

# Aptitude®

## HERBICIDE

## Tech Note

### Benefits of Aptitude

Aptitude® Herbicide is an early post-emergence herbicide for the control of certain broadleaf weeds in winter cereals. Aptitude Herbicide is a fast acting contact herbicide and controls weeds through a process of membrane disruption and inhibition of photosynthesis at photosystem II. It contains 90 g/kg of carfentrazone (Group G) and 375 g/kg of metribuzin (Group C) herbicides.

Features	Benefits
Patented mixture of the highly effective herbicides Carfentrazone (Group G) and Metribuzin (Group C), two diverse herbicidal groups.	<ul style="list-style-type: none"><li>• Groups G and C – excellent rotation tool for areas with multi-herbicide resistance.</li><li>• Excellent early activity on a broad spectrum of broadleaf weeds, stopping competition for valuable moisture crop nutrients in an important “yield determinant” phase of the crop.</li></ul>
New generation of WDG technology	<ul style="list-style-type: none"><li>• Rapid and permanent dispersion when mixed with water, with no residues left to clog lines, filters or nozzles.</li><li>• Dust free and easy to measure.</li><li>• Short rainfast period (1 hour).</li><li>• Flexible with tank mix combinations.</li></ul>
One easy use rate	<ul style="list-style-type: none"><li>• One easy rate to provide control of all major broadleaf weeds in cereals.</li><li>• Low application rate = less packaging.</li></ul>
Designed for maximum crop safety	<ul style="list-style-type: none"><li>• No oils or solvents present in the formulation, drastically reducing risk of phytotoxicity.</li></ul>
Limited soil activity	<ul style="list-style-type: none"><li>• No plant-back issues or cropping restrictions on the label.</li></ul>
Packaging in a 15 L bucket	<ul style="list-style-type: none"><li>• Sturdy and recyclable.</li></ul>

### Timing and Conditions

Application should be made to small, actively growing weeds generally less than 6 leaf in stage. Ideally, crops should be at the 3 leaf to early/mid tillering stage (Zadok's code 13 to 25), prior to crop canopy closure. As Aptitude Herbicide is a contact herbicide, best control is achieved when weeds are exposed and are not shielded by other weeds and/or the crop. Subsequent weed germinations will not be controlled.

Extremes in environmental conditions, such as temperature and moisture, soil conditions and/or cultural practices may affect the activity of Aptitude Herbicide. Under warm moist conditions, herbicide symptoms may be accelerated. Under very dry conditions, the expression of herbicidal symptoms is delayed. Weeds hardened off by drought are less susceptible to Aptitude Herbicide.

Due to environmental conditions and certain spray tank additives, some herbicidal symptoms may appear on the crop in the form of leaf spotting. However, the crop recovers quickly, usually within two to three weeks of treatment.

## Crop Registrations and Weeds Controlled / Directions for Use

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	General 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. 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 750 g/L MCPA formulation) 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.  Refer to General Instructions and Compatibility directions for further application details.
	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	

**Restraints:**

DO NOT tank mix Aptitude Herbicide with any wetter, crop oil concentrates or blended oil/surfactant adjuvants (See compatibility section).

DO NOT tank mix Aptitude Herbicide treatments with selective grass herbicides.

DO NOT apply Aptitude Herbicide before the three leaf stage of cereals.

DO NOT apply to cereals under sown with legumes.

DO NOT apply Aptitude Herbicide to winter cereals by aircraft.

**WITHHOLDING PERIODS**

**Grazing: DO NOT ALLOW STOCK TO GRAZE TREATED AREAS FOR 14 DAYS AFTER APPLICATION.**

**Crop Harvest: NOT REQUIRED WHEN USED AS DIRECTED.**

## Compatibility

Winter cereals: when Aptitude Herbicide is optionally tank mixed with MCPA it should always be tank mixed with formulations of MCPA amine (750 or 500g/L). MCPA can be used where some of the weeds present are larger than the maximum growth stage specified on the label or where growth conditions are less conducive to expression of herbicide activity.

Do not tank mix Aptitude Herbicide with MCPA LVE formulations or ester formulations of other herbicides or with wetters and oil adjuvants, as excessive crop injury may occur.

Aptitude Herbicide is compatible with MCPA 750 Selective Herbicide, FMC Clopyralid 300 Herbicide, FMC Dicamba 500 Herbicide, Cadence<sup>®</sup> and EDTA chelate formulations of trace elements e.g. Supa Copper, Supa Mang and Supa Zinc from Agrichem Manufacturing.

Physical compatibility has been confirmed with the herbicides 2,4-D Amine 625 and Bromoxynil 200, the insecticides Dominex<sup>®</sup> Duo, Lemat<sup>®</sup> 290SL and Danadim<sup>®</sup> 400EC and the fungicides Propiconazole 250EC, Epoxiconazole 125SC and Tebuconazole 430SC. However, FMC cannot guarantee crop safety of these mixes. Crop safety is influenced by many external factors (plant variety, plant stress, climatic conditions, application timing quality of other mixing partners etc) and each of these factors either in combination or individually has the potential to increase crop damage. Therefore, FMC advises caution when considering mixing other products with Aptitude and warnings or advice on mixing partners should be strongly considered.

Mixes with Chlorpyrifos 500 EC, Crusader<sup>®</sup> and Atlantis<sup>®</sup> may cause unacceptable crop safety.

## Annual Grass (Wild Oat, Ryegrass etc.) Control

Aptitude Herbicide should not be mixed with selective grass herbicides as grass weed control is significantly reduced and excessive crop injury may occur. Increased crop injury is caused by the crop oil concentrates and oil/surfactant blends used with these grass herbicides. Instead, allow a 10 to 14 day interval between broadleaf and grass herbicide applications.

## Surfactant/ Wetting Agents/ Oil Adjuvants

Do not add wetters, spray oils or oil/surfactant adjuvants to Aptitude Herbicide. The addition of wetters, oils and oil/surfactant blends will greatly increase crop injury without any significant improvement in weed control.

## Mixing

Add half the required volume of water to spray tank and start agitation and then add the measured amount of Aptitude Herbicide. Where MCPA is tank mixed with Aptitude Herbicide add the required volume of MCPA amine next, then add the buffering agent if required and then the balance of water to the tank. Maintain good agitation at all times until spraying is completed.

The spray solution can be buffered to within the range of pH 5 to pH 8. Do not use with tank additives that alter the pH of the spray solution below pH 5 or above pH 8 or that contain surfactants.

## Application

Apply Aptitude Herbicide as a broadcast application. Use conventional boom sprayers with either mechanical or by-pass agitation. Spray equipment should be properly calibrated to ensure correct application. Use a spray volume of 50 to 150 L/ha. Experience has shown that using a minimum spray volume of 100L/ha can improve weed control. Use a minimum of 100 L/ha if weed infestation is heavy or the crop cover is dense and this volume is highly recommended when using the preferred Air Induction (AI) nozzles.

Aptitude Herbicide optionally tank mixed with MCPA amine must be applied with nozzles that produce a Coarse spray quality (to ASAE S572 standard) due to the MCPA component. 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. Single orifice or twin orifice flat fan nozzles can be used, provided they meet the above specifications.

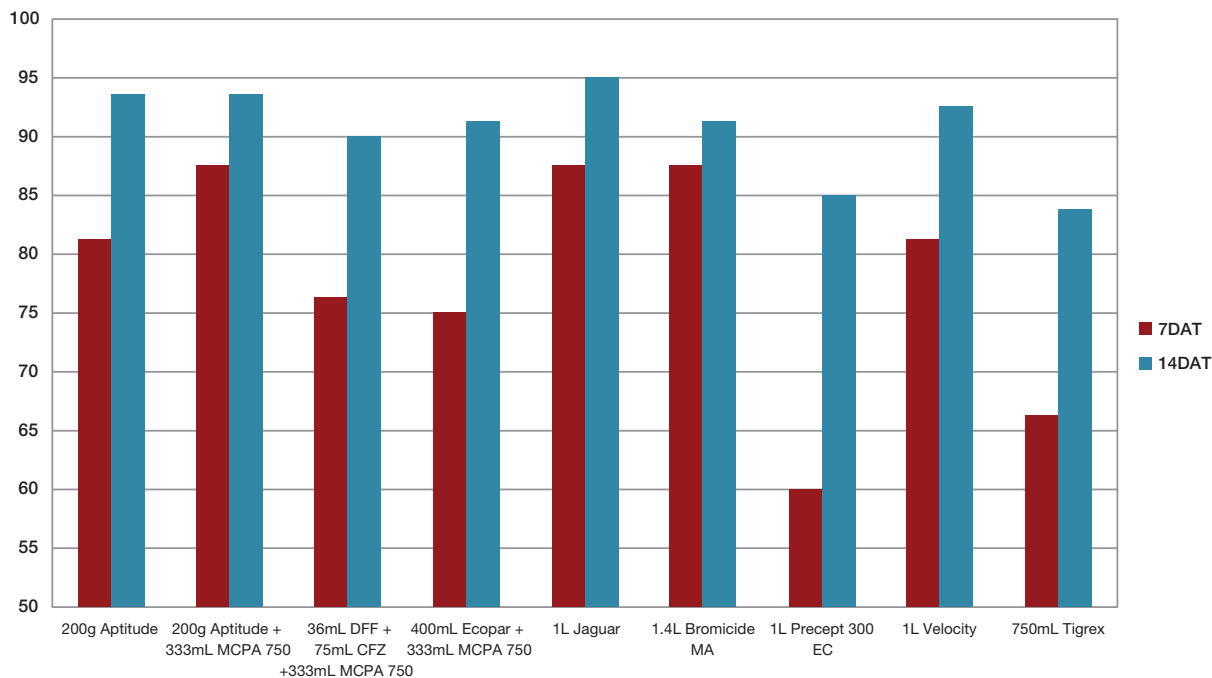
Do not use floodjet, boomless jets or misters or controlled droplet application equipment.

Do not apply Aptitude Herbicide by aircraft.

## Trial results

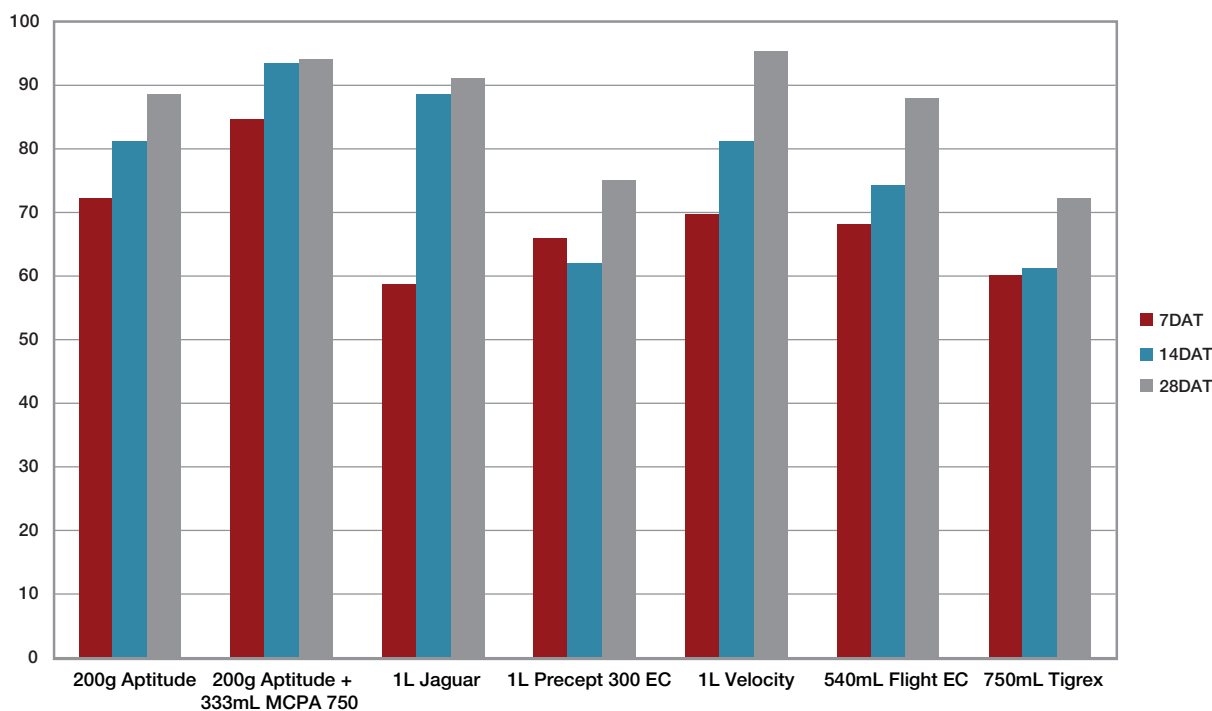
### WILD RADISH (*Raphanus raphanistrum*)

% Mean efficacy of Aptitude against Wild Radish control  
WA 2011



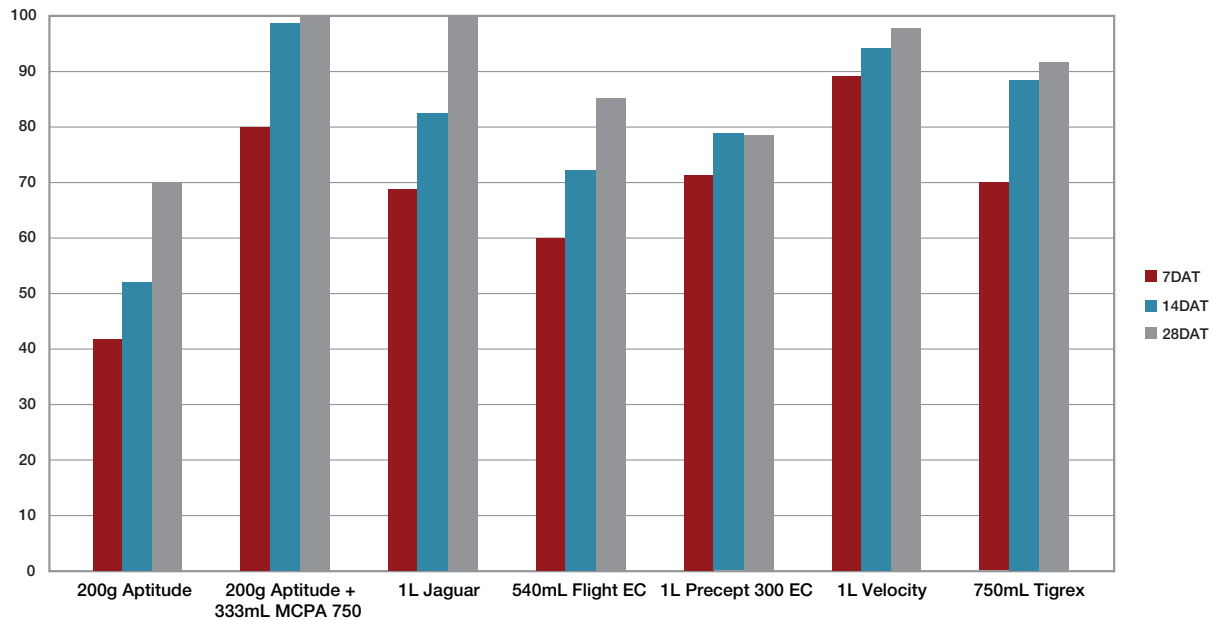
### CAPEWEED (*Arctotheca calendula*)

% Mean efficacy of Aptitude against Capeweed  
WA 2012



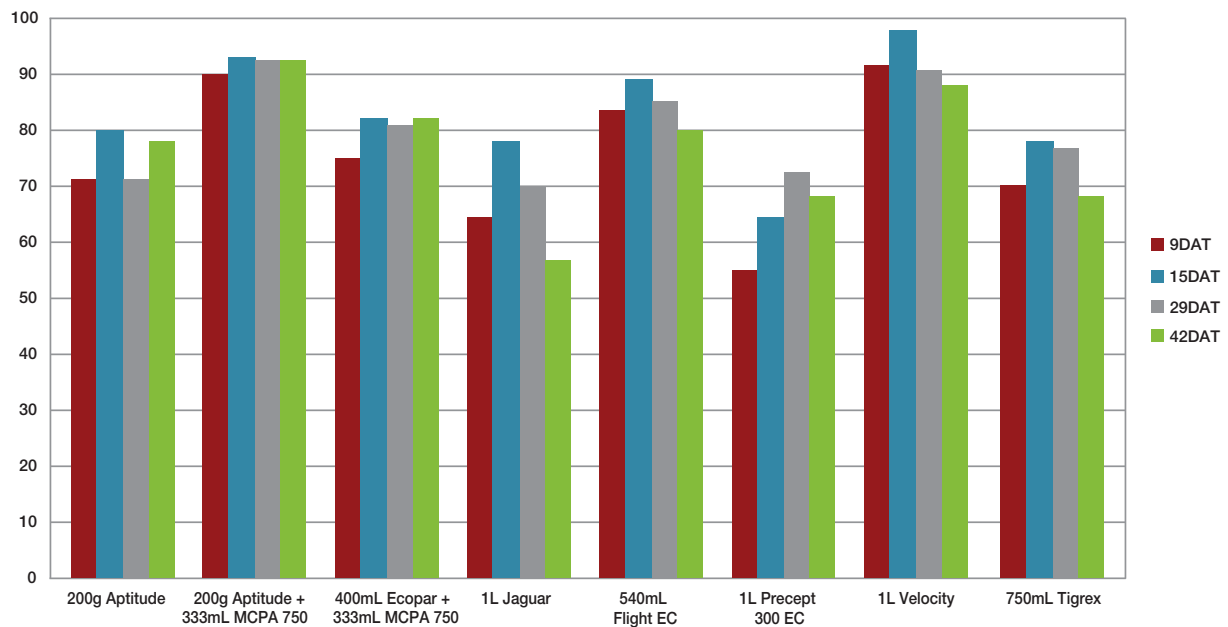
## FUMITORY (DENSE FLOWER) *Fumaria densiflora*

% Mean efficacy of Aptitude against Fumitory  
SA 2012



## BEDSTRAW (*Galium tricornutum*)

Mean % control of Bedstraw (22 plants/m<sup>2</sup>) in wheat  
SA 2012



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