

VICTORY IN HOURS

FAST AND EFFECTIVE CONTROL OF
BROADLEAF WEEDS IN WINTER CEREALS



APTITUDE[®]
HERBICIDE

PRODUCT GUIDE

FMC

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PRODUCT OVERVIEW

A patented synergistic co-formulation of carfentrazone and metribuzin available as water dispersible granule (WDG) and registered for the early post-emergence control of broadleaf weeds in winter cereals.

Aptitude® Herbicide can be applied when cereal crops are between the 3 leaf to early/mid-tillering and weeds are small, generally less than the 6 leaf growth stage and actively growing.

The foliar uptake of Aptitude® Herbicide is rapid. Within a few hours following application, the foliage of susceptible weeds begin to show signs of desiccation with complete necrosis and death of the plant typically occurring 4 to 7 days later.

- ✓ WHEAT
- ✓ BARLEY
- ✓ OATS
- ✓ TRITICALE

- ✓ BEDSTRAW
- ✓ BIFORA
- ✓ CAPEWEED
- ✓ DENSE FLOWER FUMITORY
- ✓ INDIAN HEDGE MUSTARD
- ✓ MARSHMALLOW
- ✓ PRICKLY LETTUCE
- ✓ SHEPHERD'S PURSE
- ✓ SUBTERRANEAN CLOVER
- ✓ TOAD RUSH
- ✓ TURNIP WEED
- ✓ WILD RADISH
- ✓ WILD TURNIP

HOW APTITUDE[®] HERBICIDE WORKS ON WEEDS

Aptitude[®] Herbicide is a fast-acting contact herbicide that controls weeds through a process of membrane disruption and inhibition of photosynthesis at photosystem II.

Carfentrazone-ethyl inhibits a key enzyme (PPO) at a critical step in chlorophyll biosynthesis. This causes a build-up of phytotoxic compounds which damage cell membranes causing cells to rapidly dry out and disintegrate.

Metribuzin inhibits the photosynthetic pathway by blocking a key binding site in the photosystem II pathway disrupting the electron transport system. This causes a build-up of high-energy electrons which damage cell membranes causing leakage, cell collapse and plant death.



A wild radish plant 4 days after application of Aptitude[®] Herbicide.

RESISTANCE MANAGEMENT

GROUP

5

14

HERBICIDE

Aptitude[®] Herbicide contains two effective modes of action being a Group 5 (formerly C) and a Group 14 (formerly G). This combination of a PPO inhibitor with a PS II inhibitor will be an essential tool in the management of those weed populations that have and are developing resistance to various other mode of action groups. This includes the Group 2 ALS herbicides (e.g. Logran*), the Group 4 phenoxy herbicides (e.g MPCA LVE), the Group 12 PDS herbicides (e.g Brodal* Options) and the Group 27 HPPD herbicides (e.g. Frequency*).

When used in an integrated weed management (IWM) program, Aptitude[®] Herbicide will help to control herbicide resistant weeds whilst prolonging the useful life of other herbicide modes of action.

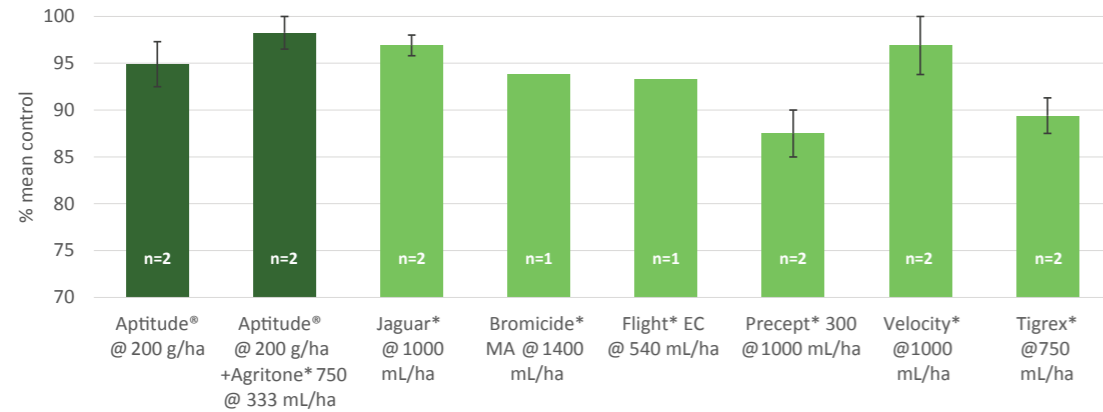
For further information on integrated weed management strategies and the key tools and tactics, go to www.weedsmart.org.au or scan the below QR code



TRIAL RESULTS

WILD RADISH TWO TRIALS, WA & SA

Assessment 28 - 35 DAT

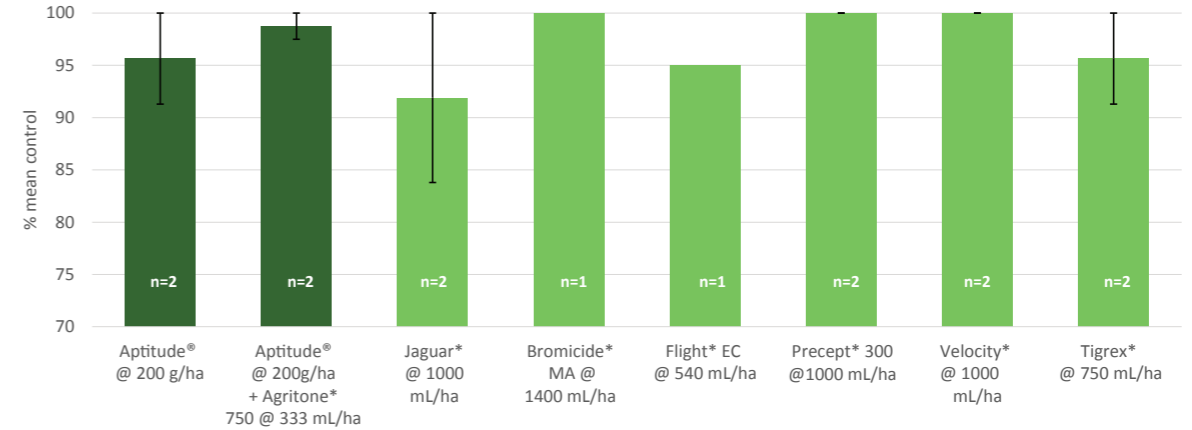


Trial No. 1100648 (Narrogin, WA) in Wheat; Trial No. 120747 (Roseworthy, SA) in Barley.

In these trials Aptitude® Herbicide provided a high level of efficacy, comparable to the market leader for wild radish control, which improved slightly with the addition of MCPA Amine.

INDIAN HEDGE MUSTARD TWO TRIALS, WA & NSW

Assessment 35 - 56 DAT

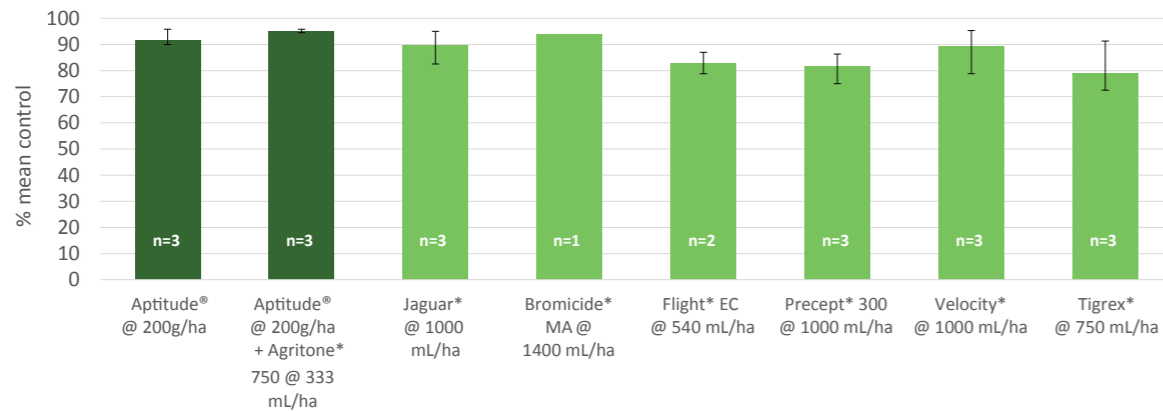


Trial No. 1100645 (Trayning, WA) in Wheat; Trial No. 120755 (Parkes, NSW) in Wheat.

With these two trials on Indian hedge mustard, Aptitude® Herbicide delivered a robust result, comparable to many current commercial standards, which was more reliable with the addition of MCPA Amine and then very comparable to the market leaders.

CAPEWEED THREE WHEAT TRIALS, WA & VIC

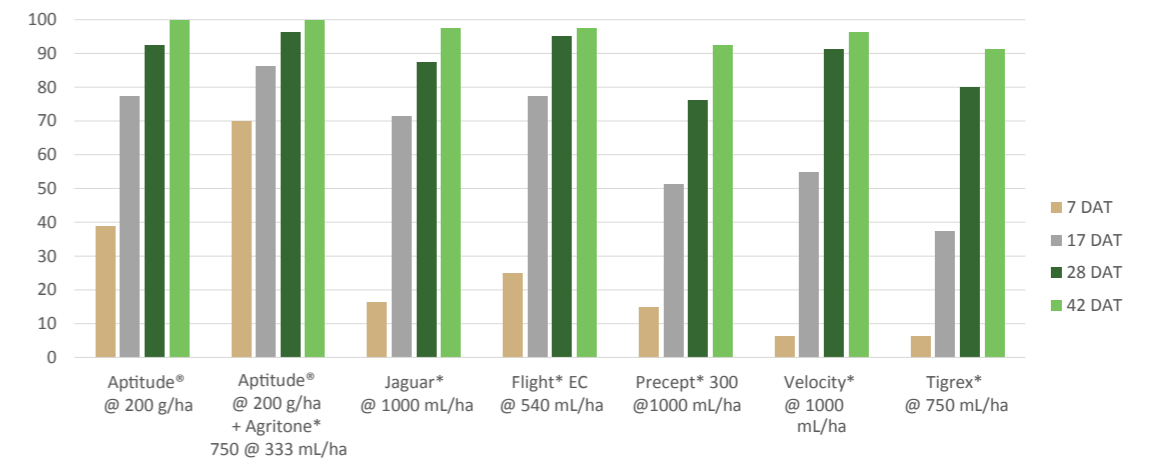
Assessment 28 - 35 DAT



Trial No. 1100648 (Narrogin, WA); Trial No. 120743 (Kojonup, WA); Trial No. 120753 (Bannockburn, Vic).

Aptitude® Herbicide provides very reliable control of capeweed that is equal or better than many existing standards currently available. The addition of MCPA Amine sets a new benchmark for capeweeds control in cereals.

MARSHMALLOW BANNOCKBURN, VIC



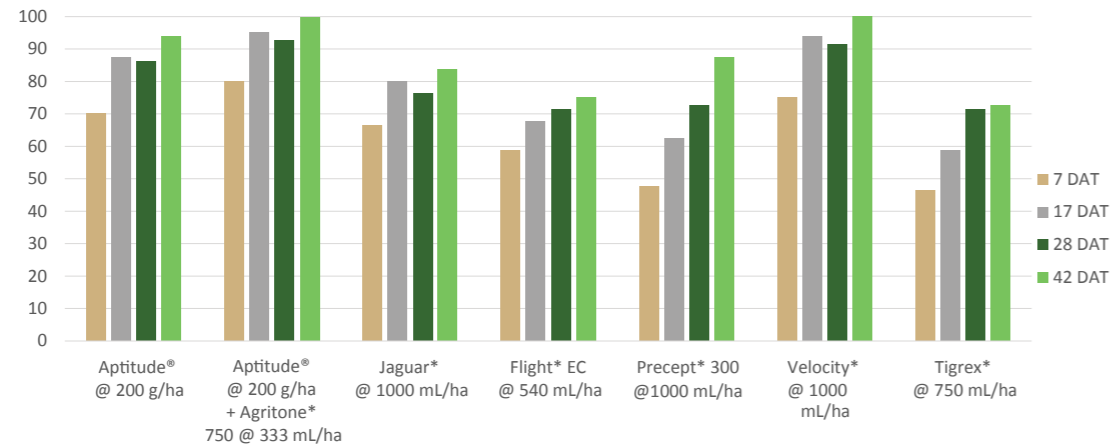
Trial No. 120753. Applied to wheat @ Z21-22; Marshmallow @ 4-6 leaf stage (7 plants/m²); Water rate 100 L/ha

In this trial against Marshmallow, Aptitude® Herbicide not only provided the quickest brown-out with 100% control, it is set to become the new benchmark for the in-crop control of this problematic weed.

CROP SAFETY

When used as directed, Aptitude® Herbicide provides a good level of crop safety which is equal to or better than many current commercial standards.

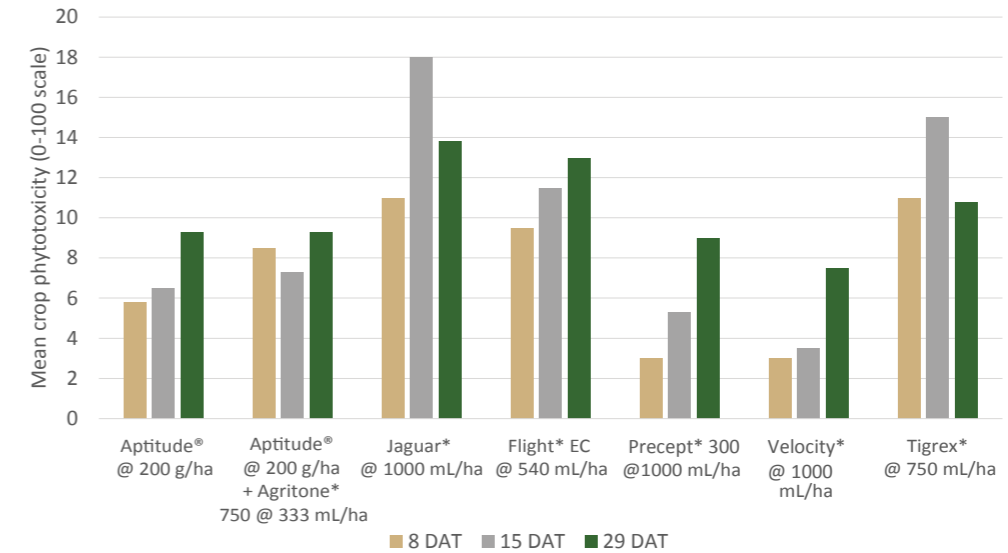
BIFORA ROSEWORTHY, SA



Trial No. 12074. Applied to barley @ Z22; Bifora @ 2-4 leaf stage (13 plants/m²); Water rate 90 L/ha

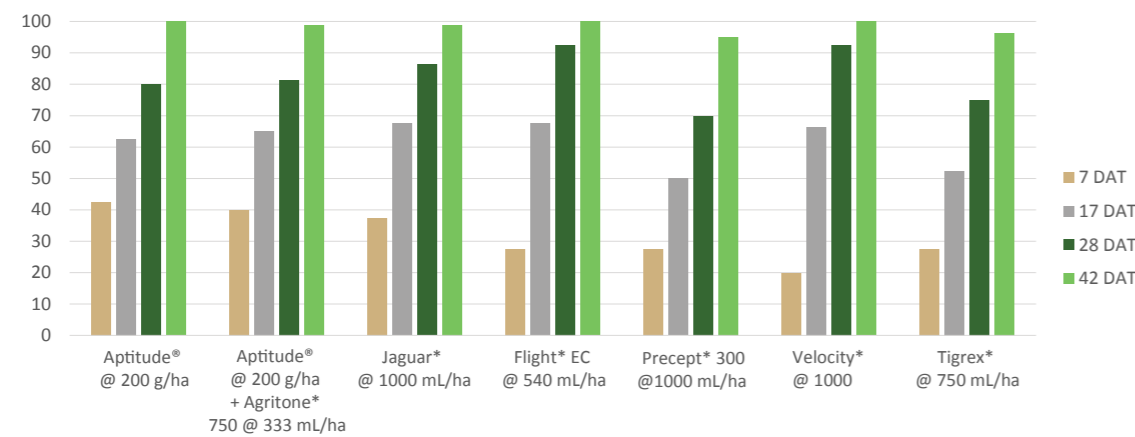
In this trial conducted near Roseworthy, SA where Aptitude® Herbicide stand-alone was already delivering robust control of bifora better than many commercial standards, the addition of MCPA Amine improved control equal to 1.0 L/ha Velocity*.

BARLEY ROSEWORTHY, SA



Trial No: 120747

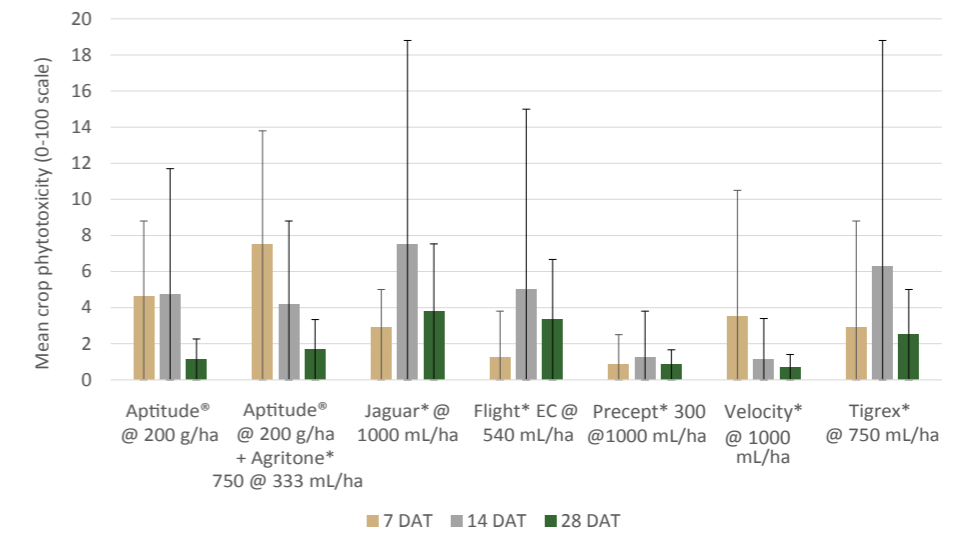
PRICKLY LETTUCE BANNOCKBURN, VIC



Trial No. 12074. Applied to wheat @ Z21-22; Prickly lettuce @ 4-6 leaf stage (6 plants/m²); Water rate 100 L/ha

In above trial at Bannockburn, Victoria, Aptitude® Herbicide stand-alone delivered excellent control of Prickly lettuce, as did all treatments.

WHEAT AVERAGE 3 TRIALS



Trial No. 120747 (Roseworthy, SA); Trial No. 120753 (Bannockburn, Vic); Trial No. 120755 (Parkes, NSW)

In the wheat and barley crop safety trials shown on page 7, at the 28 days after treatment assessment Aptitude® Herbicide was less phytotoxic than those herbicides that contain a PDS inhibitor (e.g. diflufenican), and comparable to the HPPD herbicides such as Precept*.

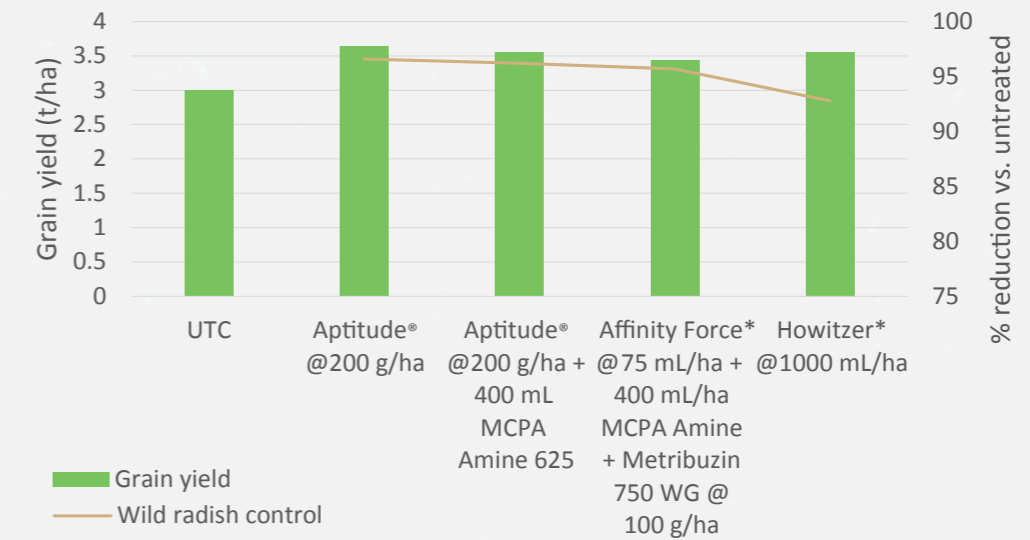
To avoid crop injury, **DO NOT** mix Aptitude® Herbicide with selective grass herbicides. Not only will this mix result in a reduction in grass control, excessive crop injury may occur as a result of the crop oil concentrate or oil / surfactant blends required with the selective grass herbicide. FMC recommend a minimum 10 day interval between the application of Aptitude® Herbicide and a specific grass weed application.

Aptitude® Herbicide contains 375 g/kg metribuzin. Injury from metribuzin can be greater where low light and cloudy weather precedes application. Weather and climate conditions that result in slow growth also slow s-triazine detoxification metabolism in crops.



CROP YIELD

While not statistically different, on a susceptible wild radish population Aptitude® Herbicide provided excellent efficacy with no yield penalty compared to the commercial standard Howitzer*, a three-way combination of diflufenican, bromoxynil and MCPA LVE. In this instance not having to add MCPA Amine to Aptitude® Herbicide will have resulted in an improved gross margin compared to the commercial standard.



Trial: 06HWA22 2022. Applied to wheat @ Z21-23; WR @ 6-8 leaf stage (5 plants/m²). 100 L/ha Airmix 025 Coarse droplets; Final assessment 12 WAA

GETTING THE BEST OUT OF APTITUDE® HERBICIDE



Weather conditions

In the cooler months, better results will be achieved by spraying on a clear sunny day. When spraying in winter, stop 2 hours prior to sunset to allow time for the chemical to be completely absorbed.

Aptitude® Herbicide is rainfast once dry on the leaf. While under fine weather this is usually within one hour of application, you should not spray if a rainfall event is expected within a few hours of application.

Sprayer set-up

Use conventional boom sprayers with either mechanical or by-pass agitation. As a contact herbicide, Aptitude® Herbicide must be applied through properly calibrated spray equipment as thorough coverage is essential.

Aptitude® Herbicide, applied alone or tank mixed with MCPA amine must be applied with nozzles that produce a Coarse spray quality (to ASAE S572 standard). Air induction nozzles are the most suitable nozzle type to produce a Coarse spray quality. The preferred nozzles are Agrotop AirMix or TeeJet AIXR.

DO NOT use air induction (AI) or non-AI nozzles that produce a spray quality of Very Coarse and above to apply Aptitude® Herbicide tank mixed with MCPA amine.

DO NOT use TeeJet TT nozzles as experience has shown inferior control can result.

Always ensure that agitation is continued until spraying is completed even if the sprayer is stopped for brief periods of time.

Keep water rates up (≥ 75 L water / ha). Experience has shown that using a minimum spray volume of 100 L/ha can improve weed control, especially if weed infestation or the canopy is dense.

DO NOT apply Aptitude® Herbicide by aircraft.

Adjuvants

DO NOT add wetters, spray oils or oil/surfactant adjuvants to Aptitude® Herbicide. The addition of wetters, oils and oil/surfactant blends are not required for efficacy and they will greatly increase crop injury without any significant improvement in weed control.

Tank-Mixing

Aptitude® Herbicide may be tank mixed with MCPA (amine formulations only) at a label rate applicable to the growth stage of the cereal (typically 330 mL/ha of a 750 g/L MCPA formulation). Addition of MCPA Amine will improve control where environmental conditions are less than ideal for optimum weed growth or where some weeds may be slightly larger than the specified growth stage.

Only tank mix with bio-compatible products.

To avoid unacceptable crop phytotoxicity **DO NOT** tank mix Aptitude® Herbicide with the following:

✗ MCPA LVE formulations	✗ Ester formulations of other herbicides
✗ Wetters and oil adjuvants	✗ Any EC formulated product (e.g. Arcade®, Boxer Gold®)
✗ Selective grass herbicides (e.g. Atlantis® OD, Axial®, Topik®)	

Application timing

Application should be made to small, actively growing weeds that are free of stress and that are generally less than the 6-leaf growth stage, ideally at the 4-leaf stage.



Sprayer cleanout

Immediately after you have finished spraying highly active materials such as carfentrazone-ethyl, thoroughly clean all spray equipment using the procedure clearly outlined in the Aptitude® Herbicide product label. Where Aptitude® Herbicide has been tank mixed with another product, defer to the more rigorous cleaning procedure.

For cleaning an alkaline detergent e.g. "OMO*" or "SPREE*" at a rate of 100g for every 100L of clean water used or All Clear* DS at label rates will need to be prepared.

DO NOT store the sprayer for any extended period of time, especially overnight, with Aptitude® Herbicide spray solution remaining in the tank, spray lines, spray boom plumbing, spray nozzles or strainers.

Should small quantities of Aptitude® Herbicide remain in inadequately cleaned mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing effects to sensitive crops and other vegetation.

REGISTERED LABEL CLAIMS

Crop	Target Weed	State	Rate g/ha Aptitude® Herbicide	Weed Stage	Critical Comments
Winter cereals (wheat, barley, oats, triticale)	Bedstraw <i>Galium tricornutum</i>	All States	200	1 to 5 whorls	Apply as a post-emergence treatment for the control of small, actively growing weeds. Aptitude® Herbicide may be applied on its own for the control of the weeds listed. For robust control of all listed weeds where environmental and growth conditions are less than ideal for optimum weed growth or some weeds may be larger than the specified growth stage, Aptitude® Herbicide may also be tank mixed with MCPA (amine formulations only) at a label rate applicable to the growth stage of the cereal (typically 330 mL/ha of a 750g/L MCPA formulation).
	Bifora <i>Bifora testiculata</i>			2 leaf to 4 leaf	
	Capeweed <i>Arctotheca calendula</i>			2 leaf to 4 leaf	
	Fumitory (Dense flower) <i>Fumaria densiflora</i>			2 leaf to 4 leaf	
	Indian hedge mustard <i>Sisymbrium orientale</i>			2 leaf to 6 leaf	
	Marshmallow <i>Malva parviflora</i>			2 leaf to 6 leaf	
	Prickly lettuce <i>Lactuca serriola</i>			2 leaf to 4 leaf	
	Shepherd's purse <i>Capsella bursa-pastoris</i>			2 leaf to 6 leaf	
	Subterranean clover <i>Trifolium subterraneum</i>			2 leaf to 4 leaf	
	Toad rush <i>Juncus bufonius</i>			2 leaf to 4 leaf	
	Turnip weed <i>Rapistrum rugosum</i>			2 leaf to 4 leaf	
	Wild radish <i>Raphanus raphanistrum</i>			2 leaf to 4 leaf	
Wild turnip <i>Brassica tournefortii</i>	2 leaf to 6 leaf				

Withholding periods

Grazing: **DO NOT** allow stock to graze treated areas for 14 days after application.

Crop Harvest: Not required when used as directed.

Plant backs

Aptitude® Herbicide does not provide residual activity, therefore no crop rotational restrictions apply when used as directed.

The key features of Aptitude® Herbicide:

- ✓ Weeds stop competing within one day of application
- ✓ Excellent early season activity on a broad range of broadleaf weeds
- ✓ Controls weeds resistant to other herbicide mode of action groups
- ✓ Registered in wheat, barley, oats and triticale
- ✓ No plant back or re-cropping restrictions
- ✓ Rainfast within 1 hour of application

For further details, contact your local FMC representative

Sales		
Angus Wilson	Regional Sales Manager - Northern	0428 783 004
Scott Ariell	Area Business Manager - QLD South West & NSW Northern	0409 961 794
Amy Barnes	Area Business Manager - QLD Central	0400 200 909
Bronwyn Ford	Area Business Manager - QLD South East	0417 648 064
Hugo Graesser	Area Business Manager - NSW Central & Liverpool Plains	0400 400 750
Simonne Read	Regional Sales Manager - Southern	0438 728 240
Emma Sheridan	Area Business Manager - NSW Southern	0400 887 193
Adam Bennett	Area Business Manager - VIC Western	0438 758 804
Matthew White	Area Business Manager - VIC Eastern	0448 037 692
Yan Wu	Area Business Manager - SA Eastern & Tas	0439 426 007
Jock Neumann	Area Business Manager - SA Western	0437 275 293
Derek Burgess	Area Business Manager - WA Northern	0428 643 014
Brian Staines	Area Business Manager - WA Southern	0407 483 941
Nathan Buegge	Area Business Manager - WA Central	0499 275 177
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David Johnson	Technical Services Manager - QLD	0401 140 536
Tim Wright	Technical Services Manager - NSW	0428 634 484
Stephen Fischer	Technical Services Manager - VIC	0427 468 930
Clay Sutton	Technical Services Manager - SA	0400 883 184

This guide is not a substitute for reading the product label. Always read the label before use. Additional information for Aptitude® Herbicide can be found at ag.fmc.com/au

APTITUDE[®]
HERBICIDE

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