pineapple
      - green onions
      - brassica vegetables other than crops with specific residue data
      - fruiting vegetables (cucurbits)
      - stalk and stem vegetables (including a specific label use for asparagus)
      - herbs and spices
      - sorghum for pre-harvest desiccation
      - rice for pre-harvest desiccation
      - cotton for pre-harvest desiccation
      - sugar cane over-the-top use or pre-harvest desiccation
    - remove the instructions for use of products containing diquat, including products also containing paraquat, in the following situations which are not supported by the outcome of environmental risk assessments:
      - potatoes and sweet potatoes for pre-harvest desiccation
      - pre-harvest desiccation of all pulse crops with this use (dry beans, dry peas, lentils, chickpeas, faba beans, lupins, mung beans, pigeon peas and soya beans)
      - pre-harvest weed control for barley, oats, rye, triticale and wheat
      - maize following direct drilling at cultivation
      - rice for pre-emergent use
      - all uses on canola, linseed and sunflower
      - poppies for pre-harvest desiccation
      - establishing sugarcane or controlling weeds in a fallow prior to planting sugarcane
      - orchards
    - Vary the instructions for use of products containing diquat, including products that also contain paraquat, in the following situations to include the indicated withholding period statements:

- the harvest withholding period statement for row crops, vegetables and market gardens for pre-emergent applications or applications by a shielded sprayer is “Not required when used as directed”, noting the requirement to provide directions for specific crops as indicated in paragraph 19)II above
  - the harvest withholding period statement for hops is “Not required when used as directed”
  - the harvest withholding period statement for crop establishment uses (canola, chickpeas, cereals (wheat, barley, oats, rye, triticale, sorghum, maize, millet), cotton, field beans, field peas, lentils, linseed, lupins, fodder rape, mung beans, navy beans, peanuts, pigeon peas, safflower, soybeans, sunflower, pasture (clover, grass, lucerne, medic), vetch) is “Not required when used as directed”.
  - the harvest withholding period statement for general weed control up to 283 g ac/ha in oil seed poppies is “DO NOT harvest for at 2 days after application”
  - the supported grazing withholding period statement in relation to diquat is “DO NOT graze or cut for stock food for 1 day after application” (noting that diquat products that also contain paraquat require a 7-day grazing withholding period for horses).
- b) To address the concerns identified in paragraph 18)e) in relation to specifications for the containers for the products (section 5A(3)(b)(v) of the Agvet Code), I propose to vary the conditions of product registration to add the following requirement:

*Condition of Product Registration*

*This product must be supplied in a container that is sealed with a fitting compatible with enclosed mixing and loading systems capable of preventing contact between the contents of the container and users of the product during loading of the chemical into the application mechanism.*

- 20) I am satisfied that the relevant particulars and conditions of registration of the products listed in Table 1 of Attachment A of this notice can be varied in the ways set out in paragraph 17), above, so that the use of the products, in accordance with the instructions for use approved by the APVMA, meet the safety criteria as defined in section 5A of the Agvet Code.
- 21) I am **not satisfied** that the relevant particulars or conditions of registration of the products listed in Table 2 in Attachment A of this notice can be varied so that the use of the products, in accordance with the instructions approved by the APVMA, would meet the safety criteria as defined in section 5A of the Agvet Code.

## **Consideration of whether registered chemical products meet the efficacy criteria**

- 22) Section 5B(1) of the Agvet Code provides that a chemical product meets the efficacy criteria if use of the product, in accordance with instructions approved, or to be approved, by the APVMA for the product, or contained in an established standard, is, or would be, effective according to criteria determined by the APVMA by legislative instrument.

- a) The criteria for agricultural chemical products is listed in Part 2 of the *Agricultural and Veterinary Chemicals Code (Efficacy Criteria) Determination 2014*.
- I. Section 4(b)(iii) of Part 2 of the *Agricultural and Veterinary Chemicals Code (Efficacy Criteria) Determination 2014* provides that the efficacy of a chemical product can be demonstrated by a history of sale and effective use in equivalent uses.
  - II. I have had regard to the APVMA’s annual levy data and am satisfied that chemical products containing diquat are being sold in Australia.



- 23) Section 5B(2) of the Agvet Code provides that, for the purposes of being satisfied as to whether a chemical product meets the efficacy criteria, the APVMA must have regard to the following:
- a) Section 5B(2)(a) - whether any trials or laboratory experiments have been carried out to determine the efficacy of the product and, if so, the results of those trials or experiments.
    - I. Trials and laboratory experiments and the results of those trials and experiments were submitted in support of the registration or variation of chemical products containing diquat and found to demonstrate efficacy of diquat chemical products prior to registration. I remain satisfied that this information demonstrates the efficacy of diquat chemical products in destroying a plant for the as per the definition of an agricultural chemical product in section 5AA of the Agvet Code.
  - b) Section 5B(2)(b) - any conditions to which its registration is, or would be, subject;
    - I. I have considered the conditions of registration which apply to chemical products containing diquat. I am satisfied that the conditions of registration are appropriate.
  - c) Section 5B(2)(c) - any relevant particulars that are, or would be, entered in the Register for the product;
    - I. I have considered the relevant particulars that are entered in the Register for chemical products containing diquat. I am satisfied that the relevant particulars that are entered in the Register are appropriate.
    - II. The variations to the instructions for use proposed to satisfy the safety criteria (as set out in paragraph 17)) and trade criteria (as set out in paragraph 29) are within existing use patterns. I am satisfied that these variations are appropriate.
  - d) Section 5B(2)(ca) - whether the product conforms, or would conform, to any standard made for the product under section 6E to the extent that the standard relates to matters covered by subsection (1);
    - I. There are no standards made under section 6E which are relevant to the efficacy of chemical products containing diquat.
  - e) Section 5B(2)(d) any matters prescribed by the regulations.
    - I. There are no regulations which are relevant to the efficacy of chemical products containing diquat.
- 24) Having regard to the matters set out above, I am satisfied that the use of chemical products containing diquat meets the efficacy criteria as set out in section 5B of the Agvet Code and the *Agricultural and Veterinary Chemicals Code (Efficacy Criteria) Determination 2014*.

### Consideration of whether registered chemical products meet the trade criteria

- 25) Section 5C(1) of the Agvet Code provides that a product meets the trade criteria if use of the product, in accordance with instructions approved, or to be approved, by the APVMA or contained in an established standard, does not, or would not, unduly prejudice trade or commerce between Australia and places outside Australia.
- 26) Section 5C(3) of the Agvet Code provides that when considering whether a chemical products meets the trade criteria, I am required to have regard to the matters set out in subsection 5C(1) and 5C(2) to the extent prescribed by the regulations, or if there are no such regulations, to the extent that the APVMA thinks the matters are relevant.
- a) Regulation 8AD(2) of the Agvet Regulations provides that if it can be reasonably expected that a chemical product will be used in relation to a crop or animal, a product of which might be provided to a place outside Australia; or a crop that will be fed to an animal a product of which might be provided to a place outside Australia then I must have full regard to the matters set out in section 5C(1) and (2) of the Agvet Code.

- I. Chemical products containing diquat are registered for use on crops that are considered major export commodities including berries and other small fruits (grapes), cereal grains, citrus fruit, cotton seed, oilseed {except cotton seed}, pome fruit, pulses, stone fruit and sugar cane. It is therefore reasonably expected that a product of these crops might be provided to a place outside of Australia.
  - II. Chemical products containing diquat are registered for use on crops that can be used as stockfeed for mammalian and poultry animals. Mammalian and poultry animals and their products (including cattle, dairy products, pigs, sheep, goats, poultry and eggs) are considered major export commodities. It is therefore reasonably expected that a product of these animals might be provided to a place outside of Australia.
- 27) For the purposes of considering whether diquat chemical products meet the trade criteria as described in section 5C(1) of the Agvet Code, I have had full regard to the matters set out in section 5C(2) as follows:
- a) Section 5C(2)(a) - any conditions to which its registration is, or would be, subject.
    - I. I have had regard to the conditions of registration prescribed by regulation 17C(2) of the Agvet Regulations and the conditions imposed by the APVMA for the purpose of section 21(c)(v) in accordance with 23(1)(b).
    - II. I am satisfied that the conditions of registration currently applied to chemical products containing diquat remain acceptable and that use of the products, in accordance with any instructions approved by the APVMA or contained in an established standard, does not or would not unduly prejudice trade or commerce between Australia and places outside Australia.
  - b) Section 5C(2)(b) - any relevant particulars that are, or would be, entered in the Register for the product.
    - I. The relevant particulars required to be entered in the Register for a chemical product are set out by section 20(1)(c) of the Agvet Code and prescribed by Regulation 16 of the Agvet Regulations as:
      - the distinguishing number;
      - any instructions for the use of the product
      - the distinguishing name of the chemical product
      - the constituents of the chemical product
      - the concentration of each constituent of the chemical product
      - if possible, the composition and purity of each active constituent of the chemical product
      - the formulation type for the chemical product
      - the net contents of the chemical product
      - identifying information for the holder of the registration for the chemical product
      - the name of each manufacturer of the chemical product
      - the address of each site at which the chemical product is manufactured by the manufacturer
      - the date of entry of these particulars in the Register of Chemical Products
      - identifying information for any nominated agent for the registration.
    - II. I have considered the relevant particulars entered in the Register for each registered product containing diquat and I have concluded that all relevant particulars except for the instructions for use for the product remain acceptable with respect of the trade criteria.

III. I have had regard to the recommendations of the Residues and Trade assessment as described in the *Diquat Review Technical Report*, which considered the instructions for the use of chemical products containing diquat and the potential for those uses to result in finite diquat residues on major export commodities as described in the *Diquat Review Technical Report*.

- As described in paragraphs 17)f) and 16)c) above and in the *Diquat Review Technical Report*, I am **not satisfied** that the instructions for use of diquat that have the potential to result in finite residues of diquat on major export commodities meet the safety criteria.
- I am **not satisfied** that the instructions for use of diquat that have the potential to result in finite residues of diquat on major export commodities can be varied to meet the safety criteria as described in paragraph 17) above.
- I have proposed to remove the instructions for use of diquat that have the potential to result in finite residues of diquat on major export commodities as described in paragraph 17)
- I am satisfied that the use of diquat according to the instructions that I propose to affirm for the uses that meet the safety criteria will not unduly prejudice trade between Australia and places outside Australia as discussed in the *Diquat Review Technical Report*.

c) Section 5C(2)(ba), whether the product conforms, or would conform, to any standard made for the product under section 6E to the extent that the standard relates to matters covered by subsection (1);

- I. There are no standards made under section 6E that are relevant to the risk to trade or commerce between Australia and places outside Australia for the products containing diquat listed in Attachment A.

d) Section 5C(2)(c), any matters prescribed by the regulations.

- I. There are no matters prescribed by the regulations for the purposes of section 5C(2)(c) of the Agvet Code.

28) I am therefore **not satisfied** that the use of chemical products containing diquat, in accordance with instructions approved by the APVMA meets the trade criteria.

### **Consideration of whether relevant particulars or conditions of registered chemical products can be varied to meet the trade criteria**

29) I have considered whether the instructions for use for registered diquat products can be varied in such a way as to meet the trade criteria set out in section 5C(1) for the purposes of section 34A(1) as follows.

- a) To address the concerns identified in paragraph 27)b)III above, regarding the instructions for use of diquat products, I am satisfied that if the instructions for use of diquat products are varied so that the products meet the safety criteria, as described in paragraph 17) above, use of the products according to the remaining instructions for use will meet the trade criteria as set out in section 5C of the Agvet Code.

### **Consideration of whether registered chemical products comply with any requirement prescribed by the regulations**

30) Regulation 42 of the Agvet Regulations prescribes standards for chemical products for the purposes of section 87 of the Agvet Code.

- a) Regulation 42(3) prescribes standards that apply to a chemical product if the chemical product meets specific requirements listed in that regulation.

- b) Regulation 42(3)(b) prescribes: “for a product or constituent (other than a product or constituent to which paragraph (a) applies) in respect of which a standard has been made under section 6E of the Code—that standard”.
- I. The APVMA has made the *Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022* under section 6E of the Agvet Code, which applies to all diquat products listed in Attachment A.
- II. I accept the recommendation from the APVMA’s chemistry assessment of the information submitted to support registration of the chemical products listed in Attachment A, including declarations of composition and 5-batch analyses as described in the *Diquat Review Technical Report*. I am satisfied that registered agricultural chemical products containing diquat conform to the specifications listed in the *Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022*.
- 31) I am satisfied that registered diquat chemical products meet the requirements prescribed by regulation 42 of the Agvet Regulations for the purposes of section 87 of the Agvet Code.
- 32) I am satisfied that there are no other requirements prescribed by the regulations that have not been considered.

### **Labels for chemical products**

- 33) Sections 34(1)(c) and 34(1)(d) of the Agvet Code provides that I must affirm the approval of a label if, and only if, I am satisfied that the label meets the labelling criteria, and complies with any requirement prescribed by the regulations, respectively.
- 34) Subsection 34(2) of the Agvet Code provides that subsection 34(1) applies only to the extent that I decide to reconsider matters covered by this subsection.
- 35) I have decided to reconsider all matters covered by subsection 34(1) in relation to the reconsideration of diquat label approvals.

### **Consideration of whether approved labels for diquat chemical products meet the labelling criteria and comply with any requirement prescribed by the regulations**

- 36) Section 5D(1) of the Agvet Code provides that a label for containers for a chemical product ‘meets the labelling criteria’ if the label contains adequate instructions relating to such of the following as are appropriate:
- a) the circumstances in which the product should be used (5D(1)(a))
  - b) how the product should be used (5D(1)(b))
  - c) the times when the product should be used (5D(1)(c))
  - d) the frequency of the use of the product (5D(1)(d))
  - e) the withholding period after the use of the product (5D(1)(e))
  - f) the re-entry period after the use of the product (5D(1)(f))
  - g) the disposal of the product when it is no longer required (5D(1)(g))
  - h) the disposal of containers of the product (5D(1)(h))
  - i) the safe handling of the product and first aid in the event of an accident caused by the handling of the product (5D(1)(i))

j) any matters prescribed by the regulations (5D(1)(j)). In this regard, regulation 8AE(1) of the Agvet Regulations prescribes the following:

- I. Regulation 8AE(1)(a) – for a chemical product that is a veterinary chemical product, the duration of the treatment
- II. Regulation 8AE(1)(b) – the prevention of undue prejudice to trade or commerce between Australia and places outside of Australia
- III. Regulation 8AE(1)(c) – the appropriate signal words (if any) required by the current Poisons Standard
- IV. Regulation 8AE(1)(d) – for a chemical product that is a date-controlled product, the storage of containers for the product
- V. Regulation 8AE(1)(e) – any other matter determined by the APVMA CEO under regulation 8AE(2).

37) Section 5D(2) of the Agvet Code provides that for the purposes of being satisfied as to whether a label meets the labelling criteria, the APVMA must have regard to the matters set out in section 5D(2). I have considered these matters, with respect to whether the instructions relating to the matters listed in section 5D(1) are adequate as follows.

a) Section 5D(2)(a) of the Agvet Code - any conditions to which the label's approval is, or would be, subject.

- I. I am satisfied that the conditions to which label approvals are subject pursuant to section 23(1) of the Agvet Code, as prescribed by regulations 18B to 18J of the Agvet Regulations, are appropriate for the labels for containers for products listed in Attachment A of this notice, and that no additional conditions of label approval are required.

b) Section 5D(2)(b) of the Agvet Code - any relevant particulars and instructions that are, or would be, entered in the relevant APVMA file for the label.

- I. I have had regard to the APVMA's chemistry, human health, environment, and residues and trade risk assessments as described in the *Diquat Review Technical Report* in regard to the relevant particulars and instructions entered in the file for each approved label listed in Attachment A and I am satisfied that all relevant particulars remain appropriate, except for the instructions for use as related to the matters listed in section 5D(1) of the Agvet Code.

II. I have had regard to the instructions entered in the relevant file relating to each matter listed in section 5D(1) as follows:

- the circumstances in which the product should be used (section 5D(1)(a))
  - I am **not satisfied** that the instructions for use of diquat in aquatic situations are adequate to prevent exceedance of the diquat RALs for non-target aquatic species as described in the environment section of the *Diquat Review Technical Report*.
  - I am **not satisfied** that the instructions for use of diquat in the following situations, at all currently approved rates, are adequate to prevent exceedance of the diquat RALs for wild birds, wild mammals or both, as described in the environment section of the *Diquat Review Technical Report*
    - Pre-harvest crop desiccation in poppies, oilseeds, sunflower, cereals, rice, sugarcane, lupins, lucerne, pulses
    - General weed control in infested areas, orchards, and vineyards
    - Pre-harvest crop desiccation in cotton at all registered rates

- pre-harvest crop desiccation in potatoes at all registered rates
- I am **not satisfied** that the instructions for use of diquat in the following situations are adequate to prevent exceedance of the diquat RALs for wild birds, wild mammals or both, as described in the environment section of the *Diquat Review Technical Report*
  - General weed control in pasture and lucerne at rates exceeding 88 g diquat/ha
  - General weed control in row crops, vegetables, market gardens, and oilseeds at rates exceeding 283 g diquat/ha
  - General weed control in wheat and oats at rates exceeding 122 g diquat/ha
- I am **not satisfied** that the instructions for use of co-formulated products containing 115 g/L diquat and 135 g/L paraquat active constituents in any situation, except as an aid to cultivation in fallow (full disturbance) at rates up to 175 g combined active/ha, are adequate to prevent exceedance of the combined toxicity RALs for wild mammals and/or wild birds as described in the environment section of the *Diquat Review Technical Reports*.
- I am **not satisfied** that the instructions for use of diquat products on “row crops, vegetables, and market gardens”, “orchards and vineyards (including bananas)” and winter cereals are adequate as these general definitions are not consistent with the APVMA crop group guidelines or current methods for assessing human dietary exposure to residues of diquat following its use in those situations as discussed in paragraph 27)b)III 17)f)IV above. Therefore, I am not able to be satisfied that these uses will not result in human dietary exposure exceeding the ADI or ARfD.
- In relation to how the product should be used (section 5D(1)(b)):
  - I have considered the instructions for how diquat products should be used that are contained in the approved labels and I am **not satisfied** that the instructions are adequate in the following instances:
    - I am **not satisfied** that the restraints limiting how the products may be used are adequate to prevent exceedance of the acceptable occupational exposure levels described in the *Diquat Review Technical Report*
    - I am **not satisfied** that the instructions for how the products should be used in the following situations will not result in exceedances of the acceptable levels of occupational exposure as described in the *Diquat Review Technical Report*
      1. Application by ground boom in small scale agriculture, i.e. row crops, vegetables and market gardens, at rates exceeding 6 ha/day at the maximum current label rate of 800 g ac/ha (4.8 kg of diquat per operator per day) when the operator uses the following personal protective equipment: open cab, single layer of clothing, gloves, PF10 respirator, and face shield or goggles when mixing or loading
      2. Application by ground boom in broad scale agriculture at rates exceeding 317.7 kg of diquat per operator per day when the operator uses the following minimum personal protective equipment: enclosed cab application, with enclosed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)

3. Application by manually pressurised hand wand at rates exceeding 6.2 kg of diquat per operator per day, or by mechanically pressurised hand wand at rates exceeding 1.5 kg of diquat per operator per day when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading
  4. Application of products containing both diquat and paraquat applied by ground boom in broad scale agriculture at rates exceeding 337 kg of paraquat per operator per day when the operator uses the following minimum personal protective equipment: enclosed cab application, with closed mixing and loading (single layer of clothing, gloves, PF10 respirator, face shield or goggles when connecting, disconnecting or cleaning components of the mixing and loading system)
  5. Application of products containing both diquat and paraquat applied by manually pressurised hand wand at rates exceeding 4.5 kg of combined active constituent per operator per day, or by mechanically pressurised hand wand at rates exceeding 2.3 kg of combined active constituent per operator per day when the operator uses the following minimum personal protective equipment: single layer of clothing, gloves, PF10 respirator and face shield or goggles when mixing and loading
- I am **not satisfied** that labels contain adequate instructions for how the products should be used to prevent diquat spray drift from exceeding RALs in sensitive areas as described in the *Diquat Review Technical Report*.
- In relation to the times when the product should be used (s5D(1)(c)):
    - I have considered the instructions for the times when the product should be used and I am satisfied that the instructions contained in the labels for diquat products remain adequate in this respect as described in the *Diquat Review Technical Report*.
  - In relation to the frequency of the use of the product (section 5D(1)(d)):
    - I have considered the instructions for frequency of the use of the products and I am satisfied that the instructions contained in the labels for diquat products remain adequate in this respect as described in the *Diquat Review Technical Report*.
  - In relation to the withholding period after the use of the product (section 5D(1)(e)):
    - I have considered the instructions for the withholding periods after the use of diquat products and I am **not satisfied** that the instructions are adequate in the following instances:
      - I am **not satisfied** that the withholding periods for the following crops are supported by adequate data to allow the APVMA to determine a level of residue that is acceptable:
        1. use on pineapple, green onions, brassica vegetables other than broccoli, head cabbages, cauliflower and Chinese cabbage (type Pe-tsai), fruiting vegetables (cucurbits), stalk and stem vegetables (including a specific label use for asparagus), herbs and spices.
        2. pre-harvest desiccation of sorghum, rice, cotton, and over-the-top application and pre-harvest desiccation of sugarcane

- I am **not satisfied** that the results of the trials assessed by the APVMA's Residues and Trade risk assessment show that the residues of diquat (and paraquat for combined products) will not be greater than the relevant MRL, unless the harvest withholding periods listed below are observed:
  1. for orchards and row crops for pre-emergent applications or applications by a shielded spray – “Not required when used as directed”.
  2. for hops – “Not required when used as directed”
  3. for crop establishment uses (canola, chickpeas, cereals (wheat, barley, oats, rye, triticale, sorghum, maize, millet), cotton, field beans, field peas, lentils, linseed, lupins, fodder rape, mungbeans, navy beans, peanuts, pigeon peas, safflower, soybeans, sunflower, pasture (clover, grass, lucerne, medic), vetch) – “Not required when used as directed”.
- I am **not satisfied** that the results of the trials show that the residues of diquat (and paraquat for combined products) will not be greater than the relevant MRL, unless the harvest withholding periods listed below are observed, however the uses are not supported by the outcome of environment risk assessments, as noted in the *Diquat Review Technical Report* and paragraph 15)f)IV above.
  1. for maize following direct drilling at cultivation – “Not required when used as directed”
  2. for pre-emergent use on rice – “Not required when used as directed”
  3. for establishing sugarcane or controlling weeds in a fallow prior to sugarcane – “Not required when used as directed”
  4. for poppies – 2 days
  5. for pre-harvest desiccation of all pulse crops with this use (dry beans, dry peas, lentils, chickpeas, faba beans, lupins, mung beans, pigeon peas and soya beans) – 4 days
  6. for barley, oats, rye, triticale and wheat for pre-harvest weed control – 4 days
  7. for canola, linseed and sunflower – 7 days
  8. for the pre-harvest desiccation of potatoes and sweet potatoes – 7 and 14 days respectively
- I am **not satisfied** that the results of the trials assessed by the APVMA's Residues and Trade risk assessment show that the residues of diquat (and paraquat for combined products) will not be greater than the relevant MRL, unless the grazing withholding period statement in relation to diquat of “DO NOT graze or cut for stock food for 1 day after application” is observed (noting that diquat products that also contain paraquat require a 7 day grazing withholding period for horses).
- The re-entry period after the use of the product (section 5D(1)(f)):
  - I have considered the re-entry instructions contained in the labels and I am **not satisfied** that the instructions are adequate to prevent exposure of people to levels of diquat exceeding the acceptable occupational exposure levels as described in the *Diquat Review Technical Report*.



- The disposal of the product when it is no longer required (section 5D(1)(g)) and the disposal of containers for the product (section 5D(1)(h)):
  - I have considered the instructions for disposal of the product when it is no longer required and the instructions for disposal of containers for diquat products contained in the label and the current Agricultural Labelling Code, and I am **not satisfied** that the instructions are adequate, noting that they do not contain the disposal statements for unwanted chemical products or used containers that are required by current Agricultural Labelling Code, and that it may be an offence to bury chemical products and used containers in some jurisdictions.
  - In addition, I am proposing to require closed mixing and loading be used for diquat chemical products. Containers compatible with closed mixing and loading require specific disposal instructions as described in the Agricultural Labelling Code.
- The safe handling of the product and first aid in the event of an accident caused by the handling of the product (section 5D(1)(i)).
  - I have considered the hazards and risks of exposure to diquat in an accident caused by handling the product and I am **not satisfied** that the first aid instructions contained in the approved labels are adequate as described in the worker health and safety section of the *Diquat Review Technical Report*.
  - I am **not satisfied** that the instructions for safe handling of the products contained on approved labels for diquat products are adequate to prevent undue exposure to people handling the product as detailed in the worker health and safety section of the *Diquat Review Technical Report*.
- Any matters prescribed by the regulations (section 5D(1)(j)).
  - Regulation 8AE(1)(a) of the Agvet Regulations – for a chemical product that is a veterinary chemical product, the duration of the treatment.
    - Chemical products containing diquat are not veterinary chemical products.
  - Regulation 8AE(1)(b) of the Agvet Regulations – the prevention of undue prejudice to trade or commerce between Australia and places outside of Australia.
    - I have considered the instructions contained on the labels relevant to the prevention of prejudice to trade or commerce and I am **not satisfied** that the current withholding period and trade advice statements are adequate, as described in the residues and trade section of the *Diquat Review Technical Report*.
  - Regulation 8AE(1)(c) of the Agvet Regulations – the appropriate signal words (if any) required by the current Poisons Standard.
    - Diquat is included in Schedule 7 of the current Poisons Standard, also known as the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP), except when included in Schedule 6. Diquat is included in Schedule 6 of the SUSMP in preparations containing 20% or less of diquat.
    - I have considered the signal words contained on the labels for products containing diquat listed in Attachment A and I am satisfied that they are adequate to meet the requirements of the SUSMP.
    - I have also considered the signal words contained on the labels for products containing both paraquat and diquat listed in Attachment A and I am satisfied that

the products contain the relevant signal words and the additional cautionary statements required by the SUSMP for products that contain paraquat.

- Regulation 8AE(1)(d) of the Agvet Regulations – for a chemical product that is a date-controlled product, the storage of containers for the product.
    - Regulation 4 of the Agvet Regulations defines a date-controlled chemical product as “each veterinary chemical product and an agricultural chemical product specified in Schedule 1 to the Agvet Regulations”.
    - Chemical products containing diquat are not specified in Schedule 1 to the Agvet Regulations and are therefore not date-controlled chemical products.
  - Regulation 8AE(1)(e) of the Agvet Regulations – any other matter determined by the APVMA CEO under regulation 8AE(2).
    - There are no other matters determined by the APVMA CEO under regulation 8AE(2) in relation to diquat label approvals.
  - c) Section 5D(2)(c) of the Agvet Code - whether the label conforms, or would conform, to any standard made for the label under section 6E to the extent that the standard relates to matters covered by subsection (1).
    - I. There is no standard made for diquat label approvals under section 6E.
  - d) Section 5D(2)(d) of the Agvet Code - any matters prescribed by the regulations.
    - I. Regulation 18E requires that if a labelling standard has not been made by the APVMA, then the label must comply with the requirements of either the *Veterinary Labelling Code*, if the product is a veterinary chemical product, or the *Agricultural Labelling Code*, if the product is an agricultural chemical product.
    - II. I am **not satisfied** that the approved labels for diquat agricultural chemical products comply with the current *Agricultural Labelling Code*, in particular in relation to the instructions for disposal of the product when it is no longer required (section 5D(1)(g)) and the disposal of containers for the product (section 5D(1)(h)) as noted in paragraph 37)b)II which do not contain the disposal statements required by current *Agricultural Labelling Code*, and noting that it may be an offence to bury chemical products and used containers in some jurisdictions.
  - e) I am satisfied that diquat labels approvals are compliant with all other matters prescribed by the regulations; specifically, the conditions to which label approvals are subject as prescribed by regulations 18B to 18J.
- 38) I am **not satisfied** that currently approved labels for containers for diquat chemical products contain adequate instructions relating to the matters set out in paragraph 35) above.
- 39) I am satisfied that all particulars, excluding the instructions contained on the label, that are recorded in the relevant APVMA file remain appropriate.

**Consideration of whether approved labels for chemical products can be varied so as to meet the labelling criteria and comply with any requirement prescribed by the regulations**

- 40) I have considered whether the labels approved for containers for diquat chemical products can be varied in such a way as to meet the labelling criteria set out in Section 5D(1) of the Agvet Code for the purposes of section 34A(1).
- a) To address concerns identified in paragraph 35) when considering the matters in section 5D(2)(b) of the Agvet Code:

- I. I propose to vary the instructions relating to the circumstances in which the products should be used (section 5D(1)(a)) to:
- remove instructions for use of products containing diquat in the following situations
    - aquatic situations
    - pre-harvest crop desiccation in poppies, oilseeds, sunflower, cereals, rice, sugarcane, lupins, lucerne, pulses
    - general weed control in infested areas, orchards, and vineyards
    - pre-harvest crop desiccation in cotton at all registered rates
    - pre-harvest crop desiccation in potatoes at all registered rates
    - general weed control in pasture and lucerne at rates exceeding 88 g diquat/ha
    - general weed control in row crops, vegetables, market gardens, and oilseeds at rates exceeding 283 g ac/ha
    - general weed control in wheat and oats at rates exceeding 122 g ac/ha
  - remove instructions for use of co-formulated products containing 115 g/L diquat and 135 g/L paraquat active constituents in any situation, except as an aid to cultivation in fallow (full disturbance) at rates up to 175 g combined active/ha
  - vary the instructions for use of diquat products on “row crops, vegetables, and market gardens”, “orchards and vineyards (including bananas)” and “winter cereals to” indicate the following crops/situations, which are also supported by assessments against the safety, efficacy and trade criteria as described in the *Diquat Review Technical Report*
    - replace ‘row crops, vegetables, and market gardens’ with:
      - Berries and other small fruit (except grapes)
      - Brassica vegetables: broccoli, head cabbages, cauliflower and Chinese cabbage (type Pe-tsai)
      - Bulb vegetables: bulb onions
      - Fruiting Vegetables other than cucurbits
      - Leafy vegetables
      - Legume vegetables
      - Root and tuber vegetables
    - ‘orchards and vineyards (including bananas)’
      - no uses supported
    - replace ‘winter cereals’ with
      - Wheat, oats
  - add the following protection statements and restraints for the protection of non-target species to all products

*DO NOT apply if heavy rains or storms are forecast within 3 days.*

*DO NOT irrigate to the point of field runoff for at least 3 days after application.*

*Very toxic to aquatic life. DO NOT contaminate wetlands or watercourses with this product or used containers.*

*Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.*

- add the following protection statements and restraints for the protection of non-target species to products containing diquat

*Toxic to birds. However, the use of this product as directed is not expected to have adverse effects on birds.*

- add the following protection statements and restraints for the protection of non-target species to products containing both diquat and paraquat.

*Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals*

- II. to address the concerns identified in paragraph 35) in relation to how the product should be used (section 5D(1)(b)) I propose to vary the instructions contained by the approved labels as follows:

- add the following restraints to limit occupational exposure:

*DO NOT remove contents except for immediate use.*

*DO NOT apply by spraying equipment carried on the back of the users.*

*DO NOT use open mixing/loading equipment. Closed mixing and loading must be used.*

*DO NOT continue to use if eye irritation or bleeding from the nose occurs.*

*For small scale applications up to 6 ha per day:*

*DO NOT apply using open cab equipment unless using a PF10 respirator.*

*For applications greater than 6 ha per day:*

*DO NOT apply using open cab equipment. Enclosed cab application MUST be used.*

*For hand spray applications:*

*DO NOT use hand wand sprays by spraying out of the window of a vehicle.*

- add the following spray drift restraints to prevent diquat spray drift from exceeding RALs in sensitive areas:

#### SPRAY DRIFT RESTRAINTS

*Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)*

*DO NOT allow bystanders to come into contact with the spray cloud.*

*DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.*

*DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.*

DO NOT apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

DO NOT apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

<i>Diquat - buffer zones for boom sprayers (metres; MEDIUM droplet size)</i>						
Application rate	Boom height above the target canopy	Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 283 g ac/ha	0.5 m or lower	20	30	0	5	0
	1.0 m or lower	60	75	0	30	0
122 g ac/ha or lower	0.5 m or lower	0	10	0	0	0
	1.0 m or lower	30	40	0	15	0
88 g ac/ha lower	0.5 m or lower	0	10	0	0	0
	1.0 m or lower	20	35	0	10	0

DO NOT apply by a vertical sprayer.

DO NOT apply by aircraft unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- for maximum release heights above the target canopy of 3m or 25% of wingspan or 25% of rotor diameter whichever is the greatest, minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for aircraft') are observed.

<i>Diquat - buffer zones for aircraft (metres; MEDIUM droplet size)</i>					
Type of aircraft (rate)	Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Fixed-wing (283 g ac/ha)	275	350	0	120	0
Fixed-wing (122 g ac/ha)	140	170	0	65	0
Fixed-wing (88 g ac/ha)	110	140	0	50	0
Helicopter (283 g ac/ha)	180	220	0	90	0
Helicopter (122 g(ac/ha)	110	130	0	55	0
Helicopter (88 g ac/ha)	80	100	0	45	0

- Add the following spray drift restraints to products containing both paraquat and diquat to prevent combined paraquat and diquat spray drift from exceeding RALs in sensitive areas

#### SPRAY DRIFT RESTRAINTS

*Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift)*

*DO NOT allow bystanders to come into contact with the spray cloud.*

*DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.*

*DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.*

*DO NOT apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.*

*DO NOT apply by a vertical sprayer.*

*DO NOT apply by aircraft*

*DO NOT apply by a boom sprayer unless the following requirements are met:*

*- spray droplets not smaller than a MEDIUM spray droplet size category*

*- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.*

<i>Diquat-paraquat co-formulated chemical products – buffer zones for boom sprayers</i>						
<i>Application rate</i>	<i>Boom height above the target canopy</i>	<i>Mandatory downwind buffer zones (metres)</i>				
		<i>Bystander areas</i>	<i>Natural aquatic areas</i>	<i>Pollinator areas</i>	<i>Vegetation areas</i>	<i>Livestock areas</i>
<i>175 g acs/ha</i>	<i>0.5 m or lower</i>	<i>5</i>	<i>45</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>1.0 m or lower</i>	<i>35</i>	<i>120</i>	<i>0</i>	<i>15</i>	<i>0</i>
<i>150 g acs/ha or lower</i>	<i>0.5 m or lower</i>	<i>5</i>	<i>40</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>1.0 m or lower</i>	<i>30</i>	<i>110</i>	<i>0</i>	<i>15</i>	<i>0</i>

- III. To address the concerns identified in paragraph 35) in relation to the withholding period after the use of the product (section 5D(1)(e)) I propose to vary the instructions contained in the label as follows:

- remove the instructions for use on pineapple, green onions, brassica vegetables other than broccoli, head cabbages, cauliflower and Chinese cabbage (type Pe-tsai), fruiting vegetables (cucurbits), stalk and stem vegetables (including a specific label use for asparagus), herbs

and spices, pre-harvest desiccation of sorghum, rice, cotton, and over-the-top application and pre-harvest desiccation of sugarcane

- vary the withholding periods for the following crops to be “Not required when used as directed”
  - row crops and market gardens for pre-emergent applications or applications by a shielded spray (Berries and other small fruit (except grapes), Brassica vegetables: broccoli, head cabbages, cauliflower and Chinese cabbage (type Pe-tsai), Bulb vegetables: bulb onions, Fruiting Vegetables other than cucurbits, Leafy vegetables, Legume vegetables, Root and tuber vegetables
  - hops
  - crop establishment uses (canola, chickpeas, cereals (wheat, barley, oats, rye, triticale, sorghum, maize, millet), cotton, field beans, field peas, lentils, linseed, lupins, fodder rape, mungbeans, navy beans, peanuts, pigeon peas, safflower, soybeans, sunflower, pasture (clover, grass, lucerne, medic), vetch)
- vary the grazing withholding period statement for products containing diquat to  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION
- vary the grazing withholding period statements for products containing both paraquat and diquat to  
LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION  
HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION

- IV. To address the concerns identified in paragraph 35) in relation to the re-entry period I propose to vary the instructions in relation to the re-entry period after the use of the product (s5D(1)(f)) to read:

*DO NOT allow entry to treated areas until the spray has dried except in a closed cab.*

- V. To address the concerns identified in paragraph 35) in relation to the instructions for disposal of the product and disposal of containers for the product, I propose to vary the instructions in relation to the disposal of the product when it is no longer required (section 5D(1)(g)) and the disposal of containers for the product (section 5D(1)(h)) to read as follows:

*DO NOT dispose of undiluted chemicals on site.*

*110L Mini Bulk Returnable Container: Store the original sealed drum in a cool well ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT tamper with the non-return valve or the security seal. DO NOT contaminate the drum with water or any foreign matter. After each use of the product, please ensure that the non-return valve, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the drum have been used, please return the empty drum to the point of purchase. The drum remains the property of [Insert company name]*

*Refillable containers: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.*

- VI. To address the concerns identified in paragraph 37)b)II in relation to the safe handling of the products and first aid in the event of an accident caused by the handling of the products (section 5D(1)(i)) I propose to vary the instructions to read as follows:

- First aid statements (all products)

*If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.*

- Safety Directions (all products)

*Very dangerous, particularly the concentrate. Do not swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes, or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat, and skin. When handling, do not touch or rub eyes, nose, or mouth with hand. Avoid contact with eyes and skin, open wounds, and clothing. Protect eyes while using. If clothing becomes contaminated with product or with wet spray remove clothing immediately. Do not inhale spray mist. Do not allow children to play with containers or any equipment that is used. When connecting, disconnecting, and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles. When applying by low (manual pressurised) or high (mechanically pressurised) hand wand wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat, impervious footwear and a full face piece respirator with a canister specified for paraquat/diquat. After use and before eating, drinking, or smoking, wash hands, arms, and face thoroughly with soap and water. After each day's use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) clothing, and footwear.*

## Conclusions

- 41) Having regard to the matters set out above regarding diquat active constituent approvals,

- I am **not satisfied** that the diquat active constituent approvals listed in Attachment A meet the safety criteria;
- I am satisfied that the conditions of the diquat active constituent approvals listed in Attachment A can be varied as described in paragraph 8) of this statement of reasons to allow me to be satisfied that the constituents meet the safety criteria and allow the approvals to be affirmed; and
- I am satisfied that the active constituents listed in Attachment A comply with any other requirement prescribed by the regulations.

- 42) Having had regard to the matters set out above regarding diquat chemical products, I am:

- not satisfied** that the diquat chemical products meet the safety criteria, trade criteria and identified relevant requirements prescribed by the Agvet Regulations;
- satisfied that the diquat chemical products meet the efficacy criteria;
- satisfied that the relevant particulars and conditions of diquat chemical product registrations listed in Table 1 of Attachment A can be varied in such a way, as set out in paragraphs 17) and 26), of this draft statement of reasons, to allow the chemical product registrations to be affirmed.



- d) **not satisfied** that the particulars of diquat chemical product registrations listed in Table 2 of Attachment A can be varied in such a way to allow the chemical product registrations to be affirmed.
- 43) Having regard to the matters set out above regarding diquat label approvals, I am:
- a) **not satisfied** that the labels approved for containers for diquat chemical products meet the labelling criteria and comply with identified relevant requirement prescribed by the Agvet Regulations;
  - b) satisfied that the particulars of diquat label approvals listed in Table 1 of Attachment A can be varied, as set out in paragraph 40) of this statement of reasons and as reflected in the proposed labels in Attachment D, to allow me to be satisfied that the labels meet the labelling criteria in section 5D of the Agvet Code and to allow the label approvals to be affirmed;
  - c) **not satisfied** that the particulars or conditions of diquat label approvals listed in Table 2 of Attachment A can be varied in such a way to allow the label approvals to be affirmed.
- 44) Consequently, pursuant to section 34A(1) of the Agvet Code, I propose to:
- a) vary the conditions of diquat active constituent approvals listed in in Attachment A of this notice, in a manner set out in paragraphs 8) of this statement of reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - b) vary the relevant particulars and conditions of the chemical product registrations listed in of Attachment A, in a manner set out in paragraphs 17), and 26) of this draft statement of reasons, to allow affirmation under section 34(1) of the Agvet Code; and
  - c) vary the relevant particulars of the label approvals listed in of Attachment A in the manner set out in paragraph 40) of this draft statement of reasons, and as reflected in the proposed labels in Attachment D, to allow affirmation under section 34(1) of the Agvet Code.
- 45) Further, pursuant to section 34AA(1) of the Agvet Code, I propose to:
- a) cancel the chemical product registrations listed in Table 2 of Attachment A, as I am **not satisfied** that the relevant particulars or conditions of the registrations can be varied in such a way as to allow the registrations to be affirmed; and
  - b) cancel the label approvals listed in Table 2 of Attachment A, as I am **not satisfied** that the relevant particulars or conditions of the approvals can be varied in such a way as to allow the approvals to be affirmed.

### Preliminary consideration of a phase-out period

- 46) I have considered whether a phase-out period could be applied to existing diquat approvals and registrations in the event of any final decision to suspend, cancel or vary any diquat approvals or registrations.
- 47) If, having considered all submissions received in response to this section 34AB notice, the APVMA proceeds to suspend or cancel any diquat active constituent approvals, chemical product registrations or label approvals, this will be done in accordance with the Agvet Code and in particular Division 5 of Part 2 of that Code. Division 5 of Part 2 includes requirements regarding the giving of notice of suspensions and cancellations and the inclusion of instructions relating to possession, custody or use of the constituent or product (section 45A). This Division also includes provision in relation to the deeming of a permit to possess, have custody of or use the constituent or product, or product as labelled (section 45B).
- 48) If, having considered all submissions received in response to this section 34AB notice, the APVMA proceeds to vary any diquat label approvals, a determination may be made under section 81(3) of the Agvet Code to

permit the supply of registered chemical products with labels that were approved at an earlier time for a period allowed by the APVMA.

- 49) While the APVMA has not yet made any final decision to suspend, cancel or vary any diquat approvals or registrations, the preliminary view of the APVMA is that, in the event that a decision to cancel, suspend or vary is made, any section 45B permit could have the maximum duration of 12 months and any determination under section 81(3) of the Agvet Code could allow supply of relevant chemical products with the earlier approved label also for a 2-year period.

## Attachment C: Information on which the reasons are based

- 1) The information on which the reasons in the Draft Statement of Reasons is based is set out below:
  - a) Information provided to the APVMA in response to notices:
    - I. Issued to Holders under section 32 of the Agvet Code on 27 October 1997, and additional notices issued under section 32 of the Agvet Code on 1 July 2015, 10 May 2016, 16 August 2017, and 28 February 2024
    - II. Issued to Holders under section 33 of the Agvet Code on 3 March 2023, 22 August 2023 and 23 October 2023
    - III. Published in the APVMA Gazette under section 32 of the Agvet Code on 2 December 1997
  - b) Diquat Review Technical Report, July 2024
  - c) Other information assessed by the APVMA summarised in the following unpublished reports (these are internal APVMA reports which include confidential commercial information belonging to multiple parties):
    - I. Diquat - Assessment - Review Mammalian Toxicology, Metabolism, Kinetics Report - Final
    - II. Paraquat and Diquat - Review on toxicology and occupational uses - HHRA FTR - APVMA COPY
    - III. Residues and Trade assessment – Diquat Reconsideration – Final Recommendations
    - IV. Diquat - chemical review - environment 7.1 – fate
    - V. Diquat - chemical review - environment 7.2 – effects
    - VI. Diquat - chemical review - environment 7.3 – risk
    - VII. Diquat - chemical review - environment 7.4 - combo with paraquat
    - VIII. Diquat - chemical review - environment CCI attachment
- 2) The relevant provisions of the Agvet Code and instruments under that Code, in particular those set out below:

**Table C4: Agricultural and Veterinary Chemicals Code Act 1994**

Section	Section Heading
<b>3</b>	Definitions
<b>5A</b>	Definition of <i>meets the safety criteria</i>
<b>5B</b>	Definition of <i>meets the efficacy criteria</i>
<b>5C</b>	Definition of <i>meets the trade criteria</i>
<b>5D</b>	Definition of <i>meets the labelling criteria</i>
<b>6E</b>	The APVMA may make standards
<b>19</b>	How approval of active constituent takes place
<b>20</b>	How registration of chemical product takes place
<b>21</b>	How approval of label takes place

Section	Section Heading
23	Conditions of approval or registration
31	APVMA may reconsider an approval or registration
33	APVMA may require information, reports, results or samples
34	Reconsideration by APVMA
34A	Varying relevant particulars or conditions to allow affirmation
34AA	Suspension or cancellation
34AB	Notice of proposed decision

Table C5: Agricultural and Veterinary Chemicals Code Regulations 1995

Section	Section Heading
8AA	Safety Criteria – active constituents
8AB	Safety Criteria – chemical products
8AD	Trade Criteria
8AE	Labelling Criteria
15	Particulars of approved active constituents to be recorded
16	Particulars of registered chemical products to be recorded
17	Particulars for label
17C	Conditions of approval or registration – active constituents and chemical products
18	Conditions of registration of chemical products - containers
18E	Labelling standards and requirements

Table C6: Other legislative instruments under the *Agricultural and Veterinary Chemicals Code Act 1994*

Legislative instruments
<u>Agricultural and Veterinary Chemical Code (Efficacy Criteria) Determination 2014</u>
<u>Agricultural and Veterinary Chemicals Code (Conditions of Approval or Registration) Order 2021</u>
<u>Agricultural and Veterinary Chemicals Code (Agricultural Active Constituents) Standards 2022</u>
<u>Agricultural and Veterinary Chemicals Code (Allowable Variation in Concentrations of Constituents in Agricultural Chemical Products) Standard 2022</u>

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- 25) Therapeutic Goods (Poisons Standard – January 2024) Instrument 2024 (i.e. the Standard for the Uniform Scheduling of Medicines and Poisons)
  - 26) The Agricultural Labelling Code as published on the APVMA website
  - 27) The Veterinary Labelling Code as published on the APVMA website
  - 28) The APVMA's risk assessment manuals as published on the APVMA website at <https://www.apvma.gov.au/registrations-and-permits/data-guidelines/risk-assessment-manuals>
    - a. Chemistry and manufacture
    - b. Environment
    - c. Human health
    - d. Residues and trade
    - e. Spray Drift Risk Assessment Manual
  - 29) Food and Agriculture Organization of the United Nations (FAO) Specifications for Plant Protection Products (FAO Specification for Diquat)
  - 30) Annual levy data demonstrating sale of products containing diquat in Australia

## Attachment D: Proposed sample labels for diquat chemical products

Representative labels for each product group are provided below

Active Constituents	Product Group
Soluble concentrate products containing diquat as diquat dibromide	
diquat 200 g/L	1
Soluble concentrate (SL) formulation containing paraquat as paraquat dichloride and diquat as diquat dibromide	
diquat 115 g/L paraquat 135 g/L	2

**Diquat 200 g/L – product group 1 sample label**

Signal Headings:	POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING		
Product Name:	[Trade name]		
Constituent Statements:	ACTIVE CONSTITUENT: 200 g/L DIQUAT present as DIQUAT DIBROMIDE MONOHYDRATE		
Mode of Action:	GROUP	22	HERBICIDE
Statement of Claims:	For the control of broadleaf weeds in certain crops as per Directions for Use.		
Net Contents:	20 L, 110 L, 1000 L		
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the users.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>For small scale applications up to 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator</p> <p><b>For applications greater than 6 ha per day:</b> <b>DO NOT</b> apply using open cab equipment. Enclosed cab application <b>MUST</b> be used.</p> <p><b>For hand spray applications</b> <b>DO NOT</b> use hand wand sprays by spraying out of the window of a vehicle.</p> <p><b>DO NOT</b> spray when weeds are under drought stress or when covered with dust or soil.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>SPRAY DRIFT RESTRAINTS</b> Specific definitions for terms used in this section of the label can be found at <a href="http://apvma.gov.au/spraydrift">apvma.gov.au/spraydrift</a></p> <p><b>DO NOT</b> allow bystanders to come into contact with the spray cloud.</p> <p><b>DO NOT</b> apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.</p> <p><b>DO NOT</b> apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.</p>		

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

Diquat - buffer zones for boom sprayers (metres; MEDIUM droplet size)						
Application rate	Boom height above the target canopy	Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 283 g ac/ha	0.5 m or lower	20	30	0	5	0
	1.0 m or lower	60	75	0	30	0
122 g ac/ha or lower	0.5 m or lower	0	10	0	0	0
	1.0 m or lower	30	40	0	15	0
88 g ac/ha or lower	0.5 m or lower	0	10	0	0	0
	1.0 m or lower	20	35	0	10	0

**DO NOT** apply by a vertical sprayer.

**DO NOT** apply by aircraft unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- for maximum release heights above the target canopy of 3m or 25% of wingspan or 25% of rotor diameter whichever is the greatest, minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for aircraft') are observed.

Diquat - buffer zones for aircraft (metres; MEDIUM droplet size)					
Type of aircraft (rate)	Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Fixed-wing (283 g ac/ha)	275	350	0	120	0
Fixed-wing (122 g ac/ha)	140	170	0	65	0
Fixed-wing (88 g ac/ha)	110	140	0	50	0
Helicopter (283 g ac/ha)	180	220	0	90	0
Helicopter (122 g ac/ha)	110	130	0	55	0
Helicopter (88 g ac/ha)	80	100	0	45	0

Directions for Use:	This section contains file attachment.
Other Limitations:	
Withholding Periods:	GRAZING: DO NOT GRAZE OR CUT SPRAYED VEGETATION FOR STOCK FOOD FOR 1 DAY AFTER APPLICATION.



	<p><b>HARVEST:</b>          BERRIES AND OTHER SMALL FRUITS, HOPS, BROCCOLI, CAULIFLOWER, HEAD CABBAGE, CHINESE CABBAGE, BULB ONIONS, FRUITING VEGETABLES (OTHER THAN CUCURBITS), LEAFY VEGETABLES, LEGUME VEGETABLES, ROOT AND TUBER VEGETABLES: NOT REQUIRED WHEN USED AS DIRECTED.          POPPIES: DO NOT HARVEST FOR 2 DAYS AFTER APPLICATION</p>
Trade Advice:	<p><b>EXPORT OF TREATED PRODUCE</b>          Growers should note that MRLs or import tolerances do not exist in all markets for edible produce treated with [Trade name]. If you are growing edible produce for export, please check with [Company] for the latest information on MRLs and import tolerances BEFORE using [Trade name].</p>
General Directions:	<p>[Trade name] is an aqueous solution of diquat, a non-volatile herbicide with unique properties. It very quickly kills green growth with which it comes into contact and is particularly effective against broadleaved weeds. It is inactivated on contact with the soil and crop roots and seeds below the soil remain unharmed. It can be safely applied around bushes and trees which have no green bark. It is non-volatile, easily mixed with water and active at low concentrations.</p> <p><b>MIXING</b>          Add the required quantity of [Trade name] to water in the spray tank and agitate to give even mixing. Agitate again if left standing. Use clean water only, as suspended soil particles in dirty water will interfere with herbicidal action.</p> <p><b>WETTING AGENT</b>          [Trade name] contains no wetting agent, and a non-ionic wetting agent must be added to the spray mixture unless otherwise specified. Add [600 g/L non-ionic surfactant] at the rate of 200 mL/100 L or [1000 g/L non-ionic surfactant] at 160 mL/100 L of prepared spray unless otherwise specified.</p> <p><b>APPLICATION</b>          For best results, an even and complete coverage and good penetration of the spray into the target foliage is necessary. Best results will be obtained when application is made in dull weather or at the end of the day. [Trade name] is rapidly absorbed and is not affected by rain falling shortly after application.</p> <p><b>APPLICATION RATES</b>          Paraquat 250 Herbicide is preferred where grasses are dominant and [Trade name] where there are mainly broadleaf weeds.</p> <p><b>BOOM SPRAYING</b>          A boom sprayer fitted with flat fan nozzles is preferred to ensure even coverage and to minimise drift. The boom should be set at sufficient height above the crop to provide a complete double overlap of the flat spray pattern. Spray drop arms on booms are useful for dense crops such as potatoes. A minimum spray volume of 100 L/ha is recommended. Aim for spray droplets not smaller than a MEDIUM spray droplet size.</p> <p><b>HIGH VOLUME SPOT SPRAYING</b>          Hand-held equipment use 250 mL of product per 100 L of water and spray to visible wetness (max 700 L/ha).</p> <p><b>WEED CONTROL IN BERRIES AND OTHER SMALL FRUIT (EXCEPT GRAPES), BROCCOLI, HEAD CABBAGES, CAULIFLOWER AND CHINESE CABBAGE (TYPE PE-TSAI), BULB ONIONS, FRUITING VEGETABLES: OTHER THAN CUCURBITS, LEAFY VEGETABLES, LEGUME VEGETABLES, ROOT AND TUBER VEGETABLES:</b></p> <p>Pre-planting and pre-crop emergence:</p>

	<p>To control weeds in seed beds before sowing, or post-sowing pre-crop emergence, apply as a blanket spray with this product using boom spray equipment or hand-held sprayers.</p> <p>Post-emergence inter-row weed control: Use shielded nozzles for rapid control of weeds in inter-row spaces of row crops, after crop seedlings have emerged, or when transplanted crops are established. Direct the spray so that it does not touch the crop.</p>
Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b> <b>GROUP 22 HERBICIDE</b> [Trade name] is a member of the bipyridyl group of herbicides. The product has the inhibitor of photosynthesis at photosystem I mode of action. For weed resistance management, the product is a Group 22 herbicide. Some naturally-occurring weed biotypes resistant to the product and other inhibitors of Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. The resistant weeds will not be controlled by this product or other inhibitors of Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, [Company] accepts no liability for any losses that may result from the failure of this product to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b> <b>DO NOT</b> allow entry to treated areas until the spray has dried except in an enclosed cab.</p> <p><b>DO NOT</b> allow entry to the treated area for scouting and non hand-set irrigation for 1 day, for hand-set irrigation for 3 days, and for ploughing, tilling, levelling, planting, and mechanical harvesting for 12 days.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b> Domestic pets and poultry - keep away from treated areas.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b> Very toxic to aquatic life. <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers.</p> <p>Toxic to birds. However, the use of this product as directed is not expected to have adverse effects on birds.</p> <p>Toxic to beneficial foliar arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial foliar arthropods. Minimise spray drift to reduce harmful effects on beneficial foliar arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in the closed, original container in a cool, well-ventilated area. <b>DO NOT</b> store for prolonged periods in direct sunlight. Store in a locked room or a place away from children, animals, food, feedstuffs, seed and fertilisers.</p> <p>Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>

Safety Directions:	<p>Very dangerous, particularly the concentrate. DO NOT swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, DO NOT touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p> <p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>When applying by low (manual pressurised) or high (mechanically pressurised) hand wand wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat, impervious footwear and a full face piece respirator with a canister specified for paraquat/diquat.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water), clothing and footwear.</p>
First Aid Instructions:	<p>If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p>
First Aid Warnings:	

**DIRECTIONS FOR USE**

<b>Crop</b>	<b>Weeds Controlled</b>	<b>State</b>	<b>Rate</b>	<b>Critical Comments</b>
Hops	Annual broadleaf and grass weeds	Vic and Tas only	700 ml to 1.4 L/ha may be mixed with 1.1 kg Simazine 900 Granules	Apply as a directed inter-row spray prior to crop emerging from winter dormancy, using a minimum of 250 L/ha spray volume to ensure good and even coverage of weeds.
Lucerne	Capeweed and <i>Erodium</i> spp.	All States	350 ml/ha plus [600 g/L non-ionic surfactant] in 200 L water	Apply in early autumn Heavy grazing is necessary to reduce lucerne to 2cm in height before spraying.
Oil seed poppies	Weed control	Tas only	300 ml to 1.4 L/ha	Use only in accordance with recommendations made by Department of Primary Industries or the poppy contracting company. <b>DO NOT add any wetting agent to the spray solution.</b>
Berries and other small fruit (except grapes)	Seedling broadleaf weeds	All States	1.4 L/ha	Apply as a shielded spray between crop rows. Do not allow spray to contact any part of the crop.
Broccoli, head cabbages, cauliflower and Chinese cabbage (type Pe-tsai)				Apply as a blanket spray prior to crop emergence. Once crops have emerged, or seedlings have been transplanted, apply as a shielded spray between crop rows. Do not allow spray to contact any part of the crop.
Bulb onions				
Fruiting Vegetables: other than cucurbits				
Leafy vegetables				
Legume vegetables				
Root and tuber vegetables				
Wheat and Oats	Capeweed (small seedlings)	Qld, NSW, Vic, Tas and SA only	550 ml/ha in 200 L of water	<b>DO NOT</b> add wetting agent. Spray when the crop is between the 4 (wheat) or 3 (oats) leaf and early tillering stage.

**\*NOTE:** Use higher rate for dense or weedy crops.

WETTING AGENT: Add [600 g/L non-ionic surfactant] at the rate of 200 ml/100 L or [1000 g/L non-ionic surfactant] at 160 ml/100 L of prepared spray unless otherwise specified.

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL  
UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

**Diquat 115 g/L plus paraquat 135 g/L – product group 2 sample label**

Signal Headings:	<p>DANGEROUS POISON</p> <p>KEEP OUT OF REACH OF CHILDREN</p> <p>CAN KILL IF SWALLOWED</p> <p>DO NOT PUT IN DRINK BOTTLES</p> <p>KEEP LOCKED UP</p> <p>READ SAFETY DIRECTIONS BEFORE OPENING OR USING.</p>
Product Name:	[Product name]
Constituent Statements:	<p>ACTIVE CONSTITUENTS:</p> <p>135 g/L PARAQUAT present as PARAQUAT DICHLORIDE</p> <p>115 g/L DIQUAT present as DIQUAT DIBROMIDE</p>
Mode of Action:	GROUP 22 HERBICIDE
Statement of Claims:	For control of certain grasses and broadleaf weeds.
Net Contents:	[Insert]
Restraints:	<p><b>DO NOT</b> remove contents except for immediate use.</p> <p><b>DO NOT</b> continue to use if eye irritation or bleeding from the nose occurs.</p> <p><b>DO NOT</b> apply by aircraft or misting machines or hand-held equipment.</p> <p><b>DO NOT</b> apply by spraying equipment carried on the back of the user.</p> <p><b>DO NOT</b> use open mixing/loading equipment. Closed mixing and loading <b>MUST</b> be used.</p> <p><b>For small scale application up to 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment unless using a PF10 respirator.</p> <p><b>For applications greater than 6 ha per day:</b>  <b>DO NOT</b> apply using open cab equipment. Enclosed cab application <b>MUST</b> be used.</p> <p><b>DO NOT</b> apply if heavy rains or storms are forecast within 3 days.</p> <p><b>DO NOT</b> spray plants which are waterlogged, under stress of any kind or covered with soil or dust.</p> <p><b>DO NOT</b> spray plants covered with heavy dew, but rain following spraying will not affect results.</p> <p><b>DO NOT</b> irrigate to the point of field runoff for at least 3 days after application.</p> <p><b>DO NOT</b> sow or cultivate for 1 hour after spraying.</p> <p><b>SPRAY DRIFT RESTRAINTS</b>          Specific definitions for terms used in this section of the label can be found at <a href="http://apvma.gov.au/spraydrift">apvma.gov.au/spraydrift</a></p> <p><b>DO NOT</b> allow bystanders to come into contact with the spray cloud.</p> <p><b>DO NOT</b> apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or</p>

cause contamination of plant or livestock commodities, outside the application site from spray drift. The advisory buffer zones in the relevant buffer zone table below provides guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

**DO NOT** apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

**DO NOT** apply if there are surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

**DO NOT** apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a MEDIUM spray droplet size category
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

Paraquat – buffer zones for boom sprayers						
Applicati on rate	Boom height above the target canopy	Mandatory downwind buffer zones (metres)				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Up to 200 g ac/ha	0.5 m or lower	5	70	0	0	0
	1.0 m or lower	35	210	0	15	0
150 g ac/ha or lower	0.5 m or lower	0	55	0	0	0
	1.0 m or lower	30	160	0	10	0
100 g ac/ha lower	0.5 m or lower	0	40	0	0	0
	1.0 m or lower	20	120	0	10	0

Directions for Use:	This section contains file attachment.
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Other Limitations:	FOR USE ONLY AS AN AGRICULTURAL HERBICIDE. THIS PRODUCT IS TOO HAZARDOUS TO BE USED IN THE HOME GARDEN.
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Withholding Periods:	<p>GRAZING:</p> <p>LIVESTOCK: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 1 DAYS AFTER APPLICATION.</p> <p>HORSES: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.</p> <p>HARVEST</p> <p>CHICK PEAS, FABA BEANS, FIELD PEAS, LENTILS, LUPINS, VETCH - DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.</p> <p>OTHER USES: NOT REQUIRED WHEN USED AS DIRECTED.</p>
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Trade Advice:	LIVESTOCK DESTINED FOR EXPORT MARKETS
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	<p>The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the export slaughter interval is observed before stock are sold or slaughtered.</p> <p><b>EXPORT SLAUGHTER INTERVAL (ESI) 13 DAYS</b> Livestock that has grazed on or been fed treated crops should be placed on clean feed for 13 days prior to slaughter.</p> <p><b>EXPORT OF TREATED PRODUCE</b> Growers should note that maximum residue limits (MRLs) or import tolerances may not exist in all markets for chickpeas, faba beans, field peas, lentils, lupins or vetch treated with [Trade name]. If you are growing chickpeas, faba beans, field peas, lentils, lupins or vetch for export, please check with [Company] for the latest information on MRLs and import tolerances before using [Trade name].</p>									
General Directions:	<p>[Trade name] quickly kills a wide range of annual grasses, broadleaf weeds and some perennial grasses when sprayed directly onto the leaves. The active ingredients are rapidly and tightly absorbed by clay and silt particles in the soil and do not leave any effective soil residues. Thus, crops sown almost immediately after spraying are not affected by the [Trade name], nor are weed seeds which germinate after spraying. At spraying weeds should therefore not be covered by soil or dust as this may severely reduce efficacy.</p> <p>Where insect pests are anticipated use recommended insecticide treatment. Regular checks should be made before and after sowing.</p> <p>Suitable residual herbicides can be tank mixed with [Trade name] to provide extended in-crop weed control in fallows and subsequent crops. Read label recommendations of the respective residual herbicides prior to their use and observe precautions against use of residual herbicides before planting susceptible crops. See compatibility statement on this label for compatibility of [Trade name] with other herbicides. The principle of selective weed control with this product is that annual weeds are controlled but perennial plants and clovers recover after an initial scorch. The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limited at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds.</p> <p>Refer to local pasture guidelines for optimum plant densities.</p> <p>Mixing</p> <p>The recommended rate of [Trade name] should be added to water in the spray tank and agitated to give even mixing. Agitate again if left standing.</p> <p>Water Volume</p> <p>It is essential to obtain good leaf coverage with the spray. The following volumes are recommended:</p> <table><tr><th>Winter Rainfall Areas</th><th>Boom Spray</th><th>Summer Rainfall Areas: Weed Stage and Density</th></tr><tr><td>Plant height up to 2 cm</td><td>50 to 100 L/ha</td><td>Small plants (2 to 5 leaf) and well separated</td></tr><tr><td>Plant height up to 2 to 5 cm</td><td>100 to 150 L/ha</td><td>30 to 50 % ground cover</td></tr></table>	Winter Rainfall Areas	Boom Spray	Summer Rainfall Areas: Weed Stage and Density	Plant height up to 2 cm	50 to 100 L/ha	Small plants (2 to 5 leaf) and well separated	Plant height up to 2 to 5 cm	100 to 150 L/ha	30 to 50 % ground cover
Winter Rainfall Areas	Boom Spray	Summer Rainfall Areas: Weed Stage and Density								
Plant height up to 2 cm	50 to 100 L/ha	Small plants (2 to 5 leaf) and well separated								
Plant height up to 2 to 5 cm	100 to 150 L/ha	30 to 50 % ground cover								

**Note:**

(1) If the volume is increased above 100 L/ha additional wetter should be added at the rate of 200 mL [600 g/L non-ionic surfactant] or 120 mL [1000 g/L non-ionic surfactant] per 100 L of additional water.

(2) Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.

**Application****Boom Spray**

Use only through a properly calibrated boom spray which should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed. It is essential that a good marking or guidance system be used. If a disc marker is used it must be mounted so as to turn the soil back on to the area sprayed. Coverage of the weeds with the spray solution is critical for maximising efficacy. This is particularly important with fine leaf grasses. Use the recommended spray volume for the corresponding weed size and density from the Water Volume table above.

**Clean up**

Wash spray equipment with clean water immediately after use. This product is corrosive to metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.

[Trade name] is not compatible with copper, zinc or manganese sulphates.

**Direct Drilling Procedure (1)**

Use of [Trade name] in crop establishment with no working before sowing.

Step	Critical Comments
1. Burn	If possible crop stubble or pasture trash should be burnt early to avoid problems at sowing. Can also promote weed seed germination.
2. Shallow cultivation - optional	Should be carried out on opening rains to a depth of no more than 2 cm. This will encourage early even germination of weeds particularly annual grasses.
3. Heavily graze paddocks continuously from germination	This prepares the paddock for spraying by keeping the pasture short and open and at the same time restricts the development of the weed roots which will assist seed bed formation.
4. Remove stock 2 to 3 days before spraying	Allow the weeds to freshen up - important for maximum uptake of [Trade name]. Spraying can, however, take place immediately after stock removal provided there is sufficient leaf cover and the pasture is not dusty.
5. Spraying with a boom spray	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under Directions for Use.
6. Sow 3 to 5 days after spraying	A rigid tyne spring release combine is preferred to ensure adequate penetration. Points should not be worn. The combine must be level and set to work 3 to 5 cm and sow seed at recommended depth. Use standard seed and fertiliser rates. When harrowing is considered necessary use trailing harrows. Sowing can commence one 1 hour after spraying and should be completed within 7 days. Where heavy weed growth is present a better seed bed will result if sowing is delayed for 3 to 5 days.



	Crop Establishment with a Cultivation AFTER Spraying. Crop Establishment Procedure (2)	
	Step	Critical Comments
	1. Graze paddocks continuously from germination	This prepares the paddock for spraying by keeping the pasture short and open and at the same time restricts the development of the weed roots, which will assist seed bed formation.
	2. Remove stock 2 to 3 days before spraying	Allows the weeds to freshen up - important for maximum uptake of [Trade name]. Spraying can take place immediately after stock removal provided there is sufficient leaf cover and the pasture is not dusty.
	3. Spray with a boom spray	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under Directions for Use.
	4. Cultivate	Between 1 hour and 7 days after spraying. When dense weed growth is present implement penetration and resulting seed bed may be improved if cultivation commences 3 to 5 days after spraying. It is not necessary to cultivate deeper than sowing depth. Use scarifier or combine with heavy harrows.
	5. Sow	Sow at the recommended seed and fertilizer rates and depth.
	Crop Establishment with a Cultivation BEFORE Spraying. Crop Establishment Procedure (3)	
	Step	Critical Comments
	1. Graze	Graze pasture or stubble to keep growth of weeds down to a minimum following the autumn break.
	2. Cultivate 4 to 6 weeks prior to the anticipated sowing date	Cultivate after autumn rains when conditions are suitable to produce a seed bed and before heavy weed growth develops. A scarifier and heavy harrows should be used with the aim of killing existing weed growth and leaving the seed bed in a level condition. It is not necessary to cultivate deeper than the sowing depth.
	3. Wait	Wait 4 to 6 weeks to allow a full germination of weeds. Graze if necessary
	4. Remove stock 2 to 3 days before spraying	Allow the weeds to freshen up - important for maximum uptake of [Trade name]
	5. Spray with a boom spray	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under Directions for Use.
	6. Sow	Between one 1 hour and 7 days after spraying, sow crop in the normal manner. Sow at recommended seed and fertiliser rates and depth.
	NOTE: Where heavy weed growth is present at spraying, a better seed bed will result if sowing is delayed for 3 to 5 days.	
	NOTE: For on the farm advice and assistance, contact your dealer or [Company] Representative.	
Resistance Warning:	<b>RESISTANT WEEDS WARNING</b> <b>GROUP 22 HERBICIDE</b> [Trade name] is a member of the bipyridyls group of herbicides. [Trade name] has the inhibitors of photo-synthesis at photosystem I mode of action. For weed resistance	

	<p>management [Trade name] is a Group 22 herbicide. Some naturally occurring weed biotypes resistant to [Trade name] and other Group 22 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by [Trade name] or other Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, [Company] accepts no liability for any losses that may result from the failure of [Trade name] to control resistant weeds.</p>
Precautions:	<p><b>RE-ENTRY PERIOD:</b>  <b>DO NOT</b> allow entry to treated areas until the spray has dried.</p> <p><b>PRECAUTIONS:</b>  This formulation should not be applied of or near water which is used for human consumption.</p>
Protection Statements:	<p><b>PROTECTION OF LIVESTOCK</b>  This formulation should not be applied on or near water which is used for livestock watering.</p> <p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life.  <b>DO NOT</b> contaminate wetlands or watercourses with this product or used containers. This formulation should not be applied on or near water which is used for commercial or recreational fishing.</p> <p>Toxic to birds and native mammals. However, the use of this product as directed is not expected to have adverse effects on birds and native mammals.</p> <p>Toxic to beneficial arthropods. Not compatible with integrated pest management (IPM) programs utilising beneficial arthropods. Minimise spray drift to reduce harmful effects on beneficial arthropods in non-crop areas.</p>
Storage and Disposal:	<p>Store in the closed, original container in a dry, cool, well ventilated locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p> <p>Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>

Safety Directions:	<p>Very dangerous, particularly the concentrate. DO NOT swallow. The product, particularly the concentrate, can kill if swallowed, absorbed through the eyes or absorbed by skin contact. The liquid can cause burns particularly to the eyes. Will irritate the nose, throat and skin. When handling, DO NOT touch or rub eyes, nose or mouth with hand. Avoid contact with eyes and skin, open wounds and clothing. Protect eyes while using.</p> <p>If clothing becomes contaminated with product or with wet spray remove clothing immediately. DO NOT inhale spray mist. DO NOT allow children to play with containers or any equipment that is used.</p> <p>When connecting, disconnecting and cleaning equipment wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, impervious footwear, elbow-length chemical resistant gloves and a full face respirator with canister specified for paraquat/diquat OR half face-piece respirator with canister specified for paraquat/diquat and face shield or goggles.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use wash gloves, face shield or goggles, respirator (and if rubber wash with detergent and warm water) and footwear.</p>
First Aid Instructions:	<p>If poisoning occurs, get to a doctor or hospital quickly. If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p>
First Aid Warnings:	

**DIRECTIONS FOR USE**

Crop/Situation	Weeds Controlled		Growth Stage	Rate/ha	States	Critical Comments
	Common Name	Botanical Name				
<b>SOUTHERN AUSTRALIA</b>  <b>DIRECT DRILLING</b> with full combine  <b>or</b>  with cultivation before spraying  <b>or</b>  with cultivation after spraying as an aid in the establishment of crops Including:  <b>Winter</b> Canola, Chickpeas, Cereals (Wheat, Barley, Oats, Rye, Triticale), Field beans, Field peas, Lentils, Linseed (Linola), Lupins, Vetch  <b>Spring/Summer</b> Fodder Rape, Pigeon peas, Safflower, Sorghum, Soybeans, Sunflower  <b>Pasture</b> Clover Grass, Lucerne, Medic	Seedling grasses	<i>Lolium rigidum</i> <i>Bromus</i> spp. <i>Hordeum</i> spp.  <i>Avena</i> spp.	2 to 3 leaf	0.6 to 0.8 L	Sthn NSW, Vic, Tas, SA, WA only  <b>Apply by ground boom only.</b>  <b>Refer to Crop Establishment Procedure (1)</b>  In WA apply after the autumn break within 4 weeks of weed germination. In the other states apply to young or well grazed weeds. In a typical mixed weed situation use the rate recommended for the growth stage of the hardest-to-kill weed species. Rates shown are for optimum conditions, for sowing equipment with wide points and overall soil disturbance.  Δ For control of Vulpia (Silver Grass) add a [600 g/L non-ionic surfactant] at 160 L/100L or [1000 g/L non-ionic surfactant] at 100 mL/100L.  <b>Also refer to Crop Establishment Procedure (2) - cultivation after spraying.</b>  Cultivation or sowing can commence 30 minutes after spraying but should be completed within 7 days unless a suitable residual herbicide is added or weeds are sprayed again.  Where heavy weed growth is present at spraying a better seed bed will result if cultivation or sowing is delayed 3 to 5 days to obtain maximum root release.	
	Vulpia (Silver Grass, Sand Fescue)		<i>Vulpia</i> spp	2 to 3 leaf		0.6 to 0.8 LΔ

					<p><b>Also refer to Crop Establishment Procedure (3) - cultivation before spraying.</b></p> <p>Spraying may be carried out before or after sowing or transplanting but 3 days before the crop emerges.</p>
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**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS  
AUTHORISED UNDER APPROPRIATE LEGISLATION**

## **Attachment E: Diquat Review Technical Report**

The Diquat Review Technical Report is published on the APVMA website and is available at the following address  
[www.apvma.gov.au/chemicals-and-products/chemical-review/listing/diquat/diquat-review-technical-report](http://www.apvma.gov.au/chemicals-and-products/chemical-review/listing/diquat/diquat-review-technical-report).