THE KEY BENEFITS OF VELOCITY

- Fast, robust control of susceptible and resistant wild radish and other 'tough' broadleaf weeds.
- Excellent crop safety from the 2-leaf stage when used as directed.
- Early application can improve yield and profitability.
- Potential to extend the usefulness of less effective products as follow-up sprays.

So don't wear out a single solution

It's all too easy to ignore increasing herbicide resistance until it's too late. But resistance is real, and now affecting every cropping area in Australia. Using different modes of action in rotation and using non-chemical weed control methods is essential to help keep your existing herbicides viable longer. Visit our website to review your options.

diversitycantwait.com.au

Bayer CropScience

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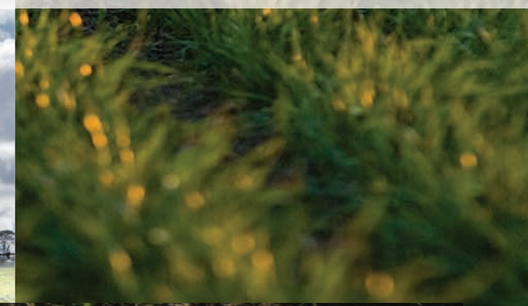
BAYER

VELOCITY®

VELOCITY® SELECTIVE HERBICIDE

PRODUCT GUIDE

Early clean-up of problem broadleaf weeds to protect crop yields



Bayer CropScience

INDEX

GIVE YOUR CROP A CLEAN START

WHAT VELOCITY CAN DO

Control a wide range of broadleaf weeds, including:

- ✔ BEDSTRAW
- ✔ BIFORA
- ✔ BINDWEED
- ✔ CAPEWEED
- ✔ CORN GROMWELL
- ✔ DEADNETTLE
- ✔ DOUBLEGEE/ SPINY EMEX
- ✔ FUMITORY
- ✔ INDIAN HEDGE MUSTARD
- ✔ PATERSON'S CURSE
- ✔ PRICKLY LETTUCE
- ✔ SAFFRON THISTLE
- ✔ SHEPHERD'S PURSE
- ✔ ANNUAL SOWTHISTLE
- ✔ TURNIP WEED
- ✔ WILD RADISH
- ✔ WILD TURNIP
- ✔ WIREWEED
- ✔ YELLOW BURRWEED

Control volunteers, including:

- ✔ LUPINS
- ✔ FIELD PEAS
- ✔ CANOLA
- ✔ SEEDLING LUCERNE
- ✔ FABA BEANS
- ✔ CHICKPEAS (SUPPRESSION ONLY)
- ✔ VETCH (SUPPRESSION ONLY)
- ✔ LENTILS (SUPPRESSION ONLY)

In four cereal crops:

✓ WHEAT ✓ BARLEY ✓ CEREAL RYE ✓ TRITICALE

Velocity can be applied from the 2-leaf crop stage to provide a range of important advantages:

- **Very early and robust control of wild radish,**
  including populations that have developed resistance to Group B, F and I herbicides.
- **Proven extra yield and profit**
  compared to using other broadleaf herbicides as the first spray.
- **No 'yield drag',**
  because the crop is not held back by this early spray.
- **Fewer weed escapes to compete with the crop**
  and compromise future weed control.
- **Extended usefulness for less effective, older products**
  when used as follow-up sprays once weed pressure is lower.

RESISTANCE MANAGEMENT

GROUP **H** **C** HERBICIDE

With its two active ingredients, Velocity is both a Group H (HPPDs) and a Group C (PS II inhibitors) herbicide.

Pyrasulfotole is proving to be an effective tool in the management of broadleaf weed populations that are resistant to various modes of action, including the Group B ALS inhibitors (e.g. sulfonylureas, like triasulfuron, chlorsulfuron & metsulfuron), Group F PDS inhibitors (e.g. diflufenican & picolinafen), Group I synthetic auxins (e.g. MCPA, 2,4-D) and Group C PS II inhibitors (metribuzin). When used in conjunction with Integrated Weed Management (IWM) practices, pyrasulfotole (e.g. Velocity) will continue to help control herbicide-resistant broadleaf weeds.

MANAGING RESISTANCE AND CONTROLLING ‘TOUGH’ WILD RADISH

Wild radish tolerance to various herbicide groups is now a major management issue for many grain growers. Whether herbicide resistance is established or still just developing, it is important to use Velocity strategically, which means:

1. Use Velocity early.

Early application delivers the best possible control, minimises escapes and reduces seed-set.

2. Make sure you get complete spray coverage.

Use the right equipment, appropriate product application rates and water volumes – all the details are on page 9 and 10.

3. Don’t become too reliant on Velocity.

Keep other products in the rotation. Spraying Velocity early will reduce weed pressure so that old chemistry can continue to provide adequate control as a follow-up spray.

4. Never regard Velocity as a ‘last resort’.

Delaying the use of the most effective products compromises control at every stage and can accelerate resistance development. ‘Saving the best till last’ can be very costly.

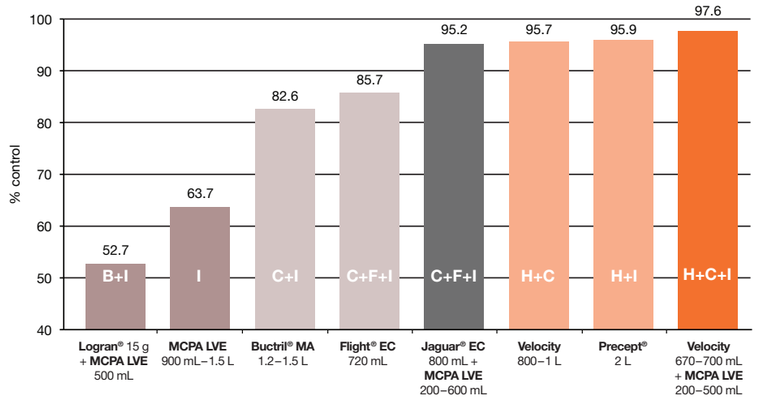
CONTROLLING RESISTANT WILD RADISH

Clearly superior control.

A summary of all Bayer CropScience treatments in north, central and southern WA regions in 2011–2012 showed an average 45% better control with Velocity-based applications on Group B, F and I resistant radish populations compared to the poorest performing chemical products.

Trial ID: HP12AUSBV1WE20; HP12AUSBV2WE21; HP12AUSBV2WE22; HP12AUSBV3WE23; HP12AUSBV5WE25; HP12AUSBV6WE26; HP12AUSBV6WE27; HP12AUSBV7WE28; HP12AUSBV8WE29; 12WC08; 12WC11; 12WC11; 12WC15; 12WC17; 12WC12; 12WC04; 12WC05; 12WC06; 12WC07; 12WC13; 12WC09; 12WC10; 12WC14.)

All rates per hectare.



THE VALUE OF EARLY APPLICATION

Applying Velocity early has multiple advantages. Trials show that Velocity typically achieves better levels of control than other products, and that extra early reduction in weed competition results in higher yields.

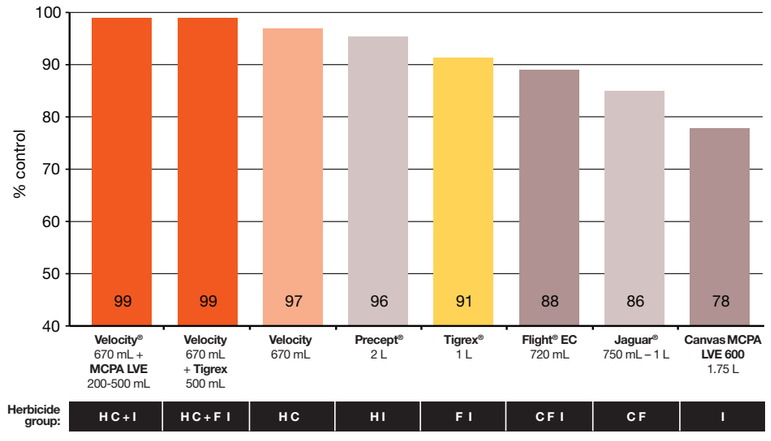
COMPARATIVE CONTROL AT EARLY TIMINGS

Excellent levels of wild radish control.

If you have the opportunity to achieve 97–99% control of wild radish, why wait and risk losing it? This summary of 2012 and 2013 trials comparing a range of products at the same early spray timings shows that all three Velocity treatments produced superior control to any other product or combination.

Trial ID: Bayer Application Trials 12WE20, 12WE21, 12WE22, 12WE23, 12WE25, 12WE26, 13WE27, 13WE29, 13WC03, 13WC04, 12WC12, 12WC13.

All rates per hectare.

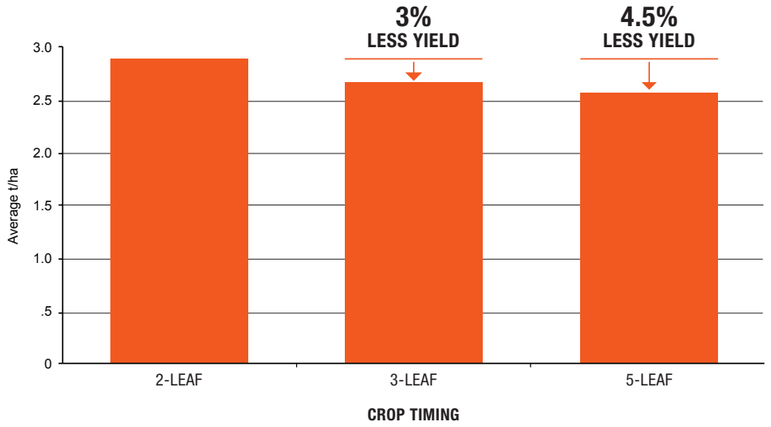


YIELD LOST BY DELAYED APPLICATION

Delaying your spraying can be very costly.

As this graph based on a 2013 trial shows, even a short delay in spraying wild radish can result in less yield. Waiting to spray compromises the level of control and allows more wild radish plants to compete with the crop for longer than if they were controlled earlier. Previous work by the Australian Department of Agriculture has shown that early spraying provides the best grain yield response. The differences are not statistically significant in this trial but do follow the known trends for early spraying.

Trial ID: Bayer Application Trial 38MIG13.



‘VELOCITY FIRST’ YIELD BENEFITS

In areas where wild radish is a major problem, most growers use two post-emergent sprays to control it. Velocity alone does not control secondary wild radish emergence, but even products that can provide residual activity (e.g. Jaguar) will also require a two-spray strategy in severe wild radish populations. Experience and trial data show that using Velocity for the first spray – at an early timing – delivers the best results almost no matter which broadleaf herbicide is applied later.

In three trials in 2010–2011, an early first spray with either Jaguar or Velocity was compared against no early spray, and later sprays with the eight different options listed here:

A. Early sprays

1. Jaguar 1 L

2. Velocity 800 mL/ha

3. Nil

B. Later sprays

1. Velocity 670 mL + Hasten™ 1%

2. Velocity 1 L + Hasten 1%

3. Velocity 670 mL + **Agritone® LVE** + Hasten 1%

4. Velocity 670 mL + **Tigrex 500 mL** + Hasten 1%

5. Precept 150 1.5-2 L + Hasten 1%

6. Tigrex 1 L

7. Jaguar 1 L

8. Jaguar 750 mL + **Agritone LVE** 350 mL

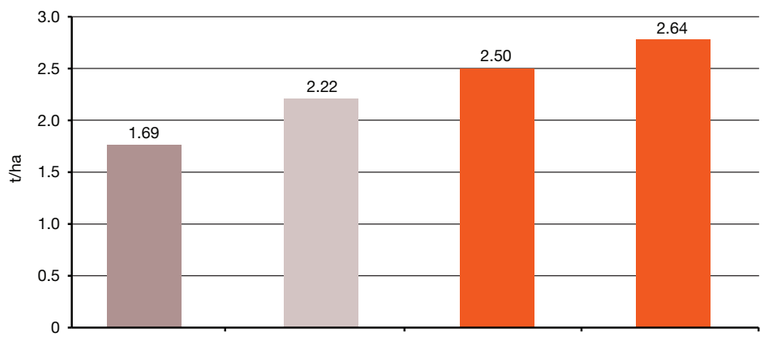
Using Velocity first boosts yield.

The eight different treatment combinations using Velocity produced a mean yield more than 10% higher than the mean yield of the same eight treatments following a first application with Jaguar.

* Spray B applications were: Untreated or from the list of B sprays above.

All rates per hectare.

Trial ID: 11WE05, 10WC11, 11WE06.



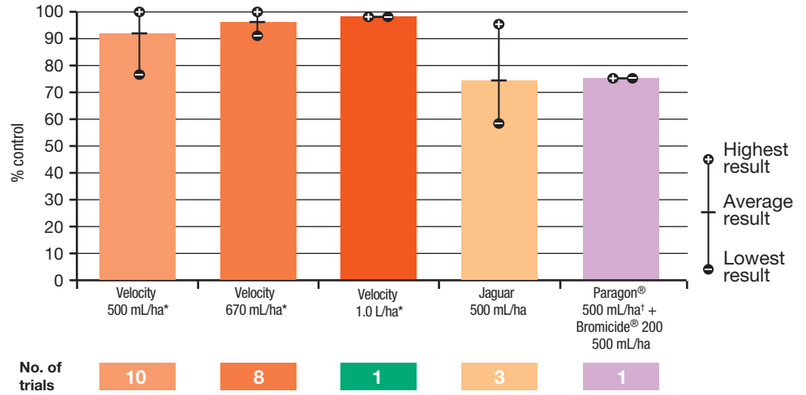
Spray A:	No spray	No spray	**Jaguar** (1.0 L/ha)	**Velocity** (800 mL/ha)
+ Spray B:	+ No spray	+ Various*	+ Various*	+ Various*

OTHER REPRESENTATIVE TRIAL RESULTS

DOUBLEGEE/SPINY EMEX

The standard of consistent control.

Velocity provides consistent results on this often hard-to-control weed.



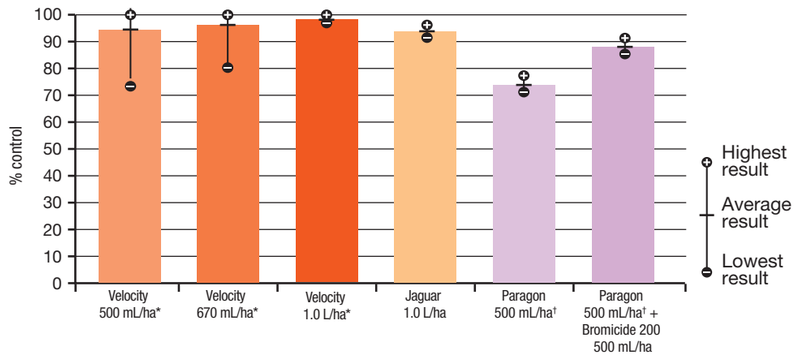
Trial ID: 04WA07, 04WB09, 05WA01, 05WA11, 07WA03, 07WA04, 07WB09, 07WC07, 08WC06, 09WE06.

* Hasten 1% v/v † Suppression only.

VOLUNTEER LUPINS

Controls a wide range of volunteer legumes.

Velocity provides consistent control of volunteer lupins, field peas and faba beans.



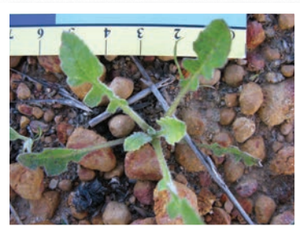
Trial ID: 04WB09, 04WB10, 05SA03, 05SA05, 05VB05, 05WA09, 05WB16, 06SA04, 06WA01, 06WA04, 07SA10, 07SA14, 07VA22, 07WA06, 09WE06, 10WE12, 10WE13.

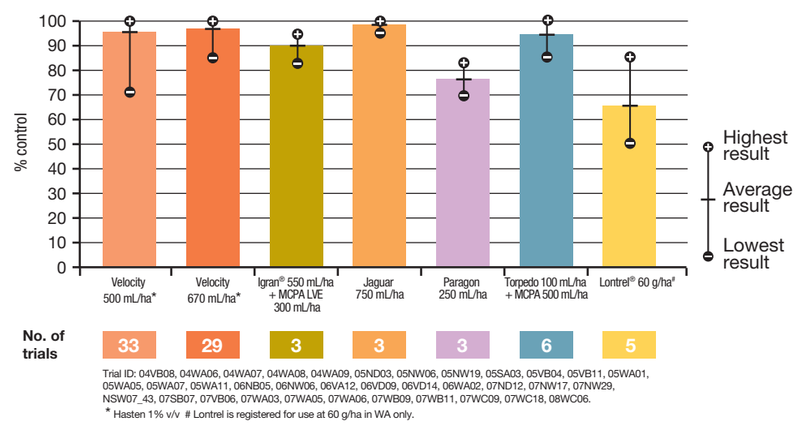
* Hasten 1% v/v † Suppression only.

CAPEWEED

Outstandingly robust control.

Capeweed is another ‘problem weed’ on which Velocity provides exceptionally robust control.





Trial ID: 04WB08, 04WA06, 04WA07, 04WA08, 04WA09, 05ND03, 05NW06, 05NW19, 05SA03, 05VB04, 05VB11, 05WA01, 05WA05, 05WA07, 05WA11, 06NB05, 06NW06, 06VA12, 06VD09, 06VD14, 06WA02, 07ND12, 07NW17, 07NW29, NSW07_43, 07SB07, 07VB06, 07WA03, 07WA05, 07WA06, 07WB09, 07WB11, 07WC09, 07WC18, 08WC06.

* Hasten 1% v/v # Lontrel is registered for use at 60 g/ha in WA only.

GETTING THE MOST OUT OF VELOCITY

Using Velocity early, especially as the first product in a 2-spray strategy, gives it every chance of succeeding. But it is also important to make sure you get full value from your investment in Velocity by following the application guidelines, which are based on years of trial work.

SUCCESSFUL APPLICATION

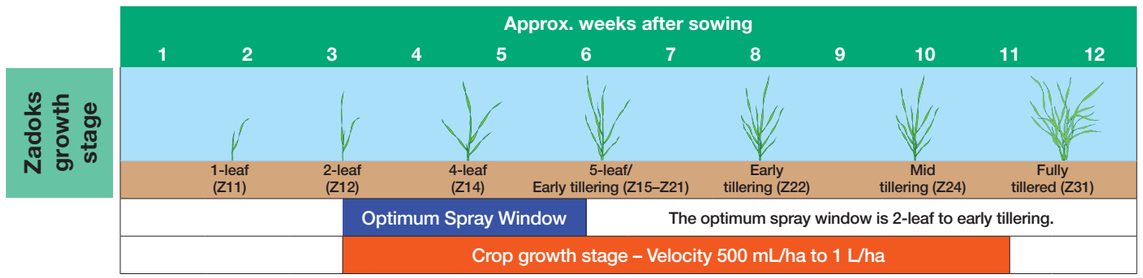
Time of day

Because Velocity performs best in warmer temperatures with good light intensity, it should be applied **during the day and at least 1 hour before sunset** – especially if low overnight temperatures are expected.

Adjuvants

When applying Velocity alone (without a tank-mix partner), one of the following crop oils must be used: Hasten (1% v/v), Uptake® (0.5% v/v) or Supercharge® (0.75% v/v).

Velocity – optimum crop stage timeline



The addition of MCPA LVE to Velocity may assist in increasing control on heavy weed densities or other factors that reduce herbicide coverage on weeds, such as dense crop or stubble. Note that MCPA can only be used from the 3-leaf stage of the crop.

Refer to the product label for full details on the use of adjuvants.

THE BENEFITS OF SPRAYING EARLY

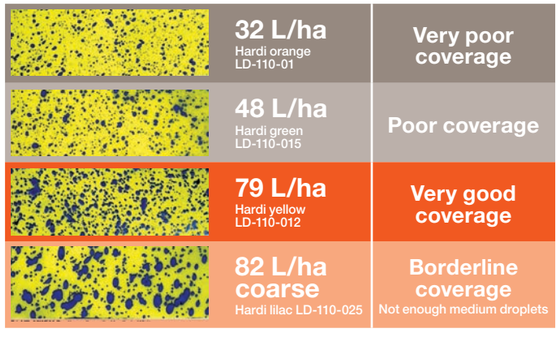
Smaller weeds = better coverage
= lower rates + better control
= higher yield + extra profit

SPRAY QUALITY, WATER RATES AND EFFICACY

Increasing water rates from 50 L/ha to 80 L/ha can increase control when a medium spray quality is used.

However, increasing water rates is inefficient if spray quality is not maintained. Coarse droplets can reduce control even at the higher rate of 80 L/ha when compared to a medium spray quality.

When heavy weed densities make it hard to achieve adequate coverage, the addition of MCPA LVE to Velocity can help with translocation of the active to improve control.



Spray set-up

Velocity must be applied with properly calibrated spray equipment because thorough coverage is essential.

- Use a standard low boom sprayer fitted with by-pass or mechanical agitation.
- Apply using a MEDIUM spray quality under the ASABE S572 standard or the BCPC guideline.
- Apply in 50–150 L water/ha for younger or relatively sparse weeds and 70–150 L water/ha for older weeds (over 4-leaf at application), heavy weed density (>75/m^2) or a heavy crop canopy.
- Always use a recommended adjuvant or crop oil.

DO NOT apply Velocity by aircraft.

Restraints

DO NOT use if rainfall or irrigation is to occur within 2 hours of application.

DO NOT apply to frost-affected weeds or if frosts are imminent.

DO NOT apply without adjuvant/crop oil.

REFER TO THE VELOCITY LABEL FOR DETAILS OF THE MANDATORY DOWNWIND NO-SPRAY ZONES BEFORE APPLYING.

GETTING THE RATES RIGHT

The potential for achieving complete spray coverage on target weeds plays a key part in choosing effective application rates and water volumes. Use this table as a guide to appropriate rates, but always read the label for full instructions.

Complete coverage + less than 75 weeds/m^2

Weed stage	Velocity rate/ha	Water rate/ha
2-leaf	500–670 mL	50–150 L
4-leaf	500–800 mL	70–150 L
6-leaf	670 mL–1.0 L	
8-leaf		

Complete coverage =
when spraying conditions are such that many spray droplets hit all parts of **every target weed**, including the rosette centres and leaves.

Partial coverage OR more than 75 weeds/m^2

Weed stage	Velocity rate/ha	Water rate/ha
2-leaf	670 mL–1.0 L	50–150 L
4-leaf	670 mL–1.0 L **OR** 500–800 mL + 440 mL MCPA LVE (570 g/L)*	80–150 L
6-leaf		
8-leaf		90–150 L

Partial coverage =
when weeds, crop, stubble or other material shade the target weeds, preventing spray from reaching all parts of the weed leaves and rosettes.

* The addition of MCPA LVE or increased water rates will improve reliability of control in situations where complete spray coverage cannot be achieved. For best results always use a rate that will control the largest weeds present.

RE-CROPPING INTERVALS

These are the label recommendations for minimum re-cropping intervals. Re-cropping intervals may need to be extended in the event of low rainfall (less than 250 mm for winter crops; less than 300 mm for summer crops) or very patchy rainfall.

Application to soils with a pH greater than 8.4 (soil in water) has not been tested and is not recommended. Re-cropping intervals may be reduced on acid soils (pH <7).

Crop – Winter-sown	Velocity rate applied	Rainfall	Re-cropping interval
Wheat, barley, oats, triticale	1.0 L/ha	Not stipulated	3 weeks
Canola, clover*, chick peas, faba beans*, field peas, lentils*, lucerne, lupins, vetch	670 mL/ha	At least 250 mm	9 months
Alkaline or neutral soils; canola, chick peas, field peas, lucerne, lupins, vetch	1.0 L/ha**		
Acid soils (pH<6.5 in water, pH<6.0 in $CaCl_2$); canola, chick peas, clover, faba beans, field peas, lentils, lucerne, lupins, medic, vetch	1.0 L/ha		
Alkaline or neutral soils; lentils, medic Note: On soils with free limestone do not use Velocity above 670 mL/ha unless substantial biomass reduction (medic) or discolouration (lentils, medic) is accepted in areas of boom overlap.	1.0 L/ha (see note in Crop column)	At least 500 mm	21 months

For winter re-cropping, transient biomass reduction or discolouration may occur where re-cropped following Velocity application. When used as directed grain yield is not compromised where transient biomass reduction or discolouration occurs.

* Where Velocity at 670 mL/ha is applied on alkaline soils, re-cropping areas that receive double rates (boom overlaps) may show increased symptoms of damage in crops such as clover, faba beans and lentils. This is generally restricted to discolouration (bleaching) of the crop but may also result in biomass reduction or reduced yields in some situations.

**Where Velocity at 1.0 L/ha is applied on alkaline soils, re-cropping areas that receive double rates (boom overlaps) may show increased symptoms of damage in crops such as canola, field peas, lentils, lupins, medic and vetch. This is generally restricted to discolouration (bleaching) of the crop but may also result in biomass reduction or reduced yields in some situations.

Crop – Summer-sown	Velocity rate applied	Rainfall	Re-cropping interval
Maize, sorghum	Up to 1.0 L/ha	Not stipulated	8 weeks
Cotton, soybeans, sunflower	Up to 670 mL/ha	At least 300 mm	14 months
Mung beans	Up to 1.0 L/ha***		14 months
Cotton, soybeans, sunflower	Up to 1.0 L/ha***	At least 500 mm	14 months

For summer re-cropping, transient biomass reduction or discolouration may occur where re-cropped after Velocity application. When used as directed grain yield is not compromised where transient biomass reduction or discolouration occurs.

***Where Velocity at 1.0 L/ha is applied, re-cropping areas that receive double rates (boom overlaps) may show increased symptoms of damage. This is generally restricted to discolouration (bleaching) of the crop but may also result in biomass reduction in some situations.

TANK-MIXING VELOCITY

Compatible herbicides & adjuvant recommendations

For added grass weed control:

Achieve®	+ Supercharge 0.75% v/v
Atlantis® OD	+ Hasten 1% v/v
Axial®	+ Adigor® 0.5% v/v
Cheetah® Gold	+ Hasten 1% v/v or Uptake 0.5% v/v
Decision®	+ Hasten 1% v/v or Uptake 0.5% v/v
Hussar® OD	+ Hasten 1% v/v
Topik®	+ Hasten 0.5% v/v or Uptake 0.5% v/v

For added broadleaf weed control:

Ally®	5 g/ha + Hasten 1% v/v
Hussar® OD	Label rates + Hasten 1% v/v
Lontrel® 750 SG	Label rates + Hasten 1% v/v
MCPA LVE	up to 500 mL/ha + Hasten 1% v/v
Tigrex®*	up to 500 mL/ha + Hasten 1% v/v

* Increase in crop effect may be observed.

Insecticides & fungicides

Velocity is physically compatible with the following insecticides and fungicides. These products have not been tested for biological compatibility.

Insecticide and rate:	
Omethoate	Label rates
Fastac® Duo	240 mL/ha
Decis Options®	Label rates
Dimethoate	85 mL/ha
Lorsban® 500 EC	900 mL/ha

Fungicide and rate:	
Prosaro® 420 SC	Label rates
Folicur® 430 SC	Label rates
Amistar® Extra^	up to 800 mL/ha
Tilt® Extra	500 mL/ha
Opus® 125 EC	500 mL/ha

^ Constant agitation required.

Withholding periods

Harvest: Not required when used as directed.
Grazing/Stockfood: DO NOT graze or cut for stockfood for 6 weeks after application.

Refer to the current product label for full details