

# POISON

KEEP OUT OF REACH OF CHILDREN  
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

# Grindstone®

## Herbicide

ACTIVE CONSTITUENT:

## 240 g/L AMINOPYRALID

present as the triisopropanolamine salt.

GROUP

4

HERBICIDE

Crop: Cereals, Pasture, Fallow, Forestry and other non-crop situations

Controls or Suppresses: A range of broadleaf weeds and noxious woody weeds as per the Directions for Use.

Formulation type

Soluble  
Concentrate

SL



# ADAMA

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CONTENTS: 1 L - 1000 L

### RESTRAINTS

**DO NOT** apply to crops or weeds which are not actively growing or to plants which may be stressed due to prolonged periods of extreme cold, moisture stress (water-logged or drought affected) or previous herbicide treatment, as crop damage or reduced levels of control may result.

**When treatment is followed by a severe stress such as drought, prolonged cold, waterlogging or frost condition, growth retardation may occur.** Crops normally recover without loss of yield. Disease, nematode or insect damage after application may also result in crop injury.

**DO NOT** spray if rain is likely to occur within one hour or if foliage is wet from rain or dew or if heavy rain is likely to occur within 48 hours.

**DO NOT** burn off, cut or clear blackberry or other woody weeds for at least 6 months after spraying.

**AVOID** double overlaps to reduce risk of injury to rotational crops the following season.

**DO NOT** sow susceptible crops into paddocks treated the previous season until after the required plantback period has elapsed – see GENERAL INSTRUCTIONS.

In areas prone to flooding treatment should commence after any annual flooding, as such areas flooded within 9 months following application may have reduced results.

For tank mixtures with Flagship™ 400 EC only:

**DO NOT** apply by boom sprayer with droplets smaller than a medium spray droplet size category.

**DO NOT** apply by aerial application.

For tank mixtures with Metsulfuron-methyl only:

**DO NOT** use on furrow or flood irrigated crops.

**DO NOT** store tank mix for prolonged periods, apply immediately after preparing the tank-mix.

**DO NOT** apply before the three-leaf stage of the crop when used for post emergent weed control.

**DO NOT** treat newly sown pastures as severe damage may occur.

**DO NOT** use on pasture seed crops.

**DO NOT** apply more than one application of GRINDSTONE® + Metsulfuron-methyl either alone or in a tank-mix with other product/s per season.

**DO NOT** apply to blackberry bushes bearing mature fruit.

**DO NOT** use in winter cereal crops undersown with legume pasture species e.g. medics, clovers.

**DO NOT** use in grass pasture containing legume species

**DO NOT** apply other sulfonylurea herbicides in a tankmix with GRINDSTONE® + Metsulfuron-methyl as a preplant application.

Use of this product on land that have a soil pH of 5.5 or less may result in some crop retardation, particularly if the crop is stressed – see previous restraint for more details on crop/weed stress.

**DO NOT** apply to wheat varieties King, Jacup, Miling and Harrier.

**DO NOT** apply to durum wheat varieties.

GRINDSTONE® + Metsulfuron-methyl has been tested over major commercially grown cereal varieties, but not all of those that may be grown. Care should be taken if it is intended to apply GRINDSTONE® + Metsulfuron-methyl in the same season to a crop already treated with another sulfonyleurea herbicide as crop damage may occur.

#### 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. 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 hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

#### DIRECTIONS FOR USE

##### INDEX OF GRINDSTONE® TANK MIXTURES BY CROP/SITUATION

Refer to the specific tables for details on GRINDSTONE® and tank mixture partners by situation.

Table number	Crop/Situation/Application method	Primary tank mix partner(s)	Additional potential tank mix partners depending on target weed(s)
<b>PART A: CROPS AND FALLOW</b>			
1	Wheat, barley, oats, triticale	Flagship™ 400	Metsulfuron-methyl 600 WG, LVE MCPA 570
2	Wheat, barley, triticale and cereal rye	Metsulfuron-methyl 600 WG	LVE MCPA 570, Enforcer® 242
3	Fallow/pre-plant knockdown	Metsulfuron-methyl 600 WG	Wipe-Out® Pro <sup>#</sup>
4	Fallow	Flagship™ 400	Wipe-Out® Pro <sup>#</sup>
5	Fallow	Fightback®	Wipe-Out® Pro <sup>#</sup>
<i>Followed by Withholding period section for Cereals and Fallow</i>			
<b>PART B: PASTURE, FORESTRY AND NON-AGRICULTURAL SITUATIONS</b>			
6A	High volume/spot spraying	Flagship™ 400	-
6B	High volume (handgun) spraying	Metsulfuron-methyl 600 WG	Wipe-Out® Pro <sup>#</sup>
6C	High volume spraying	Fightback®	-
7A	Boom application	Flagship™ 400	-
7B, 7C	Boom application	Metsulfuron-methyl 600 WG	-
7D	Boom application	Fightback®	Wipe-Out® Pro <sup>#</sup>
8A	Aerial application	Metsulfuron-methyl 600 WG	Wipe-Out® Pro <sup>#</sup>
8B	Aerial application	Fightback®	2,4-D Amine 720
9A	Low volume high concentrate application	Metsulfuron-methyl 600 WG	-
9B	Low volume high concentrate application	Fightback®	-
10	Controlled droplet application (C.D.A.)	Fightback®	-
<i>Followed by Withholding period section for Pastures.</i>			

<sup>#</sup> Or equivalent rate of a registered glyphosate formulation. Contact Adama Australia for more information.

**PART A CROPS AND FALLOW**

**Table 1:** For use on wheat, barley, oats and triticale in tank mix with **Flagship™ 400**

CROP	CROP GROWTH STAGE	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE/ha	Flagship™ 400 and Partner RATE/ha	CRITICAL COMMENTS
Barley, Oats, Triticale, Wheat <b>(Northern NSW and QLD only)</b>	Apply from 3 leaf to first node (Z13 to Z31)	Climbing buckwheat ( <i>Fallopia convolvulus</i> ) (black bindweed)	Seedling up to 2-4 leaf	20 mL	175 mL	
		Prickly lettuce ( <i>Lactuca serriola</i> ), Vetch ( <i>Vicia sativa</i> ), Volunteer chickpea ( <i>Cicer arietinum</i> ), Volunteer faba bean ( <i>Vicia faba</i> ), Volunteer field pea ( <i>Pisum sativum</i> )	Seedling up to 6-8 leaf	32 mL	265 mL	
			Seedling up to 4 leaf			
	Common sowthistle ( <i>Sonchus oleraceus</i> ), Deadnettle ( <i>Lamium amplexicaule</i> ), Wireweed ( <i>Polygonum aviculare</i> )		20 to 32 mL	175 to 265 mL + 5 g metsulfuron-methyl 600 WG	DO NOT USE in oats. Add BS-1000* or an alternative (see compatibility section) at 0.1%. <b>Note: this mixture will also control non-ALS resistant weeds such as mustards, turnip weed, volunteer canola and wild turnip.</b>	
	Flax-leaf fleabane ( <i>Conyza bonariensis</i> )		32 mL	265 mL + 5 g metsulfuron-methyl 600 WG		
	Apply from 4 leaf to first node (Z14 to Z31)	Common sowthistle ( <i>Sonchus oleraceus</i> ), Spiny emex ( <i>Emex australis</i> ), Variegated thistle ( <i>Silybum marianum</i> )		20 to 32 mL		
Flax-leaf fleabane ( <i>Conyza bonariensis</i> )			32 mL	265 mL + 610 mL ADAMA LVE MCPA 570		
Wheat <b>(Northern NSW and QLD only)</b>	Apply from 3 leaf to first node (Z13 to Z31)	Wild oats ( <i>Avena sterilis</i> ssp. <i>ludoviciana</i> ) ( <i>Avena fatua</i> ) (non 'fop' resistant)	2 to 4 leaf	20 to 32 mL	175 to 265 mL + 85 mL Mandate®	Add Uptake* Spraying Oil at 0.5%. Please refer to MANDATE® label for adjuvant recommendations.
Barley, Oats, Triticale, Wheat <b>(Southern NSW, Vic, SA and WA only)</b>	Apply from 3 leaf to first node (Z13 to Z31)	Volunteer faba bean, Volunteer field pea, Volunteer lupin, Volunteer vetch	Seedling up to 4 leaf	20 mL	175 mL	Please refer to GENERAL INSTRUCTIONS- MINIMUM RECROPPING PERIODS- prior to planting susceptible crops after application.

**Table 2:** For use on winter cereals (wheat, barley, triticale and cereal rye) in tank mix with **METSULFURON-METHYL 600 WG** post crop and weed emergence (Northern NSW, QLD)

- Read Crop Safety Directions below.
- Always add BS-1000\* at 0.1% or an alternative (see the section “Use of SURFACTANT/ WETTING AGENT” in the GENERAL INSTRUCTIONS).

Crop	CROP STAGE	WEEDS CONTROLLED	WEED STAGE	RATE/ ha	metsulfuron-methyl 600 WG Rate/ha	CRITICAL COMMENTS
Winter cereals (Wheat, Barley, Triticale and Cereal Rye) (Northern NSW, QLD)	Apply from 3 leaf up to 1st node stage of the crops (Z13 – Z31). When mixing with other products observe the crop stage for those products.	African turnip weed ( <i>Sisymbrium thellungii</i> ), Deadnettle ( <i>Lamium amplexicaule</i> )	Up to 6 leaf	16 mL	5 g	<b>Rates:</b> Where a range of rates and/or tank mixes are recommended, use the higher rates for larger weeds and/or under heavy weed pressures/ density. <b>Weed growth stage:</b> Where weed growth stage is not specified in the adjacent column, apply when weeds are small (not greater than 5 cm in height or diameter) and actively growing.  ^Use higher rate on rosette stage plants  #Use higher rate on plants 4 to 8 leaf stage.
		Chickpeas (Volunteer) ( <i>Cicer arietinum</i> ), Chicory ( <i>Cichorium intybus</i> ), Clover (Subterranean) ( <i>Trifolium subterraneum</i> ), Indian hedge mustard ( <i>Sisymbrium orientale</i> ), Medic ( <i>Medicago</i> spp.), Slender celery ( <i>Apium leptophyllum</i> ), Stagger weed ( <i>Stachys arvensis</i> ), Wild turnip ( <i>Brassica tournefortii</i> )	-			
		Faba beans (Volunteer) ( <i>Vicia faba</i> )	Up to the 3 node			
		Boggabri weed ( <i>Amaranthus macrocarpus</i> )	Up to 10 cm diameter	22 mL	7 g	
		Climbing buckwheat ( <i>Fallopia convolvulus</i> ), New Zealand spinach ( <i>Tetragonia tetragonoides</i> )	Up to 4 leaf			
		Dock (broadleaf) ( <i>Rumex obtusifolius</i> ), Parthenium weed^ ( <i>Parthenium hysterophorus</i> ), Prickly lettuce ( <i>Lactuca serriola</i> ), Spiny emex (Doublegee) ( <i>Emex australis</i> )	-	16 mL OR 22 mL	5 g OR 7 g	
		Hogweed (Wireweed) ( <i>Polygonum aviculare</i> )	Up to 3 leaf			
		Red pigweed ( <i>Portulaca oleracea</i> )	Up to 6 leaf			
		Saltbush ( <i>Atriplex muelleri</i> )	Up to 4-6 leaf			
		Volunteer sunflower# ( <i>Helianthus annuus</i> )	up to 4 leaf			
Winter cereals (Wheat, Barley, Triticale and Cereal Rye) (Northern NSW, QLD)	Apply from 4 leaf through to the start of jointing (Z14 – Z30)	Turnip weed ( <i>Rapistrum rugosum</i> )	4 to 6 leaf stage	16 mL	5 g + 420 mL LVE MCPA 570	<b>Rates:</b> Where a range of rates and/or tank mixes are recommended, use the higher rates for larger weeds and/or under heavy weed pressures/ density.
	Apply from 5 leaf through to the start of jointing (Z15 – Z30)	Saffron thistle weed pressures. ( <i>Carthamus lanatus</i> ), Variegated thistle ( <i>Silybum marianum</i> )		16 mL	5 g + 1 L LVE MCPA 570	
	Apply from early tillering (when main shoot has 4 to 5 leaves plus 2 or more tillers have formed) to start of jointing (1 <sup>st</sup> node)	Climbing buckwheat ( <i>Fallopia convolvulus</i> )	Up to 4 leaf stage	16 mL	5 g + 1 L Enforcer® 242 or equivalent 26 g/L picloram, 420 g/L MCPA formulations	

**Table 3:** Fallow weed control in tank mix with **METSULFURON-METHYL 600 WG** (Northern NSW, QLD)  
See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

<b>Only sow wheat, canola (Imidazolinone herbicide tolerant canola varieties only), barley, triticale following the below application.</b>				
<b>WEEDS CONTROLLED</b>	<b>WEED STAGE AT APPLICATION</b>	<b>RATE/ha</b>	<b>metsulfuron-methyl 600 WG and Partner Rate/ha</b>	<b>CRITICAL COMMENTS</b>
Refer to Table 2 and Wipe-Out® Pro label for Directions for Use. <b>(Northern NSW &amp; QLD)</b>	Refer to Table 2 and Wipe-Out® Pro label for Directions for Use.	16 mL  OR 24 mL	5 g + Wipe-Out® Pro at label rates  OR 8 g + Wipe-Out® Pro at label rates	DO NOT apply less than 4 months prior to sowing as crop injury may occur, particularly under dry, cold conditions. Apply when weeds are actively growing. Refer to the GENERAL INSTRUCTIONS and CRITICAL COMMENTS of the table 2, and glyphosate labels for use directions and rates for the target weeds.

**Table 4:** For use in fallow situations in tank mix with **Flagship™ 400**

<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE</b>	<b>Flagship™ 400 and Partner RATE</b>	<b>CRITICAL COMMENTS</b>
<b>Boom Application</b>				
Climbing buckwheat ( <i>Fallopia convolvulus</i> ) (black bindweed), Red pigweed ( <i>Portulaca oleracea</i> ) <b>(Northern NSW and QLD only)</b>	Seedling up to 2-4 leaf	20 mL/ha	175 mL/ha + Wipe-Out® Pro	When mixing with Wipe-Out® Pro to control both grass and broadleaf weeds, refer to the Wipe-Out® Pro label for use rates and adjuvants recommended for the grasses.

**Table 5:** For use in fallow situations in tank mix with **FIGHTBACK®** (or equivalent rate of registered picloram + triclopyr products), **Northern NSW, NT, Qld only.**

See GENERAL INSTRUCTIONS - APPLICATION section for application method details.

<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/ha</b>	<b>FIGHTBACK® and Partner RATE/ha</b>	<b>CRITICAL COMMENTS</b>
<b>Table A - Boom Application</b>				
Blackberry nightshade - <b>suppression only</b>	10 to 25 cm tall, prior to flowering	7 to 15 mL	200 to 400 mL + 1.0 L Wipe-Out® Pro + adjuvant	<b>For use by ground equipment only.</b> Apply in a minimum spray volume of 70 L/ha to produce COARSE spray droplets. Boom height must be set to ensure double overlap of nozzle patterns. Plants must be actively growing. Use the lower rate on the smaller weeds, as specified in the weed growth stage (or up to 5 cm diameter for <i>Polymeria pusilla</i> ). Refer to Wipe-Out® Pro label for use of adjuvant.
Camel melon, Cucumber melon ( <i>Cucumis melo</i> ), Prickly paddy melon	From 2 leaf to 50 cm diameter			
Common sowthistle	From 8 leaf to flowering			
Cowvine	From 2 to 5 leaf up to 15 cm diameter, prior to flowering			
Lucerne (established)	Active growth, 15 to 25 cm high, during spring	10 to 20 mL	300 to 500 mL + 1.0 L Wipe-Out® Pro + adjuvant	<b>DO NOT</b> plant susceptible crops for up to 9 months after application, as specified in GENERAL INSTRUCTIONS - MINIMUM RECROPPING PERIODS – Table A.
<i>Polymeria pusilla</i>	2 to 12 leaf up to 20 cm diameter, prior to flowering	7 to 15 mL	200 to 400 mL + 1.0 L Wipe-Out® Pro + adjuvant	Dry conditions after application will increase the re-cropping interval.
<b>Table B: Blanket Wiper Application</b>				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE</b>	<b>FIGHTBACK® and Partner RATE</b>	<b>CRITICAL COMMENTS</b>
Bitterbark ( <i>Alstonia constricta</i> )	From summer to end of autumn	65 mL per 10 L water  <b>Spot spraying:</b> 3.5 mL in 5 L water	2 L per 10 L water  <b>Spot spraying:</b> 100 mL in 5 L water	For use with blanket wipers only. For best results apply in autumn to tall (> 60 cm) plants using two opposite directional passes (up and back). Follow up “missed” plants with a spot spray application. These will be obvious after 6 weeks. Blanket wiper applications can be made in summer when plants are smaller but follow up spot spraying may be necessary. Do not disturb (cultivate) the treated patches for at least 3 months. Best long-term control is achieved when patches are left undisturbed for as long as possible after treatment (at least 6 months). <b>Spot spraying “missed” plants:</b> thoroughly wet all stems and leaves without producing any solution run-off. Avoid any spray reaching the soil surface.

**WITHHOLDING PERIOD:**

For tank mixtures other than those listed below, observe the WHP and/or export intervals for the partner product if longer than those for GRINDSTONE® Herbicide.

When used as directed and the below withholding period is observed, treated grain and livestock commodities are considered acceptable for export. However, export requirements are subject to change. Consult your exporter for updated information about specific market requirements.

**Cereal crops:**

For tank-mixtures with Flagship™ 400 EC:

Harvesting for grain: NOT REQUIRED WHEN USED AS DIRECTED.

Cutting or Grazing for Stockfood:

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

For tank-mixtures with Metsulfuron-methyl:

Harvesting for grain: NOT REQUIRED WHEN USED AS DIRECTED.

Grazing for meat production: DO NOT GRAZE FOR 21 DAYS AFTER APPLICATION OR IF GRAZING PRIOR TO 21 DAYS AFTER APPLICATION DO NOT send animals for slaughter that have grazed treated pasture WITHIN 21 DAYS OF APPLICATION UNLESS first placing the animals on clean feed for 3 days before leaving the farm.

Grazing for milk production: NOT REQUIRED WHEN USED AS DIRECTED.

Cutting for animal feed: DO NOT CUT FOR 21 DAYS AFTER APPLICATION.

For tank-mixtures with Metsulfuron-methyl + MCPA or Enforcer® 242

Grazing for meat production: DO NOT GRAZE FOR 21 DAYS AFTER APPLICATION.

Grazing for milk production: DO NOT GRAZE FOR 7 DAYS AFTER APPLICATION.

Cutting for animal feed: DO NOT CUT FOR 21 DAYS AFTER APPLICATION.

**IMPORTANT:** Read the *MANAGEMENT OF RESIDUES IN COMPOST, MULCHES AND ANIMAL WASTE* in the *PROTECTION OF CROPS, NATIVES AND OTHER NON-TARGET PLANTS* section of this label

**PART B: PASTURE, FORESTRY AND NON-AGRICULTURAL SITUATIONS**

**Table 6A:** High volume treatment/spot spraying in tank mix with Flagship™ 400 EC

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, FORESTS, PASTURES AND RIGHTS-OF-WAY</b>				
<b>Note:</b> Will damage legumes present in grass pastures				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/ 100 L water</b>	<b>Flagship™ 400 RATE/100 L</b>	<b>CRITICAL COMMENTS</b>
Fireweed ( <i>Senecio madagascariensis</i> )	Flowering plants up to 30 cm tall	20 mL	175 mL	Apply to actively growing plants from October to April. Spray to ensure thorough coverage of all foliage, including stems, to the point of runoff.
Thistles, including Spear thistle ( <i>Cirsium vulgare</i> )	Rosette stage prior to stem elongation			
Lantana ( <i>Lantana camara</i> )	Seedlings and regrowth from 0.5 to 1.2 m high	30 mL	245 mL	
	Mature plants and regrowth from 1.2 to 2 m high			
Cockspur thorn ( <i>Maclura cochinchinensis</i> )	Up to 3 m high			
Creeping lantana ( <i>Lantana montevidensis</i> )	At flowering			
Crofton weed ( <i>Ageratina adenophora</i> ), Mistflower ( <i>Ageratina riparia</i> )	Seedlings and young plants up to flowering			
Docks ( <i>Rumex</i> spp.)	Seedlings and rosettes up to 30 cm high			
Small flowered mallow (Marshmallow) ( <i>Malva parviflora</i> )	Seedlings and young plants up to flowering			
St. John's wort ( <i>Hypericum perforatum</i> )	From flowering to early seed set			
Wattles, including <i>A. decora</i> <i>A. harpophylla</i> <i>A. leiocalyx</i> <i>A. salicina</i>	Seedling plants or regrowth 0.5 to 1.2 m high			Apply to actively growing plants when soil moisture is plentiful. Some regrowth may occur particularly when treating old woody plants with sparse canopies and under dry conditions.

**Table 6B:** High volume spraying (handgun) in tank mix with **METSULFURON-METHYL**

See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

**Adjuvant:** Always add BS-1000\* at 0.1% or an alternative (see the section “Use of SURFACTANT/ WETTING AGENT” in the GENERAL INSTRUCTIONS) unless Pulse\* Penetrant or Uptake\* Spraying Oil is recommended.

<b>NON-AGRICULTURAL AREAS (NATIVE PASTURES), COMMERCIAL AND INDUSTRIAL AREAS, RIGHTS-OF-WAY</b>			
<b>Note:</b> Will damage legumes present in grass pastures			
<b>WEEDS CONTROLLED</b>	<b>RATE/100 L water</b>	<b>metsulfuron-methyl 600 WG and Partner Rate/100 L</b>	<b>CRITICAL COMMENTS</b>
St. John's wort ( <i>Hypericum perforatum</i> ),	30 mL	10 g + 125 mL Wipe-Out® Pro + Pulse* Penetrant (0.2%)	Spray to wet, but not to cause run-off.
Tree-of-Heaven ( <i>Ailanthus altissima</i> )			-
Lantana ( <i>Lantana camara</i> )	30 mL	10 g	Apply to bushes up to 2 m tall. Spray to thoroughly wet all foliage and stems. Spray should penetrate through the bush.
Alligator weed ( <i>Alternanthera philoxeroides</i> )			Apply to bushes up to 2 m tall. Spray to thoroughly wet all foliage and stems. Spray should penetrate throughout the bush. Should regrowth occur retreatment will be necessary.
Australian blackthorn ( <i>Bursaria spinosa</i> )			Apply in terrestrial situations only. Follow-up applications over at least two seasons are essential for complete control.
Bitou bush/Boneseed ( <i>Chrysanthemoides monilifera</i> )			Spray to thoroughly wet all foliage, but not cause run-off.
Bracken fern ( <i>Pteridium esculentum</i> )			Spray to thoroughly wet all foliage. Minimise contact with desirable species.
Fennel ( <i>Foeniculum vulgare</i> )			Spray after full frond expansion. Spray to thoroughly wet all foliage but not to cause run-off.
Hawthorn ( <i>Crataegus laevigata</i> )			-
Japanese sunflower ( <i>Tithonia diversifolia</i> )			Spray to thoroughly wet all foliage but not to cause run-off.
Kangaroo thorn ( <i>Acacia paradoxa</i> )			-
Privet ( <i>Ligustrum</i> spp.)			Apply to bushes up to 2.5 m high.
Smartweed ( <i>Polygonum</i> spp.)			Apply to bushes up to 3 m high. Complete foliar spray coverage is essential for control; partial spray coverage will result in regrowth recovery.
Sweet briar ( <i>Rosa rubiginosa</i> )			Apply to actively growing plants.
Wait-a-while ( <i>Caesalpinia decapetala</i> )			Avoid spraying when leaf fall has commenced or after the end of February. Spray to thoroughly wet all foliage but not to cause run-off.
Apple box ( <i>Angophora floribunda</i> ), Messmate stringybark ( <i>Eucalyptus obliqua</i> ), Peppermint gum ( <i>E. radiata</i> ), Red gum ( <i>E. blakelyi</i> ), Yellow box ( <i>E. melliodora</i> )			30 mL
Bellyache bush ( <i>Jatropha gossypifolia</i> )	-		
Blackberry ( <i>Rubus</i> spp.)	30 mL	10 g with/without 125 mL Wipe-Out® Pro	Spray to thoroughly wet all foliage and canes. Ensure peripheral runners are sprayed. Follow-up applications over at least two seasons are essential for complete control. Due to widespread picking of blackberries by the public, it is not recommended to apply to bushes bearing mature fruit. Apply GRINDSTONE® and Metsulfuron-methyl 600 WG tank mix with Uptake* spraying oil (0.5%). For Wipe-Out® Pro tank-mix only: Apply with Pulse* Penetrant (at 0.2%) or Uptake*. Apply in terrestrial situations only.

<b>NON-AGRICULTURAL AREAS (NATIVE PASTURES), COMMERCIAL AND INDUSTRIAL AREAS, RIGHTS-OF-WAY</b>			
<b>Note:</b> Will damage legumes present in grass pastures			
<b>WEEDS CONTROLLED</b>	<b>RATE/100 L water</b>	<b>metsulfuron-methyl 600 WG and Partner Rate/100 L</b>	<b>CRITICAL COMMENTS</b>
Bridal creeper ( <i>Myrsiphyllum asparagoides</i> )	15 mL	5g	Apply during mid-June to late August. Follow-up applications over at least two seasons will be required for complete control. Water volumes of 500 to 800 L/ha are recommended to minimise the risk of damage to native vegetation.
Inkweed ( <i>Phytolacca octandra</i> ), Mistflower ( <i>Eupatorium riparium</i> )			-
Parthenium ( <i>Parthenium hysterophorus</i> )			Spray to thoroughly wet all foliage but not to cause run-off
Paterson's curse ( <i>Echium plantagineum</i> )			-
Ragwort ( <i>Senecio jacobaea</i> )			Apply to actively growing plants at rosette to cabbage stage.
Wild turnip ( <i>Brassica tournefortii</i> )			Apply to actively growing plants.
Crofton weed ( <i>Eupatorium adenophorum</i> )	50 mL	15 g	Spray to thoroughly wet all foliage but not to cause run-off. Extra care should be taken to get good spray penetration when spraying bushes situated in thickets. Best results obtained on younger plants. If regrowth occurs, retreat in the subsequent growth period.
Rubber vine ( <i>Cryptostegia grandiflora</i> )			Apply to bushes up to 3 m in height. Apply from October through April when bushes are actively growing. Ensure thorough spray coverage of all foliage and leaders. Incomplete coverage will result in regrowth.
Golden dodder ( <i>Cuscuta australia</i> )	3 mL	1.5 g	Apply as a spot spray to point of run-off. Ensure correct coverage of infested area. Apply pre-flowering.
Gorse ( <i>Ulex europaeus</i> )	50 mL 30 mL	15 g + Pulse* Penetrant (0.2%) 10 g + 125 mL Wipe-Out® Pro + Pulse* Penetrant (0.2%)	Apply to bushes up to 2 m tall. Ensure thorough spray penetration and coverage of the whole plant.
Harrisia cactus ( <i>Eriocereus</i> spp.)	60 mL	20 g	Spray to thoroughly wet using water volumes of 1000 to 1400 L/ha. Follow-up treatment may be necessary.
Noogoora burr ( <i>Xanthium pungens</i> )	22 mL	7 g	-

**Table 6C:** High volume spraying in tank mix with **FIGHTBACK®** (or equivalent rate of registered picloram + triclopyr products)

See GENERAL INSTRUCTIONS - APPLICATION section for application method details.

Note: Adama Australia only recommends the use of knapsacks or 12-volt sprayers for use on low growing herbaceous weeds and woody weeds that are not regrowth and are less than 60 cm high or 60 cm diameter.

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, FORESTS, PASTURES AND RIGHTS-OF-WAY.</b>				
<b>Note:</b> Will damage legumes present in grass pastures.				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/100 L water</b>	<b>FIGHTBACK® RATE/100 L</b>	<b>CRITICAL COMMENTS</b>
African boxthorn	Less than 2 m tall	20 mL	500 mL	Apply when bushes have good leaf cover, growth and <b>no leaf fall</b> .
<i>Angophora</i> spp.	1 to 3 m tall	12 mL	350 mL	-
Australian blackthorn	Less than 2 m tall	20 mL	500 mL	Apply from late spring to early autumn.
<i>Banksia</i> spp.	1 to 3 m tall	12 mL	350 mL	-
Biddy bush (Chinese shrub) (Sifton bush)	Autumn when actively growing	20 mL	500 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.125% for best results.
Blackberry in association with: Docks, Ragwort, Smartweed, Thistles	Late spring to autumn	12 mL OR 17 mL	350 mL OR 500 mL	Use the higher rate on plants that have been damaged by grazing stock or insects and on known difficult to kill blackberry. Where herbicides other than Group 4 (Previously, Group I) have been used, allow 2 seasons regrowth to occur before respraying with GRINDSTONE® + Fightback®.
Blue heliotrope	Flowering	20 mL	500 mL	Apply in a minimum spray volume of 1250 L/ha.



<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, FORESTS, PASTURES AND RIGHTS-OF-WAY.</b>				
<b>Note:</b> Will damage legumes present in grass pastures.				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/100 L water</b>	<b>FIGHTBACK® RATE/100 L</b>	<b>CRITICAL COMMENTS</b>
Brooms: Cape, English, Flax leaf, Montpellier	Spring to mid-summer prior to pod formation	8 mL	250 mL	Apply as a thorough foliage spray.
	Autumn to winter	12 mL	350 mL	
Camphor Laurel	Anytime when actively growing	12 or 20 mL	350 or 500 mL	Apply as a thorough foliage spray. Use the higher rate for weed above 2 m tall.
Capeweed	Flowering	5 mL	150 mL	Apply as a thorough foliage spray.
<i>Casuarina</i> spp.	1 to 3 m tall	12 mL	350 mL	
Chinee apple	Less than 2 m tall	12 mL	350 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
Cockspur thorn, Crofton weed	Spring to autumn	12 mL	350 mL	Apply as a thorough foliage spray.
Common sensitive plant	Any time when actively growing	7 mL	200 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results. To avoid leaves closing during application, spray plants while moving forward.
Eastern cotton bush ( <i>Maireana microphylla</i> )	Spring to Autumn	20 mL	500 mL	Add Uptake® Spraying Oil at 0.5%. Some bushes may require a follow-up spray to control regrowth.
<i>Eucalyptus</i> spp.	Seedling and regrowth from small lignotubers, 1 to 3 m tall	12 or 20 mL	350 or 500 mL	Apply the high rate where difficult to control species of <i>Eucalyptus</i> regrowth is present. Addition of an adjuvant may improve results.
Fireweed	Flowering	12 mL	350 mL	Apply as a thorough foliage spray.
Galenia	Fresh growth in spring to summer	20 mL	500 mL	Use 2000 L of spray mixture/ha.
Giant bramble	Spring to autumn			Penetration of thick clumps may be difficult and respraying may be necessary. Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
Gorse	1 to 1.5 m tall	8 mL	250 mL	Spring and summer treatment only. Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
	Over 1.5 m tall or autumn treatment	12 mL	350 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
	Winter treatment	20 mL	500 mL	Brownout may not be complete until summer. Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
Groundsel bush ( <i>Baccharis halimifolia</i> )	1 to 1.5 m tall in spring to summer	8 mL	250 mL	Apply as a thorough foliage spray.
	Over 1.5 m tall or autumn treatment	12 mL	350 mL	
Green cestrum	Late spring to early autumn	20 mL	500 mL	One application may give satisfactory control. Any subsequent regrowth and seedlings must be resprayed at approximately 1 metre high.
Hawthorn	Less than 2 m tall	20 mL	500 mL	Apply from late spring to early autumn.
Horehound, Japanese sunflower	Pre-flowering	12 mL	350 mL	Apply as a thorough foliage spray.
Lantana ( <i>Lantana camara</i> ) ( <i>Lantana montevidensis</i> )	Up to 1 m tall in summer to autumn	12 mL	350 mL	Add one of the following adjuvants, when using 12 mL rate: Uptake* Spraying Oil @ 0.5% v/v. Pulse* Penetrant @ 0.1% v/v.
	1 to 2 m tall in summer to autumn	20 or 25 mL	500 or 750 mL	Thoroughly wet foliage stems and soil around the base of the plants. Use higher rate on known harder to kill varieties.
Lion's tail ( <i>Leonatis nepetifolia</i> )	Pre-flowering	7 mL	200 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
Limebush	Any time of year with good leaf cover and soil moisture	12 mL	350 mL	Penetration of thick clumps may be difficult, and respraying may be required. Addition of an adjuvant may improve results.

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, FORESTS, PASTURES AND RIGHTS-OF-WAY.</b>				
<b>Note:</b> Will damage legumes present in grass pastures.				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/100 L water</b>	<b>FIGHTBACK® RATE/100 L</b>	<b>CRITICAL COMMENTS</b>
Manuka	At flowering	20 mL	500 mL	For optimum results, add Pulse Penetrant at 0.2%. Thoroughly wet foliage, stems and soil around the base of the plants.
Mesquite ( <i>Prosopis</i> spp.)	Seedling, full leaf and flowering before podding	12 mL	350 mL	DO NOT spray plants bearing pods. Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
<i>Prosopis velutina</i>		22 mL	670 mL	
Milfoil (Yarrow)	Flowering	12 to 20 mL	350 to 500 mL	Use low rate when in close proximity to highly sensitive vegetation.
Mistflower	Spring to autumn	12 mL	350 mL	Apply as a thorough foliage spray.
Mother-of-millions	Flowering	20 mL	500 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1%.
Paddy's lucerne	Active growth	20 mL	500 mL	Plants that have been continually slashed or grazed over many seasons may be difficult to control and regrowth may occur.
Parkinsonia	Under 2 m tall	12 mL	350 mL	Add Uptake* Spraying Oil at 0.5%. Avoid spraying under dry conditions when plants are stressed or bearing pods. Thoroughly wet foliage.
Paterson's curse	Flowering	8 mL	250 mL	-
Prickly pear (common) Smooth tree pear	Active phyllode growth	20 mL	500 mL	Apply as a thorough foliage spray. Regrowth may occur, so a follow-up application may be necessary.
Rubber vine (Not infected with rust)	Up to 1.5 m tall at flowering	12 mL	350 mL	Spray all leaves and stems just to the point of runoff and thoroughly spray the base of the plant. With larger, more dense stands, regrowth may occur. Subsequent control of any regrowth should be done by basal bark spraying.
	Dense stands greater than 1.5 m tall at flowering	20 mL	500 mL	
Siam weed	Active growth	12 mL	350 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
Sicklepod	Up to flowering	7 mL	200 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results. DO NOT apply to podding plants.
Spear thistle	Rosette to flowering	5 mL	150 mL	-
St. John's wort	From flowering to early seed set	20 mL	500 mL	Late spring to early summer.
Sweet brier	Up to 1.5 m tall	12 mL	350 mL	Add metsulfuron-methyl at 10 g/100 L water to obtain more reliable results with the lower rate.
		20 mL	500 mL	Full leaf to ripe fruit prior to leaf fall. Thorough wetting including the crown is recommended.
Tobacco weed	Actively growing plants	10 mL	300 mL	Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1% for best results.
Tropical soda apple	Flowering up to 1 m tall	12 mL	350 mL	Add Uptake* Spraying Oil at 0.5%.
Wattle ( <i>Acacia</i> spp.) (except corkwood wattle)	1 to 3 m tall	12 mL	350 mL	-
Wild Rosemary ( <i>Cassinia laevis</i> )	Active growth 0.5 to 1 m tall	12 to 20 mL	350 to 500 mL	Use lower rate on seedlings 0.5 m tall. Apply as a thorough foliar spray
Wild tobacco tree	Spring to autumn up to 2 m tall	12 mL	350 mL	-

**Table 7A:** Boom application in tank mix with **Flagship™ 400 EC**

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, FORESTS, PASTURES AND RIGHTS-OF-WAY</b>				
<b>Note:</b> Will damage legumes present in grass pastures				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/ha</b>	<b>Flagship™ 400 RATE/ha</b>	<b>CRITICAL COMMENTS</b>
Fireweed ( <i>Senecio madagascariensis</i> )	up to flowering	60 mL	525 mL	Legumes present at application will be controlled.

**Table 7B:** Boom application in tank mix with **METSULFURON-METHYL**

See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

Adjuvant: Always add BS-1000\* at 0.1% or an alternative (see the section “SURFACTANT/WETTING AGENT” in the GENERAL INSTRUCTIONS) unless Pulse\* Penetrant is recommended.

<b>NON-AGRICULTURAL AREAS (NATIVE PASTURES), COMMERCIAL AND INDUSTRIAL AREAS, RIGHTS-OF-WAY</b>			
<b>Note:</b> Will damage legumes present in grass pastures			
<b>WEEDS CONTROLLED</b>	<b>RATE/ha</b>	<b>metsulfuron-methyl 600 WG and Partner Rate/ha</b>	<b>CRITICAL COMMENTS</b>
Alligator weed ( <i>Alternanthera philoxeroides</i> )	250 mL	80 g	Apply in terrestrial situations only. Follow-up applications over at least two seasons are essential for complete control.
Common bracken ( <i>Pteridium esculentum</i> )	200 mL	60 g	Spray after full frond expansion. Adjust boom height to ensure correct spray overlap.
Darling pea ( <i>Swainsona</i> spp.)	30 mL	10 g	Apply during spring.
Great mullein ( <i>Verbascum thapsus</i> )	65 mL	20 g + Pulse* Penetrant (at 0.2%)	Regrowth may occur if growing conditions are not good. Apply during spring at times of good soil moisture to rosettes before stem elongation.
Parthenium ( <i>Parthenium hysterophorus</i> )	22 mL	7 g	Apply up to rosette stage. Spray to thoroughly wet all foliage. Adjust boom height to ensure complete overlap.
Paterson’s curse ( <i>Echium plantagineum</i> )	50 mL	15 g	Spray to thoroughly wet all foliage. Adjust boom height to ensure complete overlap.
Ragwort ( <i>Senecio jacobaea</i> )			Apply to actively growing plants at rosette to cabbage stage.
Smartweed ( <i>Polygonum</i> spp.)	30 mL	10 g	Apply to actively growing plants.
Blackberry ( <i>Rubus</i> spp.)	200 mL	60 g + 5.4 L Wipe-Out® Pro + Uptake* Spraying Oil (0.5%) or Pulse* Penetrant (0.1%)	Apply from flowering until prior to leaf yellowing. Due to widespread picking of blackberries by the public, it is not recommended to apply to bushes bearing mature fruit.
Bracken fern ( <i>Pteridium esculentum</i> )	100 mL	30 g + 2.7 L Wipe-Out® Pro + Pulse Penetrant (0.1%)	Spray after full frond expansion, but prior to first frosts. Adjust boom height to ensure correct spray overlap.
St. John’s wort ( <i>Hypericum perforatum</i> )	200 mL	60 g + 5.4 L Wipe-Out® Pro + Pulse* Penetrant (0.1%)	-

**Table 7C:** Boom Application in tank mix with **METSULFURON-METHYL**

See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

Adjuvant: Always add BS-1000\* at 0.2% or an alternative (see the section “SURFACTANT/WETTING AGENT” in the GENERAL INSTRUCTIONS).

<b>ESTABLISHED PASTURES: TOLERANT GRASS SPECIES (Perennial phalaris &amp; cocksfoot stands greater than 1 year old) OR PASTURE RENOVATION (Use in rundown pastures to reduce weed burden before sowing with a pasture in the following year)</b>			
<b>Note:</b> Will damage legumes present in grass pastures			
<b>WEEDS CONTROLLED</b>	<b>RATE/ha</b>	<b>metsulfuron-methyl 600 WG Rate/ha</b>	<b>CRITICAL COMMENTS</b>
Annual medics ( <i>Medicago</i> spp.)	15 mL	5 g	For best results apply before flowering.
Cape tulip: one & two leaf ( <i>Homeria</i> spp.)			Apply at bulb exhaustion usually during winter. More than one year of application may be required to obtain control.
Annual clover ( <i>Trifolium</i> spp.)			Apply before flowering.
Docks ( <i>Rumex</i> spp.)	15 or 30 mL	5 or 10 g	Best results when applied in spring prior to bolting. Use the lower rate for seedlings and higher rate for established/dense plants.
Doublegee/Spiny emex/Three cornered jack ( <i>Emex australis</i> ) – up to 6 leaf stage.			
Storksbill/Wild geranium ( <i>Erodium</i> spp.)			Use the higher rate on dense populations. Spray before flowering.
Soursob ( <i>Oxalis pes-capre</i> )			
Sorrel ( <i>Rumex acetosella</i> )			Best results when applied in spring prior to seed heads appearing. Use the lower rate for seedlings and higher rate for established/dense plants.

<b>ESTABLISHED PASTURES: TOLERANT GRASS SPECIES (Perennial phalaris &amp; cocksfoot stands greater than 1 year old) OR PASTURE RENOVATION (Use in rundown pastures to reduce weed burden before sowing with a pasture in the following year)</b>			
<b>Note: Will damage legumes present in grass pastures</b>			
<b>WEEDS CONTROLLED</b>	<b>RATE/ha</b>	<b>metsulfuron-methyl 600 WG Rate/ha</b>	<b>CRITICAL COMMENTS</b>
Onion grass/Guildford grass ( <i>Romulea rosea</i> )	50 mL	15 g	Apply at bulb exhaustion, usually during winter, before the onset of browning off caused by the <i>Helminthosporium</i> fungus. When mixing with Wipe-Out® Pro use 15 mL/ha GRINDSTONE®+ 5 g/ha metsulfuron-methyl 600 WG rate.
Wild garlic ( <i>Allium vineale</i> )			Apply at bulb exhaustion usually during winter. More than one year of application may be required to obtain control.
Ragwort ( <i>Senecio jacobaea</i> )			Apply to actively growing plants at the rosette to cabbage stage.
Paterson's curse ( <i>Echium plantagineum</i> )	30 or 50 mL	10 or 15 g	Apply lower rate on small plants. Apply higher rate before bolting/flowering.

**Table 7D:** Boom application in tank mix with **FIGHTBACK®** (or equivalent rate of registered picloram + triclopyr products) See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, PASTURES AND RIGHTS-OF-WAY.</b>				
<b>Note: Will damage legumes present in grass pastures</b>				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/ha</b>	<b>FIGHTBACK® RATE/ha</b>	<b>CRITICAL COMMENTS</b>
Galenia	Fresh growth during spring to summer	100 to 170 mL	3 to 5 L	Rough mine sites will require adequate spray equipment such as boomless nozzles for effective coverage. Use the low rate for seedling weeds not >50 cm across with excellent fresh active growth in spring right after significant rain of 25 mm or more. When using the lower rate add Pulse* Penetrant at 0.1% for best control.
Sicklepod	Up to flowering	100 mL	3 L	DO NOT apply to podding plants. Add BS-1000* or an alternative (see COMPATIBILITY section) at 0.1%.
St John's wort	Flowering to early seed set (Nov- Jan)	70 to 140 mL	2 to 4 L	Use the higher rate on dense infestations and when longer residual control is required. Follow-up respraying will be required in the following season.
Flax-leaf fleabane ( <i>Conyza bonariensis</i> )	Up to 8 leaf or up to 10 cm diameter	70 mL	2 L + 2 L Wipe-Out® Pro	Add 100% non-ionic surfactant (e.g. BS-1000*) at 0.2% v/v.

**Table 8A:** Aerial application in tank mix with **METSULFURON-METHYL** See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

<b>NATIVE PASTURES, NON-AGRICULTURAL AREAS, COMMERCIAL AND INDUSTRIAL AREAS, RIGHTS-OF-WAYS AND FLOODPLAINS</b>			
<b>Note: Will damage legumes present in grass pastures</b>			
<b>WEEDS CONTROLLED</b>	<b>RATE/ha</b>	<b>metsulfuron-methyl 600 WG and Partner Rate/ha</b>	<b>CRITICAL COMMENTS</b>
Blackberry ( <i>Rubus</i> spp.) – by Helicopter only	500 mL	160 g	Apply when bushes are actively growing. Apply from flowering until prior to leaf yellowing. (Use not less than 100 L prepared spray/ha for the higher rate.
Blackberry ( <i>Rubus</i> spp.)	200 mL	60 g + 5.4 L Wipe-Out® Pro + Uptake* Spraying Oil (0.5%) or Pulse* Penetrant (0.1%)	Due to widespread picking of blackberries by the public, it is not recommended to apply to bushes bearing mature fruit.
Bracken fern ( <i>Pteridium esculentum</i> )	100 mL	30 g + 2.7 L Wipe-Out® Pro + Pulse Penetrant (0.1%)	Spray after full frond expansion, but prior to first frosts. Adjust boom height to ensure correct spray overlap.
Mimosa pigra – by Helicopter only	160 or 200 mL	50 or 60 g	Use the higher rate when air temperature exceeds 35°C.
St. John's wort ( <i>Hypericum perforatum</i> )	200 mL	60 g + 5.4 L Wipe-Out® Pro + Pulse* Penetrant (0.1%)	-

**Table 8B:** Aerial application in tank mix with **FIGHTBACK®** (or equivalent rate of registered picloram + triclopyr products)  
See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, PASTURES AND RIGHTS-OF-WAY.</b>				
<b>Note:</b> Will damage legumes present in grass pastures				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/ha</b>	<b>FIGHTBACK® and PARTNER RATE/ha</b>	<b>CRITICAL COMMENTS</b>
Blackberry	Summer to autumn	340 mL	10 L	Where herbicides other than Group 4 (Previously, Group I) have been used, allow two seasons regrowth to occur before respraying. <b>WARNING:</b> <i>Eucalyptus</i> species up to 4 m may be killed if sprayed during this treatment. Mature trees which are 15 to 20 m tall may be partially defoliated but are likely to recover.
Gorse				Helicopter application only.
Lantana	Late Autumn	50 mL	1.5 L + 5.2 L 2,4-D Amine 720	Helicopter application only. Spray with calibrated equipment using the half overlap opposite pass technique applying a minimum spray volume of 150 L/ha. Follow-up respraying will be required.
Cockspur thorn, Crofton weed, Lantana, Mistflower				
Rubber vine (Not infected with rust)	when flowering	100 to 170 mL	3 to 5 L	Helicopter application only. Use rates will depend upon the density and height of the rubber vine stand. The higher rate should be used on dense stands, however, complete coverage and penetration may be difficult. Follow-up respraying will be required. Any regrowth should be sprayed with a suitable basal bark herbicide.
St. John's wort	Flowering to early seed set (Nov-Jan)	100 mL	4 L	Helicopter application only. Follow-up spraying will be required in the following season.
<b>AGRICULTURAL NON-CROP AREAS ON FLOOD PLAINS.</b>				
Parkinsonia	Seedlings 1-2 m tall, or 12 - 24 months old	100 mL	3 L	Helicopter application only. Add Uptake* Spraying Oil at 1 L/ha.

**Table 9A:** Low volume high concentrate application techniques (gas gun) in tank mix with **METSULFURON-METHYL**  
BEFORE USE READ the APPLICATION section below for instructions on use of the gas gun

<b>NON-AGRICULTURAL AREAS (NATIVE PASTURES), COMMERCIAL AND INDUSTRIAL AREAS, RIGHTS-OF-WAY</b>				
<b>Note:</b> Will damage legumes present in grass pastures				
<b>WEEDS CONTROLLED</b>	<b>RATE/10 L water</b>	<b>metsulfuron-methyl 600 WG and Partner RATE/10 L</b>	<b>CRITICAL COMMENTS</b>	
Apple box ( <i>Angophora floribunda</i> ), Messmate stringybark ( <i>Eucalyptus obliqua</i> ), Peppermint gum ( <i>E. radiata</i> ), Red gum ( <i>E. blakelyi</i> ), Yellow box ( <i>E. melliodora</i> )	30 mL	10 g + Pulse* Penetrant (0.2%)	Apply to plants up to 4 m high. Results cannot be guaranteed where suckers originate from large lignotubers.	
Bitou bush/Boneseed ( <i>Chrysanthemoides monilifera</i> )			Minimise contact with desirable species.	
Blackberry ( <i>Rubus</i> spp.)			Ensure peripheral runners are sprayed. Due to widespread picking of blackberries by the public, it is not recommended to apply to bushes bearing mature fruit.	
Privet ( <i>Ligustrum</i> spp.)			Apply to bushes up to 3 m high. Partial spray coverage will result in regrowth recovery.	
Sweet briar ( <i>Rosa rubiginosa</i> )			Avoid spraying when leaf fall has commenced or after the end of February. Apply to bushes less than 2 m high as application to bushes in excess of 2 m high may produce variable results.	
Wait-a-while ( <i>Caesalpinia decapetala</i> )			-	

**Table 9B:** Low volume high concentrate application techniques (gas gun, sprinkler sprayer) in tank mix with **FIGHTBACK®** (or equivalent rate of registered picloram + triclopyr products). See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, FORESTS, PASTURES AND RIGHTS-OF-WAY.</b>				
<b>Note:</b> Will damage legumes present in grass pastures				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE/ 10 L water</b>	<b>FIGHTBACK® RATE/10 L</b>	<b>CRITICAL COMMENTS</b>
Blackberry	Late spring to autumn	10 mL	340 mL	Apply to actively growing bushes which are able to be sprayed on all sides. For larger bushes, the high-volume application technique is recommended.
<i>Eucalyptus</i> species	Seedlings up to 2 m tall			
Camphor Laurel, Cockspur thorn, Crofton weed	Less than 1.5 m high	20 mL	500 mL	-
Mistflower				
Sweet briar	1.5 m tall, full leaf to ripe fruit			<b>Gas Powered Gun only:</b> Apply to actively growing bushes not more than 1.5 m tall that have not more than 5 stems from the crown.
St John's wort	During flowering to early seed set			<b>Gas Powered Gun only:</b> One application should provide control. Minor regrowth and seedlings may be retreated the following summer.
Wild tobacco tree	Less than 1.5 m high			Apply to actively growing bushes which are able to be sprayed on all sides. For larger bushes, the high-volume application technique is recommended.

**Table 10:** Controlled droplet application (C.D.A.) in tank mix with **FIGHTBACK®** (or equivalent rate of registered picloram + triclopyr products). See GENERAL INSTRUCTIONS – APPLICATION section for application method details.

<b>AGRICULTURAL NON-CROP AREAS, COMMERCIAL AND INDUSTRIAL AREAS, PASTURES AND RIGHTS-OF-WAY.</b>				
<b>Note:</b> Will damage legumes present in grass pastures				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>RATE</b>	<b>CRITICAL COMMENTS</b>	
Blackberry in association with: Docks Ragwort St John's wort Thistles	Summer to autumn	1:30 ratio of GRINDSTONE® to Fightback® applied undiluted	One application may give satisfactory control but subsequent regrowth and seedlings should be resprayed after hardening off. Where herbicides other than Group 4 (previously, Group I) herbicides have been used, allow 2 seasons regrowth to occur before respraying.	

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

**OTHER LIMITATIONS**

**IN TASMANIA FOR BLACKBERRY-** DO NOT treat bushes carrying mature or near mature fruit.

**FOR NATIVE VEGETATION -** Use of GRINDSTONE® on native vegetation must be done in accordance with STATE and/or LOCAL legislation.

**WITHHOLDING PERIOD:**

**For tank mixtures other than those listed below, observe the WHP and/or export intervals for the partner product if longer than those for GRINDSTONE® Herbicide.**

When used as directed and the below withholding period is observed, treated grain and livestock commodities are considered acceptable for export. However, export requirements are subject to change. Consult your exporter for updated information about specific market requirements.

**FODDER INTENDED FOR EXPORT:**

Some countries have limits on the level of residue acceptable in animal feeds. Please consult your exporter before using this product on crops destined to be used for export fodder.

**FOR TANK-MIXTURES WITH Flagship™ 400 EC OR FIGHTBACK® (OR EQUIVALENT RATE OF REGISTERED PICLORAM + TRICLOPYR PRODUCTS):**

**Pasture:**

Cutting or grazing for stockfood: NOT REQUIRED WHEN USED AS DIRECTED.

**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, that the Export Slaughter Interval, Export Grazing Interval or Export Animal Feed Interval is observed before stock are sold or slaughtered.

**Export Slaughter Interval (ESI):**

AFTER OBSERVING THE GRAZING WITHHOLDING PERIOD, livestock that has been grazed on or fed treated pasture should be placed on clean feed FOR 3 DAYS PRIOR TO SLAUGHTER.

**EXPORT GRAZING INTERVAL (EGI):**

Livestock that has been grazing on treated pasture should not be sold for export slaughter FOR 42 DAYS (6 WEEKS) AFTER APPLICATION of the chemical product unless the export slaughter interval has been observed.

**EXPORT ANIMAL FEED INTERVAL (EAFI):**

Do not cut treated pasture FOR 42 DAYS (6 WEEKS) AFTER APPLICATION of the chemical product for stock feed or animals intended to be slaughtered for export.

**FOR TANK-MIXTURES WITH METSULFURON-METHYL:**

**Pasture:**

Grazing for meat production: DO NOT GRAZE FOR 56 DAYS AFTER APPLICATION OR IF GRAZING PRIOR TO 56 DAYS AFTER APPLICATION DO NOT send animals for slaughter that have grazed treated pasture WITHIN 56 DAYS OF APPLICATION UNLESS first placing the animals on clean feed for 3 days before leaving the farm.

Grazing for milk production: DO NOT GRAZE FOR 3 DAYS AFTER APPLICATION.

Cutting for animal feed: DO NOT CUT FOR 56 DAYS AFTER APPLICATION.

**IMPORTANT:** Read the *MANAGEMENT OF RESIDUES IN COMPOST, MULCHES AND ANIMAL WASTE* in the *PROTECTION OF CROPS, NATIVES AND OTHER NON-TARGET PLANTS* section of this label.

## RESISTANT WEEDS WARNING

GRINDSTONE® Herbicide contains members of the pyridine group of herbicides. The product has the disrupters of plant cell growth mode of action. For weed resistance management, the product is a Group 4 Herbicide. Some naturally-occurring weed biotypes resistant to the product and other disrupters of plant cell growth 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 this product or other disrupters of plant cell growth herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Adama Australia accepts no liability for any losses that may result from the failure of this product to control resistant weeds. Strategies to minimise the risk of herbicide resistance are available. Contact your farm chemical supplier, consultant, local Department of Agriculture, or local Adama Australia representative for details.

GROUP **4** HERBICIDE

## GENERAL INSTRUCTIONS

### MINIMUM RECROPPING PERIODS

Use of GRINDSTONE® Herbicide may prevent early re-establishment of many crops including grasses after treatment. Aminopyralid remains active in the soil for extended periods depending on rate of application, soil type (clay content), rainfall, temperature, humidity, soil moisture and soil organic matter. Breakdown is fastest in warm and wet conditions and slower in cold and dry conditions. The following tables show plant-back periods to specific crops following application of GRINDSTONE® in different areas/situations of Australia. Land previously treated with GRINDSTONE® should not be rotated to crops other than those listed in the table below. Tolerance of other crops (grown through to maturity) should be determined on a small scale before sowing into larger areas (see field bioassay in PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS section).

**Note: Before using GRINDSTONE® in tank mixes with other herbicides, check the plant-back information on all product labels. The most residual product, i.e. the product with the longest plant-back period, will determine the time between spraying and planting the next crop. See also PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS.**

For tank mix with Flagship™ 400 only:

#### Table A: Northern New South Wales & Queensland

Plant-back periods for rotational crops following application of GRINDSTONE® for rates up to 32 mL/ha on black cracking clay soils. These plant-back periods are based on normal rainfall pattern. During drought conditions (or when rainfall is less than 100 mm for a period of 4 months or greater) the plant-back period may be significantly longer.

Winter Crop	Plant-back Period (months)	Summer Crop	Plant-back Period (months)
Wheat	4	Sorghum	3
Barley	4	Mung bean	5
Canola	4	Sunflower	5
Chickpea	6	Soybean	5
Faba bean	6	Cotton	9
Lucerne	6		

#### Southern New South Wales, Victoria, South Australia & Western Australia

Plant-back periods for rotational crops following application of GRINDSTONE® in cereals for rates up to 20 mL/ha.

Crops	Plant-back Period (months)
Barley, Canola, Wheat	9
Chickpea, Faba bean, Field pea, Lucerne, Lupin, Medic, Subclover	20

For tank-mix with Metsulfuron-methyl:

Users should be aware that there could be varietal differences in crop sensitivity and should seek the most recent data from the registrant.

Soil pH	Crops	Rainfall*	Plantback period
5.6-8.5	Wheat, Barley, Canola (Imidazolinone tolerant varieties only), Triticale	50-100 mm	4 months
	Canola	>300 mm	9 months
		<300 mm	20 months
	Faba beans	All	20 months
8.6 and above	Tolerance of crops (grown through to maturity) should be determined on a small scale, in the previous season, before sowing to larger areas.		

\*Rainfall – must be sufficient and of distribution to ensure soil wetting to 100 mm for longer than 1 week, for 4-month plantback time. For 9 month or longer plantback times, at least 300 mm must have fallen between treatment and desired replant time, with more than 100 mm of that over the warm months of summer to autumn to ensure soil wetting to depth of 100 mm for longer than 2 weeks.  
Breakdown is fastest in warm, wet and acidic conditions and slower in cold, dry and alkaline conditions.

For winter crops such as chickpea, linseed, lucerne, medic, oats, safflower and subclover and for summer crops such as cotton, Japanese millet, maize, mung beans, panorama millet, sorghum, soybean, sunflower, and white French millet please consult Adama Australia for advice on plantback periods.

For tank mix with Fightback® (or equivalent rate of registered picloram + triclopyr products) only:

- Picloram remains active in the soil for extended periods depending on rate of application, soil type, rainfall, temperature, humidity, soil moisture and soil organic matter.
- The plantback periods listed below do not commence until residues of treated plants/weeds have broken down and released picloram into the soil to be degraded.

#### Black Cracking Clay Soils

##### Northern New South Wales, NT & Queensland

See below table for Plant-back periods for rotational crops following application of up to 20 mL/ha GRINDSTONE® and up to 600 mL/ha Fightback® on black cracking clay soils. These plant-back periods are based on a normal rainfall pattern. During drought conditions (or when the rainfall is less than 100 mm for a period of 4 months or greater) the plant-back period may be significantly longer.

#### Table A: Boom Application

Plant-back periods for crops following the application of FIGHTBACK® for rates up to 600 mL/ha.

Rate/ha	7 mL GRINDSTONE® + up to 200 mL Fightback®	10 mL GRINDSTONE® + up to 300 mL Fightback®	13 mL GRINDSTONE® + up to 400 mL Fightback®	20 mL GRINDSTONE® + up to 600 mL Fightback®
<b>WINTER CROP</b>	<b>Plant-back period (Months)</b>			
Wheat	2	2	4	4
Barley	2	2	4	4
Canola	2	4	4	4
Faba beans	4	4	6	6
Chickpea	4	6	6	6
Lucerne	6	9	9	9

<b>SUMMER CROP</b>	<b>Plant-back period (Months)</b>
<b>Rate/ha</b>	<b>20 mL GRINDSTONE® + up to 200 mL Fightback®</b>
Sorghum	3
Cotton	12
Mung bean	12
Soybean	12

For rates of Fightback® greater than 200 mL/ha – DO NOT rotate susceptible plants until adequately sensitive bioassay or chemical test shows that no detectable picloram, is present in soil.

For soil types other than black cracking soils, DO NOT plant susceptible broadleaf crops within 12 months of applying Fightback®. Cereal crops and grasses can be safely sown 2 months after using Fightback®.

**Table B: Blanket Wiper Application**

Plant-back periods (months) for crops following blanket wiper application of GRINDSTONE®.	
CROP	Months
Broadleaf crops	18
Lucerne	6 (This will allow any potential soil residues to dissipate, if any, and allow effective control.)

**Southern New South Wales**

Plant-back periods (months) for crops following blanket wiper application of GRINDSTONE® for rates up to 17 mL/ha and up to 500 mL/ha Fightback®	
CROP	Months
Barley, Canola, Wheat	9
Chickpea, Faba bean, Field pea, Lucerne, Lupin, Medic, Subclover	24

**Stubble from Treated Crops**

Ensure that harvesters effectively spread crop straw and do not leave a heavy 'header trail' after harvest. Burn (if legal in the area) or bale and remove, slash or incorporate stubble as soon as practical after harvest and for as long as possible before planting next year to allow microbial breakdown of any residues in straw. Heavy stubble loads may carry more residues into the following season. Where heavy stubble burdens and/or non-wetting soils exist and less than the recommended amount of rain has fallen from application to planting the susceptible crop (see above), only plant a winter or summer cereal.

**Where GRINDSTONE® residue carryover is suspected and susceptible crops are to be planted, test the treated area as follows:**

Field bioassay – where rain allows, plant a small area of the susceptible crop 4 to 6 weeks before desired planting date and take note of any symptoms of injury. If any herbicide symptoms are observed, only plant a cereal crop (see plantback recommendations).

Pot bioassay – where not practical to do field bioassay, a simple bioassay can be conducted 4 to 6 weeks before desired planting date by collecting at least 10 spade spits of soil to a depth of 200 mm from around the paddock and thoroughly mixing the soil together. Place some of this soil in a shallow container to a depth of 3-5 cm and sow 100 seeds of the susceptible plant to be grown (subterranean or white clover is a good indicator plant where it is not practical to use the susceptible plant) into the soil. Keep in a warm and well-lit location and ensure the soil does not dry out. After crop emergence, check the number of plants that have germinated and seedling vigour. Symptoms of GRINDSTONE® residues include non-germination or low plant emergence, leaf cupping, leaf whitening, stem elongation and twisting. If these symptoms occur do not grow the susceptible plant. Repeat the bioassay again after a further time interval. Lentils are highly sensitive to GRINDSTONE® and therefore are a good test species for a bioassay.

**COMPATIBILITY**

Grindstone® is compatible with a range of Adama herbicides and other crop protection products. Always follow the correct mixing order. Refer to the Grindstone® physical compatibility guide and correct mixing order guide at adama.com before use.

**MIXING**

GRINDSTONE® can be mixed with water only.

Mix only sufficient chemical for each day's use and avoid storing mix.

Half fill the spray tank with water and add the required quantity of GRINDSTONE® and complete filling. Agitate continuously to ensure thorough mixing before and during application.

Tank mixtures: Wettable powder or dry flowable formulations (e.g. water dispersible granules) should be added to the spray tank first, followed by suspension concentrates (flowables), water soluble salts (e.g. GRINDSTONE®) and then emulsifiable concentrate formulations (e.g. Flagship™ 400 EC). Add spraying oils and surfactants (wettors) last, if required.

**USE OF SURFACTANT/WETTING AGENT**

- Use BS-1000\* or equivalent Biodegradable surfactant (when mixed with metsulfuron-methyl)
- Uptake\* Spraying Oil (when mixed with Mandate®)

Not all surfactants or crop oils are of equal quality. Adama Australia does not support the use of alternative products other than those listed in the compatibility section.

**Instructions specific for woody and herbaceous weed control**

- If a specific surfactant/wetting agent is not listed in the DIRECTIONS FOR USE table, or when mixing with glyphosate use BS-1000\* or equivalent at 100 mL/100 L of final spray solution (0.1 % v/v).
- When Pulse Penetrant is recommended in the DIRECTIONS FOR USE table, use 20 mL/10 L (gas gun application) or 100 or 200 mL/100 L (boom or high-volume applications) (i.e. 0.1 or 0.2% v/v)
- When Uptake Spraying Oil is recommended in the DIRECTIONS FOR USE table, use 500 mL/100 L of final spray solution (i.e. 0.5 % v/v).

**Instructions specific for treatment of pasture and pasture renovation**

- Always add BS-1000\* or equivalent at 200 mL/100 L of final spray solution (0.2 % v/v).

**APPLICATION**

**1. Cropping and Fallow Situations**

Ground Boom Spraying: Apply in 50-100 L water/ha using a coarse spray through accurately calibrated equipment. Avoid overlapping and shut off spray booms while starting, turning, slowing or stopping as injury to the crop may occur.

*For tank-mix with Flagship™ 400 only-* A. Apply with an accurately calibrated boom sprayer to give COARSE spray quality, in at least 80 L/ha water. Set the boom at a height to ensure a double overlap of the nozzle pattern.

Aerial Application: Apply in not less than 30 L water/ha using a coarse spray through accurately calibrated equipment.

Blanket Wiper Application:

Blanket needs to be made from durable and wettable material with a rigid backing.

Blanket should be rigidly mounted behind motorised vehicle (eg. tractor, 4-wheel drive vehicle) and set low but never touching the ground. The chemical solution should be fed to the blanket at a flow rate sufficient to keep the blanket wet but not dripping. In thick patches the blanket may require more frequent solution recharge (rewetting).

Ideally, a scraper bar should be mounted in front of the blanket in order to scrape or damage the bark (but not sever the stems) prior to the blanket wiping the stems. This scraper may be mounted at the front of the vehicle.

Two passes (in opposite direction) with the blanket increases the contact with the plant. Ground speeds of 10–15 kph are ideal for blanket wiping application.

**2. Pasture and Non-cropping Situations**  
**WOODY WEED SITUATIONS**

Weeds need to be actively growing for herbicides to have optimum effect. Delay treatment until all regrowth has had time to grow to approximately 1 metre in situations which have been bulldozed, slashed, burnt, ploughed, or areas having a previous chemical treatment.



**High Volume application:** Spray foliage stems and canes until wet. Ensure coverage is uniform and complete. Use larger nozzles and higher pressures for larger bushes. Indicative spray volumes are 500-1000 L/ha for small herbaceous weeds such as ragwort.

**Handgun:** Apply the recommended mix to give full coverage of leaves and stems through a No. 6 to 8 tip at 700 to 1500 kPa (400 to 500 kPa for St John's wort). A spray volume of 3000 to 4000 L per infested hectare of 1 to 2 metre high blackberry (30 to 40 L/100 m<sup>2</sup>) should be used. Use 2000 L of spray mixture/ha of galenia infestation (i.e., 20 L/100 m<sup>2</sup> infested area).

**Knapsack & 12 volt Sprayer Packs:** Apply the recommended spray mix to give full coverage of leaves and stems. Only recommended for the control of herbaceous weeds, such as capeweed, fireweed and spear thistle, and woody weeds that are not regrowth less than 60 cm high or 60 cm diameter.

#### Low Volume High Concentrate Application Techniques

Good control will be achieved, similar to high volume application, where bush size enables good coverage of entire bush. Use a marking agent, as recommended by the equipment manufacturers, to check spray coverage.

**Gas Gun Application:** Apply 50 mL shots to 4-5 m<sup>2</sup> of surface area of the weed to ensure good coverage of all foliage is achieved. This relates to 20 droplets/cm<sup>2</sup> of leaf surface. The use of a suitable marker dye is recommended.

**Sprinkler sprayer:** This technique involves using a micro sprinkler that is connected to a hollow fibre glass rod attached to a pneumatic knapsack sprayer. Use at low pressures (50 to 200 kPa) and apply with a slow sweeping action over the top of the plants ensuring even coverage on the leaves.

**Ground Boom Spray Application:** Apply in a minimum of 70 L prepared spray/ha using a coarse spray. Increase to 200 L/ha or more in dense stands (200 L/ha for galenia and St. John's wort and 600 L of water/ha for sickle pod)

**Aerial Application (by helicopter only):** Apply using at least a coarse spray through accurately calibrated equipment. Apply in a minimum of 100 L/ha on blackberries or 60 L/ha on *Mimosa pigra*. Higher water volumes up to 200 L/ha may be necessary on *Mimosa pigra* to ensure adequate coverage where bushes are large, and terrain is steep. Spray using the half overlap opposite pass technique.

**Aircraft:** Apply in 200 L of water/ha using an aircraft to apply 100 L per pass on a double overlap pattern using nozzle configurations to produce coarse to very coarse droplets.

#### Controlled Droplet Application (C.D.A.)

Results similar to high volume spraying can be obtained using Micron Herbi or similar equipment. Select a nozzle to give a flow rate of 2 mL/sec and sweeping action of approximately 1 m/sec to ensure a droplet density of 20/cm<sup>2</sup>. Use a marking agent, as recommended by the equipment manufacturers, to check spray coverage. Also, consult directions provided with C.D.A. unit.

#### **CLEANING SPRAY EQUIPMENT**

**Rinse water should be discharged onto a designated disposal area or, if this is unavailable, onto wasteland away from desirable plants and water courses.**

**Rinsing:** After using GRINDSTONE® Herbicide, empty the tank completely and drain the whole system. Thoroughly wash inside the spray unit using a pressure hose. Drain, and clean any filters in the tank, pump, lines, hoses and nozzles.

After cleaning the tank as above, quarter fill with clean water and circulate through the pump, lines, hoses and nozzles. Drain and repeat the rinsing procedure twice.

**Decontamination (before spraying cotton and other sensitive crops; see PROTECTION OF CROPS, NATIVES AND OTHER NON-TARGET PLANTS):**

#### For tank-mixtures with Flagship™400 EC or FIGHTBACK®:

Wash the tank and rinse the system as above. Then quarter fill the tank and add a standard alkali-based laundry detergent at 500 g (or mL)/100 L water and circulate throughout the system for at least 15 minutes. If using a concentrated laundry detergent use 250 g (or mL)/100 L water. Do not use chlorine-based cleaners.

Drain the whole system. Remove filters and nozzles and clean them separately. Finally flush the system with clean water and allow draining.

#### For tank-mixtures with metsulfuron-methyl:

- After rinsing the tank as above, fill the tank with clean water and add 300 mL household chlorine bleach (containing 4% chlorine) per 100 L of water. Household bleach should be less than 12 months old and stored away from direct sunlight. Flush through boom and hoses then allow to stand for 15 minutes with agitation engaged, then drain.
- Drain tank, then flush tank, boom and hoses with clean water for a minimum of 10 minutes.
- Nozzles, screens, filters, relief valves, dump lines, caps and taps at the end of spray lines, tank lids, flow meters, lines to pressure gauges, external tank indicators, induction hoppers, etc should be removed/pulled apart and cleaned separately. To remove traces of chlorine bleach, rinse the tank thoroughly with clean water and flush through hoses and boom.

**CAUTION: DO NOT** use chlorine bleach with ammonia.

**DO NOT** clean equipment in an enclosed area.

#### **PRECAUTIONS**

**Re-entry:** wait until the spray has dried, if prior re-entry is required wear the personal protective equipment as directed in the SAFETY DIRECTIONS section of this label.

#### **PROTECTION OF LIVESTOCK**

**DO NOT** graze or cut treated crops or plants for stock food except as specified under WITHHOLDING PERIODS. It is recommended, however, not to graze treated areas for 2 to 3 days to ensure product efficacy.

Poisonous plants may become more palatable after spraying and stock should be kept away from these plants until they have died down.

#### **PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

**DO NOT** contaminate wetlands or watercourses with this product or used container.

#### **PROTECTION OF CROPS, NATIVES AND OTHER NON-TARGET PLANTS**

**DO NOT** use on land to be cultivated for growing susceptible crops for up to 20 months of applying GRINDSTONE®, except where indicated in the MINIMUM RECROPPING PERIODS section of the GENERAL INSTRUCTIONS. Legumes, vines, vegetables, cotton, tomatoes, ornamentals and many other plants are highly susceptible to this herbicide during both growing and dormant periods. Cereal crops, canola and grasses can be sown safely after using GRINDSTONE®.

This product will kill legumes (clovers, medics) present in the crop at the time of spraying. In the season, following application of this product the regeneration or establishment of sensitive legumes (clover, medics, peas, and lupins) may be adversely affected by soil residues.

**DO NOT** allow spray drift onto sensitive native vegetation or susceptible crops, such as canola, cotton, tomatoes, vines, fruit, potatoes, vegetables, ornamentals, tobacco, lupins and other legumes, safflower, sugar beet, hops, flowers or shade trees. Field peas, faba beans, lentils and vetches are particularly susceptible.

**DO NOT** apply close to or on areas containing roots of desirable vegetation, where treated soil may be washed to areas growing, or to be planted to desirable plants, or on sites where surface water from heavy rain can be expected to run off to areas containing or to be planted to susceptible crops or plants.

**DO NOT** move soil, which may have been sprayed, to areas where desirable plants are to be grown.

## **MANAGEMENT OF RESIDUES IN COMPOST, MULCHES AND ANIMAL WASTE.**

For Tank Mix with Fightback® (picloram) and Flagship™ 400 (fluroxypyr):

**DO NOT** cut pasture for hay or silage production within 6 months of application, where it is intended for use off-farm.

**DO NOT** cut cereals intended for hay or silage production within 6 weeks of application, where it is intended for use off-farm.

**DO NOT** use treated plant material to make compost, mulches or mushroom substrate. **DO NOT** send straw from treated crops off-farm for these purposes or for animal bedding.

**DO NOT** send animal manure, dairy shed and feed pad effluent that has been collected from animals grazing or fed crops treated within the previous 6 months (pasture) or 6 weeks (cereals) off-farm. Spreading/irrigating this manure/effluent may cause damage to clover and other susceptible plants.

**DO NOT** send compost made from animal waste that has been collected from animals grazing or fed crops treated within the previous 6 months (pasture) or 6 weeks (cereals) off-farm. Such compost may cause damage to clover and other susceptible plants.

**DO NOT** apply animal waste (e.g. manure, slurry) collected from animals grazing or fed crops treated within the previous 6 months (pasture) or 6 weeks (cereals) to susceptible plants or land to be used to grow susceptible plants.

**DO NOT** grow susceptible plants within in the relevant plantback period in fields treated with manure/effluent from farms where animals have grazed or been fed treated plants until a field bioassay shows there are no residues in the soil at levels injurious to the susceptible plants (see the crop rotation section).

- To promote herbicide decomposition, manure should be evenly incorporated in the surface soil. Breakdown of residues in decomposing plants or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.

For tank-mix with metsulfuron-methyl only:

**DO NOT** send treated crops off-farm as hay, silage or for use as animal bedding. Aminopyralid residues from treated plants may pass into animal manure, composts, mushroom substrates, mulches and cause injury to sensitive broadleaf plants.

**DO NOT** spread manure from animals that have grazed or consumed forage or hay from treated areas on land used for growing susceptible broadleaf crops.

Ensure that harvesters effectively spread crop straw and do not leave a heavy 'header trail' after harvest. Burn (if legal in the area) or bale and remove, slash or incorporate stubble as soon as practical after harvest and for as long as possible before planting next year to allow microbial breakdown of any residues in straw. Heavy stubble loads may carry more residues into the following season. Where heavy stubble burdens and/or non-wetting soils exist and less than the recommended amount of rain has fallen from application to planting the susceptible crop (see above), only plant a winter or summer cereal.

## **STORAGE AND DISPOSAL**

DrumMUSTER:

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT store near food, feedstuffs, fertilisers or seed. This container can be recycled if it is clean, dry, free of visible residues and has the *drumMUSTER* logo visible. Triple-rinse container for disposal. Dispose of rinsate by adding it to the spray tank. DO NOT dispose of undiluted chemical on site. Wash outside of the container and the cap. Store cleaned container in a sheltered place with cap removed. It will then be acceptable for recycling at any *drumMUSTER* collection or similar container management program site. The cap should not be replaced, but may be taken separately. If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.

60 L, 110L (Mini-bulk Returnable Container)

Store in the closed, original container in a dry, cool, well ventilated area out of direct sunlight. DO NOT store near food, feedstuffs, fertilisers or seed. 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, please return the container to the point of purchase. The container remains the property of Adama Australia.

1000 L (Refillable container)

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT store near food, feedstuffs, fertilisers or seed. 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 Adama Australia should be advised immediately. This minibulk container is reusable and remains the property of Adama Australia. DO NOT rinse empty container. Empty contents fully into application equipment. Close all valves and return to the point of supply for refill or storage. No other liquid, solid or pesticide product should be put into it. When empty return to Adama Australia for cleaning, relabelling and refilling.

## **SPILL AND LEAK MANAGEMENT**

Do not touch or walk-through spilled material. Wear a face shield or goggles, overalls buttoned to neck and wrist, chemical resistant gloves and footwear. Stop leak when safe to do so. Dam area and prevent entry into waterways, and drains.

Small spills/leaks: Wear protective equipment (see SAFETY DIRECTIONS). Apply absorbent material such as earth, sand, clay granules or cat litter to the spill. Sweep up material for disposal when absorption is completed and place in sealable container for disposal. Spill residues may be cleaned using water and detergent. Contain and absorb wash water for disposal. Absorb and collect washings and place in the same sealable container for disposal.

## **SAFETY DIRECTIONS**

May irritate skin, will damage eyes. Avoid contact with skin and eyes.

When opening the container and preparing the spray, wear cotton overalls buttoned to the neck and wrists (or equivalent clothing) and face shield or goggles. Wash hands after use. After each day's use, wash face shield or goggles and contaminated clothing. WHEN USING TOGETHER WITH OTHER PRODUCTS, CONSULT THEIR LABEL SAFETY DIRECTIONS.

## **FIRST AID**

If poisoning occurs contact a doctor or Poisons Information Centre. Phone Australia 13 11 26.

If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

## **SDS**

Additional information is listed in the safety data sheet (SDS). A safety data sheet for GRINDSTONE® Herbicide is available from [adama.com](http://adama.com) or call Customer Service on 1800 423 262.

**CONDITIONS OF SALE:** The use of GRINDSTONE® Herbicide being beyond the control of the manufacturer, no warranty expressed or implied is given by Adama Australia regarding its suitability, fitness or efficiency for any purpose for which it is used by the buyer, whether in accordance with the directions or not and Adama Australia accepts no responsibility for any consequence whatsoever from the use of this product.

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\*Other trademark

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