

**READ SAFETY DIRECTIONS BEFORE OPENING OR USING**

# **Agro-Essence Metsulfuron-methyl 600 Herbicide**

**ACTIVE CONSTITUENT: 600 g/kg METSULFURON-METHYL**



**For the control of brush and broadleaf weeds in native pastures, rights of way, commercial and industrial areas and for the control of certain broadleaved weeds in winter cereal crops as per the directions for use**

**IMPORTANT: READ THE ATTACHED LEAFLET BEFORE USING THIS  
PRODUCT**

**CONTENTS: 200g, 500g, 1kg, 2kg**

Agro-Alliance (Australia) Pty Ltd  
ABN: 11 130 864 603  
2 Mavron Street  
Ashwood VIC 3147  
Ph: 03 8644 2677  
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## **PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

DO NOT apply to weeds growing in or over water.

DO NOT spray across open bodies of water.

## **PROTECTION OF LIVESTOCK**

There is a nil withholding period for this product and stock may continue to graze where the product has been used in pasture situations. It is recommended that stock are removed from the pasture for about 3 days to ensure product efficacy. Certain plants such as bracken are naturally toxic to stock. When toxic plants are present, it is recommended that grazing be delayed until complete browning of treated plants has occurred.

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

DO NOT apply or drain or flush equipment on or near desirable trees or other plants or on areas where their roots may extend or in locations where the chemical may be washed or moved into contact with their roots.

DO NOT apply under weather conditions, or from spraying equipment, that may cause drift onto nearby susceptible plants/crops, cropping lands or pastures.

## **STORAGE AND DISPOSAL**

Keep out of reach of children.

Store in the closed original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

## **SAFETY DIRECTIONS**

Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. When opening the container and preparing the solution wear elbow-length PVC gloves and goggles. If applying by hand wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves and goggles and contaminated clothing.

## **FIRST AID**

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

## **MATERIAL SAFETY DATA SHEET**

Additional information is listed in the Material Safety Data Sheet, which is available from the supplier.

## **CONDITIONS OF SALE**

The use of Agro-Essence Metsulfuron-methyl 600 Herbicide being beyond the control of the manufacturer, no warranty expressed or implied is given by Agro-Alliance (Australia) Pty Ltd 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 Agro-Alliance (Australia) Pty Ltd accepts with no responsibility for any consequences whatsoever resulting from the use of this product.

APVMA Approval Number: 67195/55435

In a Transport Emergency Dial 000 Police or Fire Brigade

Batch No:

Date of Manufacture:

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# **Agro-Essence Metsulfuron-methyl 600 Herbicide**

**ACTIVE CONSTITUENT: 600 g/kg METSULFURON METHYL**



**For the control of brush and broadleaf weeds in native pastures, rights of way, commercial and industrial areas and for the control of certain broadleaved weeds in winter cereal crops as per the directions for use**

**IMPORTANT: READ THIS LEAFLET BEFORE USE**

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## DIRECTIONS FOR USE – BRUSH APPLICATIONS

### RESTRAINTS

**DO NOT** spray if rainfall is expected within 4 hours.

**DO NOT** store the prepared spray for more than 2 days.

**DO NOT** store tank mixes with other products.

**DO NOT** apply to pastures based on *Paspalum notatum* or *Setaria spp.* as their vegetative growth will be reduced.

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

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

Situation	Weeds Controlled	State	Rate*			Critical Comments <b>FOR ALL WEEDS: Apply when target weed is in active growth and not under stress from waterlogging, drought etc.</b>
			Handgun (g/100L)	Ground Boom (g/ha)	Gas Gun (g/L)	
Native Pastures **, Rights of Way, Commercial and Industrial Areas	Alligator Weed ( <i>Alternanthera philoxeroides</i> )	All States	10	80		Do not apply in aquatic situations. For complete control, follow-up applications are necessary for at least the next two seasons.
	Apple Box ( <i>Angophora floribunda</i> ), Messmate Stringybark ( <i>E. obliqua</i> ), Narrowleaf Peppermint ( <i>E. radiata</i> ), Blakely's Red Gum ( <i>E. blakelyi</i> ), Yellow box ( <i>E. melliodora</i> )		10 + Rygel Organowett (200mL/ 100L)		1 + Rygel Organowett (10mL/ 5L)	Apply to plants up to 4m high. Ensure thorough coverage. Avoid spraying when plants are stressed. Results cannot be guaranteed where suckers originate from large lignotubers.
	Australian Blackthorn ( <i>Bursaria spinosa</i> )		10		1 + Rygel Organowett (10mL/ 5L)	Handgun - apply to ensure thorough coverage but not to cause run-off.
	Bellyache Bush ( <i>Jatropha gossypifolia</i> )		10 + Rygel Organowett (200mL /100L)			

Situation	Weeds Controlled	State	Rate*			Critical Comments <b>FOR ALL WEEDS: Apply when target weed is in active growth and not under stress from waterlogging, drought etc.</b>
			Handgun (g/100L)	Ground Boom (g/ha)	Gas Gun (g/L)	
Native Pastures **, Rights of Way, Commercial and Industrial Areas	Blackberry ( <i>Rubus spp.</i> )	All States	10 + a mineral crop oil (1L/100L)		1 + Rygel Organowett (10mL/ 5L)	Spray to thoroughly wet all foliage and canes. Ensure peripheral runners are sprayed. Tas: Apply after petal fall. Do not apply to bushes bearing mature fruit. Vic: Apply between December and April
	Bitou Bush/ Boneseed ( <i>Chrysanthemoides monilifera</i> )		10			Minimise contact with desirable plants. Apply to point of run-off.
	Bridal Creeper ( <i>Myrsiphyllum asparagoides</i> )		5		Apply from mid-June to late August. To achieve complete control follow-up applications over at least 2 seasons are required. To minimise damage to native vegetation, water volumes of 500-800L/ha are recommended.	
	Common Bracken ( <i>Pteridium esculentum</i> )		10	60	Apply after 75% of fronds are fully expanded. Spray to thoroughly wet all foliage but not to cause run-off. For boom application adjust boom height to ensure complete spray overlap.	
	Crofton Weed ( <i>Eupatorium adenophorum</i> )		15		Spray to thoroughly wet all foliage but not to cause run-off. When bushes are in thickets ensure good spray penetration. Apply up to early flowering. Best results are obtained on younger plants. Should regrowth occur, re-treat in the next growth period.	
	Darling Pea ( <i>Swainsona spp.</i> )			10	Spray during spring.	
	Fennel ( <i>Foeniculum vulgare</i> )		10			
	Golden Dodder ( <i>Cuscuta australis</i> )		1		Apply as a spot spray to point of run-off at pre-flowering. Ensure correct coverage of infested area.	

Situation	Weeds Controlled	State	Rate*			Critical Comments <b>FOR ALL WEEDS: Apply when target weed is in active growth and not under stress from waterlogging, drought etc.</b>	
			Handgun (g/100L)	Ground Boom (g/ha)	Gas Gun (g/L)		
Native Pastures **, Rights of Way, Commercial and Industrial Areas	Great Mullein ( <i>Verbascum thapsus</i> )	All States		20 + Rygel Organowett (200mL /100L)		Apply to rosettes during stem elongation during spring when soil moisture is good. Regrowth may occur if plants are treated when growing conditions are not good.	
	Harrisia Cactus ( <i>Eriocereus spp.</i> )		20			Spray to thoroughly wet using water volumes of 1,000 --1,500 litres per hectare. A follow-up treatment may be necessary.	
	Hawthorn ( <i>Crataegus spp</i> )		10			Spray to thoroughly wet all foliage but not to cause run-off.	
	Inkweed ( <i>Phytolacca octandra</i> )		5				
	Japanese Sunflower ( <i>Tithonia diversifolia</i> )		10				
	Kangaroo Thorn ( <i>Acacia paradoxa</i> )			10			Do not apply to bushes greater than 2.5m high.
	Mistflower/ Creeping Crofton ( <i>Eupatorium riparium</i> )			5			Spray to thoroughly wet all foliage but not to cause run-off. Apply up to early flowering.
	Noogoora burr ( <i>Xanthium pungens</i> )			7.5			Plants sprayed under moisture stress will not be controlled.
	Parthenium Weed ( <i>Parthenium hysterophorus</i> )			5	7		Handgun - Spray to thoroughly wet all foliage but not to cause run-off.
				5			Boom - For pastures only - Apply up to the rosette stage ensuring thorough spray coverage. Adjust boom height to ensure thorough spray overlap.
Paterson's Curse/ Salvation Jane ( <i>Echium plantagineum</i> )		5	15		Handgun - Spray to thoroughly wet all foliage but not to cause run-off. Boom - Adjust boom height to ensure correct overlap. WA only: Apply up to early flowering i.e. August - September.		

Situation	Weeds Controlled	State	Rate*			Critical Comments <b>FOR ALL WEEDS: Apply when target weed is in active growth and not under stress from waterlogging, drought etc.</b>
			Handgun (g/100L)	Ground Boom (g/ha)	Gas Gun (g/L)	
Native Pastures **, Rights of Way, Commercial and Industrial Areas	Privet ( <i>Ligustrum spp.</i> )	All States	10		1 + Rygel Organowett (10mL/ 5L)	Do not apply to bushes more than 3 m tall. Ensure complete spray coverage. Complete foliar spray coverage is essential for control; partial spray coverage will result in recovery.
	Ragwort ( <i>Senecio jacobaea</i> )		5	15		Apply to plants at the rosette to cabbage stage.
	Rubber vine ( <i>Cryptostegia grandiflora</i> )		15			Do not apply to bushes more than 3 m tall. Apply October to April, ensuring thorough spray coverage of all foliage and leaders. Incomplete coverage will result in re-growth. DO NOT treat plants infected with rust.
	Smartweed ( <i>Polygonum spp.</i> )		10	10	-	
	Sweet Briar ( <i>Rosa rubiginosa</i> )		10		1 + Rygel Organowett (10mL/ 5L)	Do not apply when bushes are stressed, when leaf fall has commenced or after the end of February. Handgun - Spray to thoroughly wet all foliage but not to cause run-off. Vic only - Gasgun: Do not apply to bushes more than 2 m tall. Apply with shots of 25mL of dilute product.
	Wait-A-While ( <i>Cesalpinia decapelata</i> )		10			
	Wild Turnip ( <i>Brassica tournefortii</i> )		5			

**WITHHOLDING PERIOD – NOT REQUIRED WHEN USED AS DIRECTED**

\* Always add a surfactant/wetting agent

\*\* Legumes in the pasture will be damaged

**AERIAL APPLICATION BY HELICOPTER****RESTRAINTS:**

DO NOT apply if rainfall is expected within 2 hours of spraying.

DO NOT store tank mixes with other products.

DO NOT store the prepared spray for more than 2 days.

Situation	Weeds Controlled	States	Rate * (g/ha)	Critical Comments <b>FOR ALL WEEDS: Apply when weeds are actively growing and not stressed by conditions such as waterlogging, moisture etc.</b>
Pastures **, Rights of Way, Commercial and Industrial Areas	Blackberry ( <i>Rubus spp.</i> )	NSW, Tas, Vic only	160 g/ha	Ensure all foliage is thoroughly covered including peripheral runners. Use at least 100L of prepared spray per hectare. Tas: Apply after petal fall. Do not apply to bushes bearing mature fruit. Vic: Apply between December and April
Flood plains	<i>Mimosa pigra</i>	NT only	50 or 60	Use the higher rate when air temperature exceeds 35 <sup>0</sup> C. Apply in at least 60L/ha of clean water. Use D6 or D8 nozzles with 45 swirl plates pressurised to 210 kPa to give large droplet size. Add a non-ionic surfactant.

\* Always add a surfactant/wetting agent

\*\* Legumes in the pasture will be damaged

**WITHHOLDING PERIOD – NOT REQUIRED WHEN USED AS DIRECTED**

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



**AGRO-ESSENCE METSULFURON-METHYL 600 HERBICIDE + GLPHOSATE 360 TANK MIX (always refer to First Aid, Safety Direction, Resistant Weeds Warning and any other restrictions for Glyphosate 360)**

FOR ALL STATES

**RESTRAINTS**

DO NOT apply if rainfall is expected within 6 hours of spraying.

DO NOT store tank mixes with other products.

DO NOT store the prepared spray for more than 2 days.

DO NOT apply to plants wet with dew or rain or if droplets run-off when plants are disturbed.

Results may be slow to appear and may not be visible for 3-6 weeks. Full brownout may take 3-6 months.

Situation	Weeds Controlled	Rate		Critical Comments
		Always add Rygel Organowett Penetrant		
		Ground Boom or Helicopter	Handgun or Knapsack	
Native Pastures **, Rights of Way, Commercial and Industrial Areas, Domestic and Public Service Areas	Blackberry ( <i>Rubus spp</i> )	60g + 8L glyphosate (360g/L)	3g + 400mL glyphosate (360g/L) per 100L water	Apply from flowering and before leaf yellowing. Do not apply to bushes bearing mature fruit.
	Bracken ( <i>Pteridium esculentum</i> )	30g +4L glyphosate (360g/L)		Apply when fronds are fully expanded but before first frosts. Refer to boom spraying section if applying by boom spray.
	Gorse ( <i>Ulex europaeus</i> )			Do not apply in spring. Apply to actively growing plants.
	Lantana ( <i>Lantana camara</i> )			Apply to actively growing plants, which are not drought stressed.
	St Johns Wort ( <i>Hypericum perforatum</i> )			Apply in Spring to Summer to actively growing plants.
	Sweet Briar ( <i>Rosa rubiginosa</i> )			Apply when plants are in full leaf. Do not apply once leaf fall has commenced.

**WITHHOLDING PERIOD – NOT REQUIRED WHEN USED AS DIRECTED**

\*\* Legumes in the pasture will be damaged

**AGRO-ESSENCE METSULFURON-METHYL 600 HERBICIDE + GLYPHOSATE 360 TANK MIX (CONTINUED) (always refer to First Aid, Safety Direction, Resistant Weeds Warning and any other restrictions for Glyphosate 360)**

FOR ALL STATES

**RESTRAINTS**

DO NOT apply if rainfall is expected within 6 hours of spraying.

DO NOT store tank mixes with other products.

DO NOT store the prepared spray for more than 2 days.

DO NOT apply to plants wet with dew or rain or if droplets run-off when plants are disturbed.

Results may be slow to appear and may not be visible for 3-6 weeks. Full brownout may take 3-6 months.

Situation	Weeds Controlled	States	Handgun or Knapsack Rate per 100 Litres Always add a non-ionic surfactant unless otherwise specified	Critical Comments
Native Pastures **, Rights of Way, Commercial and Industrial Areas, Domestic and Public Service Areas	Apple box ( <i>Angophora floribunda</i> )	NSW only	10g + 200mL glyphosate (360g/L) + Rygel Organowett (200mL/100L)	Spray plants up to 4m high ensuring thorough coverage. Plants growing from large lignotubers may not be controlled
	Australian blackthorn ( <i>Bursaria spinosa</i> )	NSW, Qld, Vic, Tas only	10g + 200mL glyphosate (360g/L)	Spray to point of run off.
	Bitou Bush/ Boneseed ( <i>Chrysanthemoides monilifera</i> )	NSW, QLD, VIC, SA ONLY		Ensure thorough coverage. Minimise contact with desirable species.
	Blackberry ( <i>Rubus spp.</i> )	All States		Ensure thorough coverage. Peripheral runners must also be covered to minimise regrowth. Apply between January and April. TAS ONLY: Apply after petal fall. Do not apply to bushes bearing mature fruit.
	Messmate Stringybark ( <i>E. obliqua</i> ) Narrowleaf Peppermint ( <i>E. radiata</i> ) Blakely's Red Gum ( <i>E. blakelyi</i> ) Yellow box ( <i>E. melliodora</i> )	NSW only	10g + 200mL glyphosate (360g/L) + Rygel Organowett (200mL/100L)	Spray plants up to 4 m high. Trees growing form large lignotubers may not be controlled.
	Gorse ( <i>Ulex europaeus</i> )	NSW, Vic, Tas, SA only		Ensure thorough coverage and penetration of spray into the bush. Apply to plants up to 2m tall.

Situation	Weeds Controlled	States	Handgun or Knapsack Rate per 100 Litres Always add a non-ionic surfactant unless otherwise specified	Critical Comments
	Hawthorn ( <i>Crataegus leavigata</i> )	NSW only	10g + 200mL glyphosate (360g/L)	Spray to point of run off.
	Lantana ( <i>Lantana camara</i> )	NSW, Qld only		Ensure thorough coverage and penetration of spray into the bush. Apply to plants up to 2m tall.
	Privet ( <i>Ligustrum spp.</i> )	NSW, Qld only		Apply to bushes up to 3m high. Ensure thorough coverage. If plants are not adequately covered plants may not be controlled.
	St Johns Wort ( <i>Hypericum perforatum</i> )	NSW, Vic, SA, WA only		Always add a non-ionic surfactant at the rate of 100mL/100L. Spray to wet all foliage, but not to cause run-off.
	Sweet Briar ( <i>Rosa rubiginosa</i> )	NSW, VIC, Tas SA only		Do not apply after leaf fall has commenced or after the end of February. Spray foliage to point of run-off.
	Tree of Heaven ( <i>Ailanthus altissima</i> )	NSW only		

**WITHHOLDING PERIOD – NOT REQUIRED WHEN USED AS DIRECTED**

\*\* LEGUMES IN THE PASTURE WILL BE DAMAGED

## ESTABLISHED PASTURES AND PASTURE RENOVATION

### DIRECTIONS FOR USE

#### RESTRAINTS:

DO NOT spray if rainfall is expected within 4 hours.

DO NOT store the prepared spray for more than 2 days.

DO NOT store tank mixes with other products.

DO NOT apply to newly sown pastures as severe damage may result.

DO NOT use on crops grown for pasture seed.

DO NOT apply to weeds under stress or that are not actively growing.

Crops	Weeds Controlled	States	Rate (g/ha)	Critical Comments
<b>ESTABLISHED PASTURES</b> TOLERANT GRASS SPECIES - Perennial phalaris and Perennial Cocksfoot (Stands must be older than 1 year)  <b>or</b>  <b>PASTURE RENOVATION</b> Use to reduce weeds in established pastures before sowing a new pasture the following season	Annual Clover ( <i>Trifolium sp.</i> )	All States	5g	Apply before flowering
	Annual Medics ( <i>Medicago sp.</i> )	NSW, Vic, SA, Tas, WA only	5g	For best results apply before flowering
	Cape Tulip ( <i>Homeria sp.</i> ) One and Two leaf	NSW, Vic, SA, Tas, WA only	5g	Apply at bulb exhaustion usually during July/ early August. Repeat application may be required to obtain control.
	Docks ( <i>Rumex spp.</i> )	All States	5g - seedlings 10g - established	For best results apply in spring prior to bolting.
	Doublegee ( <i>Emex australis</i> )	WA only	5 or 10g	Use the higher rate on dense infestations. Apply up to the 6 leaf stage.
	Erodium/ Storksbill/ Wild Geranium ( <i>Erodium spp.</i> )	NSW, Vic, SA, Tas only		Use the higher rate on dense infestations. Apply before flowering.
<b>ESTABLISHED PASTURES</b> TOLERANT GRASS SPECIES - Perennial phalaris and Perennial Cocksfoot (Stands must be older than 1 year)	Onion Grass/ Guildford Grass ( <i>Romula rosea</i> )	NSW, Vic, Tas, SA, WA only	15g	Apply at bulb exhaustion usually late June/ July before the onset of browning off caused by Helminthosporium fungus. If mixing with glyphosate use 10g/ha.
	Paterson's Curse/ Salvation Jane ( <i>Echium plantagineum</i> )	All States	10 or 15 g	Use the lower rate on small plants and the higher rate before bolting/ flowering.
	Ragwort ( <i>Senecio jacobaea</i> )	NSW, Vic, SA, Tas only	15g	Apply at the rosette to cabbage stage when plants are actively growing.

Crops	Weeds Controlled	States	Rate (g/ha)	Critical Comments
<b>or</b>  <b>PASTURE RENOVATION</b> Use to reduce weeds in established pastures before sowing a new pasture the following season	Sorrel ( <i>Rumex acetosella</i> )	NSW, Vic, SA, Tas, WA only	5g - seedlings 10g - established	For best results apply in spring before seed heads appear.
	Soursob ( <i>Oxalis pes-caprae</i> )		5 or 10g	For best results apply before flowering. Use the higher rate on dense stands.
	Wild Garlic ( <i>Allium vineale</i> )		15g	Apply at bulb exhaustion usually during July/ early August. Repeat application may be required to obtain control.

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**WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED**

## **GENERAL INSTRUCTIONS – BRUSH APPLICATIONS, ESTABLISHED PASTURES AND PASTURE RENOVATION**

Agro-Essence Metsulfuron-methyl 600 Herbicide is a selective herbicide, which is rapidly absorbed by root and leaves.

- Always add a surfactant/wetting agent.
- Best results are achieved when:
  1. Application is made to actively growing plants, which are not stressed by any factors such as dry weather conditions, waterlogging etc.
  2. Plants to be treated are thoroughly covered. This is essential to achieve maximum herbicide uptake.
- Regrowth may occur if the product is applied when plants are stressed or if complete spray coverage is not achieved. If regrowth does occur, re-treatment at the rates on this label is recommended. For blackberries re-treatment should only be undertaken if plants are at least 1 metre tall. This may not be until 2 years after the initial application. Legumes will be removed from pasture if over-sprayed with Agro-Essence Metsulfuron-methyl 600 Herbicide.
- Legumes are extremely sensitive to Agro-Essence Metsulfuron-methyl 600 Herbicide and will be removed from the pasture if over sprayed.
- Introduced grass species may be severely damaged if over-sprayed.
- Application to weeds that are not actively growing due to adverse conditions may result in weeds only being stunted or suppressed.
- Some grasses will be damaged in pasture sprayed with this product and biomass production may be reduced for several months.
- If weeds have been previously sprayed with other herbicides or if the weeds have been burned or slashed ensure 2 years have elapsed before treating with Agro-Essence Metsulfuron-methyl 600 Herbicide.
- It is recommended that this product not be applied to bushes bearing mature blackberries due to the collection of blackberries for food purposes.
- Some temporary yellowing and some stunting may occur when used on Perennial Phalaris and/ or established Perennial cocksfoot.
- ALL grasses and legumes can be damaged and/or removed by a Agro-Essence Metsulfuron/glyphosate mixture.
- The following weeds will not be controlled: Barley grass (*Hordeum leporinum*), Brome grass (*Bromus unioloides*), Silvergrass (*Vulpia spp.*), Winter Grass (*Poa annua*).
- Best results will be achieved if weeds are allowed to recover from grazing prior to herbicide application to allow for adequate uptake of the product. Sorrel and Docks particularly require new leaf growth.

## **INSTRUCTIONS SPECIFIC TO ESTABLISHED PASTURES AND PASTURE RENOVATION**

- Some sorrel seedlings may germinate after the break the following year.
- Un-germinated clover will not be affected but seed set of clover in the year following application will be significantly reduced. If seed banks are not large, it may be necessary to re-sow clover.
- For Pasture Topping situations this product may be mixed with glyphosate but ensure crop rotation recommendations are observed. Refer to the Directions for Use for each Target weed on each product label.

## SPRAY PREPARATION

Agro-Essence Metsulfuron-methyl 600 Herbicide is a dry flowable granule, which must be mixed with clean water. Always add a wetting agent/ surfactant. (See "Use of surfactant/wetting agent" below)

1. Partially fill the spray tank with water.
2. With the agitation system engaged, add the required amount of product (as per Directions for Use Table) to the tank using only the measuring device provided.
3. Add the remainder of the water.
4. Always maintain agitation to keep the product in suspension. If the spray solution is allowed to stand, thoroughly re-agitate before using.

## USE OF SURFACTANT/ WETTING AGENT

Agro-Essence Metsulfuron-methyl 600 Herbicide alone - It is important that a surfactant/ wetting agent is **ALWAYS** used with this product. If no specific wetting agent/ surfactant is recommended in the directions for use table use a non-ionic surfactant (100%) at 100mL/ 100L of final spray volume.

Agro-Essence Metsulfuron-methyl 600 Herbicide tank mixed with glyphosate - Use a non-ionic surfactant when mixing with glyphosate herbicide. In some tank mix situations the use of Rygel Organowett Penetrant is recommended. This recommendation must be strictly followed in order to achieve adequate weed control.

Gas gun applications - Rygel Organowett Penetrant should be added at the rate of 10mL/ 5L or 200mL/100L of final spray volume.

Where a mineral spray oil is recommended use 1L/100L of final spray volume (i.e. 1% volume/volume). A non-ionic surfactant should still be used with this mixture.

Always read the instructions on the companion product label when tank mixing.

## APPLICATION EQUIPMENT

Agro-Essence Metsulfuron-methyl 600 Herbicide may be applied by air, handgun, boom spray or gas gun according to the Directions for Use Table.

Handgun - Ensure complete and uniform coverage of all canes and foliage. Pressures of 550-750 kPa (80-100 psi) are recommended depending on size of bushes and target species. As an example:

Use No 4 or 5 spray nozzle for individual bushes or broadleaf weeds less than 1 metre high. Use No 5 or 6 spray nozzle for bushes 1-2 m high and No 7 or 8 spray nozzle for large bushes 2-3 metres high or for bushes with a large diameter. When using 3g Agro-Essence Metsulfuron-methyl 600 Herbicide + 400mL of Glyphosate 360 Herbicide pressures of greater than 800 kPa should be used to assist penetration.

NOTE: For blackberry regrowth use the large spray nozzle/ high volume with as wide a cone setting as possible. Use even, side by side spray pattern moving from the base to the top of the bush. For blackberries it is important that runners at the side and top of the bush are treated and that spray penetrates larger bushes to wet the foliage and canes.

Boom Spray - Ensure the boom is properly calibrated to a constant speed or rate of delivery for thorough coverage and uniform spray pattern. Fan nozzles using pressures of 240 to 280 kPa are recommended. Adjust the boom height to ensure correct spray overlap. Apply in a minimum of 150L prepared spray per hectare. Increase to 200L/ha or more for dense stands.

Gas Gun - Ensure thorough coverage. The use of a suitable dye is recommended to allow the operator to see which plants have been treated.

Aerial Application - (by helicopter only) Use a properly calibrated helicopter using the half overlap opposite pass technique. Apply a minimum of 100L/ha on blackberries and 60L/ha on *Mimosa pigra* up to a maximum of 200L prepared spray per hectare. Use a VMD of 300 microns. High temperatures and/or low humidity may cause excessive evaporation of droplets and may reduce results. Where bushes are large or terrain is steep, higher water volumes are necessary to ensure adequate coverage. Avoid spraying in conditions that favour temperature inversions or in still conditions. Turn off boom when passing over creeks, dams or waterways. Avoid spraying where drift can move onto crop areas that are likely to be planted to crops and non-target pastures as injury may occur. Do not apply when temperatures exceed 30<sup>0</sup>C (except when treating *M. pigra*).

## **TANK MIXES WITH GLYPHOSATE HERBICIDE**

In certain situations such as the presence of harder to kill species or in follow-up treatment situations a tank mix with glyphosate may provide improved weed control (see directions for use table).

## **COMPATIBILITY**

This product is compatible with glyphosate formulations and commonly used pasture herbicides such as MCPA amine, MCPA ester, 2,4-D amine, dicamba, clopyralid, fluroxypyr, and commonly used insecticides such as chlorpyrifos and omethoate. Always refer to the companion product label for instructions/ restrictions.

## **CROP ROTATION RECOMMENDATIONS**

Many crop species are sensitive to metsulfuron-methyl. The product is broken down in the soil mainly by chemical hydrolysis and to a lesser degree by soil microbes. Other factors that affect breakdown are soil pH, soil moisture and temperature. Breakdown is faster in warm, wet acid soils and slowest in alkaline, cold, dry soils.

Legumes will be removed from pasture if they are over sprayed with the product.

Other species, which are sensitive to metsulfuron methyl, are:

Barley, Canola, Cereal Rye, Chickpeas, Faba Beans, Japanese Millet, Linseed, Lupins, Lucerne, Maize, Medics, Oats, Panorama Millet, Peas, Safflower, Sorghum, Soybeans, Sub Clover, Sunflower, Triticale, Wheat, White French Millet.



The area sprayed with Agro-Essence Metsulfuron-methyl 600 Herbicide may be replanted to the specified pasture species after the interval in the following table:

Soil pH*	Pasture Species	Rate g/ha	Minimum Rainfall	Minimum Re-crop Interval
5.5 and below	Sub Clover and Haifa White Clover	5	150mm	12 weeks
		10		20 weeks
		15		20 weeks
	Cocksfoot and Phalaris	5		8 weeks
		10		8 weeks
		15		16 weeks
	Perennial Ryegrass and Fescue	5	100mm	16 weeks
		10	16 weeks	
		15	150 mm	20 weeks
5.6 - 6.5	Sub Clover <sup>2</sup> , Haifa White Clover, Perennial Ryegrass and Fescue	Bioassay <sup>3</sup>		
		Cocksfoot, Phalaris	5, 10	175mm
			15	Bioassay
6.6 and above	Cocksfoot and Phalaris	Bioassay <sup>3</sup>		

<sup>2</sup> Sub Clover varieties: Junee, Karridale, Seaton Park, Trikkala

<sup>3</sup> Tolerance of species should be determined on a small scale before sowing commercial areas

\* Soil pH is determined by laboratory analysis using 1:5 water suspension method.

For rates higher than 15 g/ha the following applies:

- For soils with a pH below 7 (1:5 soil:water method) a minimum of 12 months should elapse before over sowing treated areas with grasses or legumes. It is suggested that a small area be oversown 1-2 months prior to the planned time to check for possible harmful residues.
- For soils with pH greater than 7 DO NOT replant until a company representative has been contacted.

## APPLICATION IN WINTER CEREAL CROPS

### DIRECTIONS FOR USE

#### RESTRAINTS:

DO NOT apply to crops under stress

DO NOT spray if rainfall is expected within 2 hours.

DO NOT store the prepared spray for more than 2 days.

DO NOT store tank mixes with other products.

DO NOT apply to crops before the three leaf stage when used post emergent.

DO NOT use on flood or furrow irrigated crops.

### Post Crop and Weed Emergence by Ground and Aerial Application - Agro-Essence Metsulfuron-methyl 600 Herbicide Alone

Crop	Weeds Controlled	States	Rate (g/ha)	Critical Comments
Barley, Cereal Rye, Triticale, Wheat	African Turnip Weed ( <i>Sisymbrium thellungii</i> )	Qld only	5	Apply before the 6 leaf stage
	Amsinckia/ Yellow Burrweed <i>Amsinckia</i> spp.	WA only	5	
		NSW, Vic, Tas, SA only	5 or 7	Use the higher rate for heavy weed pressure or for larger weeds.
	Ball Mustard ( <i>Neslia paniculata</i> )	SA only	5	
	Boggabri Weed/ Dwarf Amaranth ( <i>Amaranthus macrocarpus</i> )	Qld only	7	Apply at cotyledon to 10 cm in height or diameter
	Colomba Daisy ( <i>Pentzia suffruticosa</i> )	SA only	5	
	Cape Tulip ( <i>Homeria</i> spp.)	WA only	5	
	Charlock ( <i>Sinapsis arvensis</i> )	NSW, Vic, Tas, SA only	5	
	Chickpeas (volunteer) ( <i>Cicer arietinum</i> )	Qld, NSW, Vic, SA only	5	
Chickweed ( <i>Stellaria media</i> )	NSW, Vic, Tas, SA only	5		
Barley, Cereal Rye,	Chicory ( <i>Cichorium intybus</i> )	Qld only	5	

Crop	Weeds Controlled	States	Rate (g/ha)	Critical Comments
Triticale, Wheat	Clover (subterraneum) ( <i>Trifolium subterraneum</i> )	All States	5	
	Common Sowthistle ( <i>Sonchus oleraceus</i> )	Qld, NSW, Tas, Vic only	5	Apply up to the 4 leaf stage
	Cutleaf Mignonette ( <i>Reseda lutea</i> )	Tas, SA only	7	Spray large, actively growing plants up to the early flowering stage. Plants that emerge after spraying may not be controlled.
	Deadnettle ( <i>Lamium amplexicaule</i> )	All States	5	
	Denseflower fumitory ( <i>Fumaria densiflora</i> )	NSW, SA only	5	
	Dock (broadleaf) ( <i>Rumex obtusifolius</i> )	WA only	5	
	Dock (broadleaf) ( <i>Rumex obtusifolius</i> )	Qld, NSW, Vic, Tas, SA only	5 or 7	Use the higher rate where weed pressure is high.
	Faba Beans ( <i>Vicia faba</i> )	Vic, SA only	5	Apply after the 3 node stage
	Field Peas ( <i>Pisum sativum</i> )	Vic, Tas, SA, WA only	5	
		NSW only	7	
	Hare's Ear/ Treacle Mustard ( <i>Conringia orientalis</i> )	Vic only	5	Apply before the 5 leaf stage
	Hogweed/ Wireweed ( <i>Polygonum aviculare</i> )	WA only	5	Apply before the 4 leaf stage
		NSW, Vic, Tas, SA only	5 or 7	Apply before the 4 leaf stage. Use the higher rate when weed populations are dense and majority of weeds are 4 leaf.
		Qld only	7	Apply when weeds are cotyledon to 3 leaf.
	Indian Hedge Mustard ( <i>Sisymbrium orientale</i> )	All States	5	Heavy populations and or those suffering from moisture stress may not be completely controlled. A tank mix with MCPA is recommended.
	Lincoln Weed ( <i>Diploaxis tenuifolia</i> )	SA only	7	Apply from late winter to early spring. Plants must be actively growing. Plants emerging after spraying may not be controlled.
Barley, Cereal Rye, Triticale, Wheat	Lupins ( <i>Lupinus albus</i> )	NSW, Vic, SA WA only	5	
	Mallee Catchfly ( <i>Silene apetala</i> )	SA only	5	
	Medics ( <i>Medicago spp.</i> )	All States	5	

Crop	Weeds Controlled	States	Rate (g/ha)	Critical Comments
Barley, Cereal Rye, Triticale, Wheat	New Zealand Spinach ( <i>Tetragonia tetragonoides</i> )	Qld only	7	Apply before the 4 leaf stage.
	Parthenium Weed ( <i>Parthenium hysterophorus</i> )	Qld only	5 or 7	Apply the lower rate before the 4 leaf stage and the higher rate at the 4 leaf to rosette stage.
	Paterson's Curse/ Salvation Jane ( <i>Echium plantagineum</i> )	WA, Tas only	5	Use the higher rate for large weeds or heavy weed populations.
		NSW, SA only	5 or 7	
	Prickly Lettuce ( <i>Lactuca serriola</i> )	Qld, Vic, Tas, SA only	5 or 7	
		WA only	5	
	Red Pigweed ( <i>Portulaca oleracea</i> )	Qld only	5	Apply before the 6 leaf stage
			7	Apply this rate when weed populations are dense and the majority of weeds are 6 leaf stage.
	Rough Poppy ( <i>Papaver hybridum</i> )	NSW, Vic, Tas, SA only	5	
	Salt bush ( <i>Atriplex meulleri</i> )	Qld only	5 or 7	Use the lower rate at the 4 leaf stage and the higher rate at the 4-6 leaf stage.
	Shepherds Purse ( <i>Capsella bursa-pastoris</i> )	NSW, Vic, Tas, SA only	5	
	Skeleton Weed - suppression only ( <i>Chondrilla juncea</i> )	NSW, Vic, SA only	7	
		WA only	5	
	Slender celery ( <i>Apium leptophyllum</i> )	Qld only	5	
	Smallflower fumitory ( <i>Fumaria parviflora</i> )	SA only	5	
	Sorrel ( <i>Rumex acetosella</i> )	NSW, Vic, Tas, SA, WA only	5	Some regeneration from underground rootstocks and new germinations may occur late in the season.
	Soursob ( <i>Oxalis pes-caprae</i> )	NSW, Vic, Tas, SA, WA only	5	Apply after majority of soursobs have emerged and are actively growing.
Spiny Emex/ Doublegee Three Cornered Jacks ( <i>Emex australis</i> )	WA only	5	Use the higher rate under heavy weed pressure.	
	Qld, NSW, Vic, Tas, SA only	5 or 7		
Stagger weed ( <i>Stachys arvensis</i> )	All States	5		

Crop	Weeds Controlled	States	Rate (g/ha)	Critical Comments
	Storksbill/ Wild Geranium ( <i>Erodium spp.</i> )	Vic, Tas, SA, WA only	5	
	Turnip weed ( <i>Rapistrum rugosum</i> )	All States	5	
	Volunteer Sunflower ( <i>Helianthus annuus</i> )	Qld only	5 or 7	Use the lower rate at the cotyledon to 4 leaf stage and the higher rate at the 4-8 leaf stage.
		NSW only	7	Apply at the cotyledon to 8 leaf stage.
	Wild / Crow Garlic ( <i>Allium vineale</i> )	Vic, Tas only	7	Apply at the 1-2 leaf stage.
	Wild Turnip ( <i>Brassica tournefortii</i> )	All States	5	

#### WITHHOLDING PERIOD – NOT REQUIRED WHEN USED AS DIRECTED

#### MIXTURES - POST CROP AND WEED EMERGENCE BY GROUND AND AERIAL APPLICATION

Crop	Weeds Controlled	States	Rate (g/ha)	Crop Stage at Application	Critical Comments
Wheat, Barley, Triticale, Cereal Rye	Capeweed ( <i>Arctotheca calendula</i> ) Wild Radish ( <i>Raphanus raphanistrum</i> )	NSW, Vic only	5g + 500mL diuron flowable (500g/L) + 500mL MCPA amine (500g/L)	3 to 5 leaf (Zadoks 13-15) NSW only 5 leaf (Zadoks 15) Vic only	Do not apply to Shortim, Kamilaroi, or Olympic wheat. Apply when weeds are 2-5 leaf.
		SA only	5g + 500mL diuron flowable (500g/L) + 350mL MCPA amine (500g/L)	3 to 5 leaf (Zadoks 13-15)	
		WA only	5g + 350mL diuron flowable (500g/L) + 400mL MCPA Amine (500g/L)	3 to 4 leaf (Zadoks 13-14)	Apply when weeds are 2-5 leaf.
Barley, Wheat	Capeweed ( <i>Arctotheca</i> )		5g + 550mL terbutryn + 600mL MCPA amine (500g/L)	3 leaf to early tillering (Zadoks 13-21)	Apply when weeds are 2-6 leaf.
		SA only	5g + 550mL terbutryn		

Crop	Weeds Controlled	States	Rate (g/ha)	Crop Stage at Application	Critical Comments
	<i>calendula</i> )	NSW only	5g + 850mL terbutryn		
Barley, Cereal Rye, Triticale & Wheat	<i>Capeweed (Arctotheca calendula)</i>	NSW, Vic, SA, WA only	5g + 1L Agryne <sup>1</sup>	3 leaf to early tillering (Zadoks 13-21)	Apply when weeds are 2 to 6 leaf
		WA only	5g + 750mL bromoxynil + MCPA	3 leaf to full tillering (SA, WA only) 5 leaf to full tillering (Qld, NSW, Vic, Tas only)	Apply when weeds are up to 6 leaf stage
		Qld, NSW, Vic, Tas, SA only	5g + 1.4L bromoxynil + MCPA		
		WA only	5g + 1.4L bromoxynil + MCPA	3 leaf to full tillering (SA, WA only) 5 leaf to full tillering (Qld, NSW, Vic, Tas only)	Apply when weeds are 6 to 8 leaf stage.
		Qld, NSW, Vic Tas SA only	5g + 2.1L bromoxynil + MCPA		
	<i>Wild Radish (Raphanus raphanistrum)</i>	Qld only	5g + 700mL - 1L MCPA amine (500 g/L)	Early tillering to before boot (Zadoks 21-39)	Apply the lower rate to seedling weeds (3 - 6 leaf) and the higher rate to well developed weeds up to rosette stage.
		NSW only		Apply 700mL after the crop has reached the 5 leaf stage. Apply the higher rate after the first node can be felt at the base of the tiller and before swelling of the head can be felt in the tiller.	
		SA only	5g + 1.4L MCPA amine (500g/L)	Early tillering to before boot (Zadoks 21-39)	Apply when weeds are seedling to rosette.
		WA only	5g + 1.2L MCPA amine (500g/L)	5 leaf to tillering (Zadoks 15-30)	
	Wheat, barley	<i>Wild Radish (Raphanus raphanistrum)</i>	WA only	5g + 250mL diflufenican + MCPA	Wheat: 3 leaf to late tillering (Zadoks 13-20) Barley: 5 leaf to late tillering (Zadoks 15-30)
Wheat, Barley, Cereal Rye and Triticale	NSW, Vic, Tas, SA, WA only		5g + 1.1 to 1.6 LVE MCPA	5 leaf to commencement of flag leaf (Zadoks 15-37)	Apply up to 2-3 leaf stage only.

Crop	Weeds Controlled	States	Rate (g/ha)	Crop Stage at Application	Critical Comments
	Saffron thistle ( <i>Carthamus lanatus</i> )	NSW, Vic, Tas, SA, WA only	5g + 1.1L to 1.6L LVE MCPA	5 leaf through to commencement of flag leaf (Zadoks 15-37)	Spray young rosettes before leaves become spiny.
		Qld only	5g + 1.4L to 2.1L MCPA amine	Early tillering to before boot (Zadoks 21-39) Rates above 1.5L/ha of MCPA Amine only to be used on crops from mid-tillering to bolt stage (Zadoks 23-29)	Apply to weeds at seedling to rosette stage. Use the higher rate on more advanced weeds and the lower rate on seedling weeds.
		NSW, Vic, Tas, SA, WA only	5g + 300mL clopyralid	4 to 5 leaf stage (Zadoks 14-15)	Spray when weeds are young and actively growing. DO NOT apply Lontrel to a cereal crop if field peas are to be sown the following season unless cereal stubble is to be burnt.
	Variegated Thistle ( <i>Silybum marianum</i> )	Tas only*	5g + 1.5L 2,4-D amine (500g/L)	5 leaf to early tillering (Zadoks 15-21)	Apply to weeds at seedling to rosette stage.
		NSW only	5g + 700mL to 1.7L 2,4-D amine (500g/L)	Apply after the first node can be felt at the base of the tiller and before swelling of the head can be felt in the tiller.	Apply to weeds at the seedling to rosette stage. Use the lower rate on seedling weeds and the higher rate on well-developed weeds.
Barley, Cereal Rye, Triticale & Wheat (cont)	Variegated Thistle ( <i>Silybum marianum</i> )	Qld only	5g + 1.1L 2,4-D amine (500 g/L)	Mid tillering to before boot (Zadoks 23-39)	Apply to weeds at the seedling to rosette stage.
			5g + 1.5L MCPA amine (500g/L)	Early tillering to before boot (Zadoks 21-39)	
		NSW, Vic, Tas, SA, WA only	5g + 840mL LVE MCPA	Apply from 5 leaf through to commencement of flag leaf (Zadoks 15-37)	Spray at pre-cabbage stage.
Wheat	Slender thistle ( <i>Carduus tenuiflorus</i> )	NSW, Vic, Tas, SA, WA only	5g + 2.1L LVE MCPA		Moderately susceptible. Spray young rosettes.
Wheat, Barley, Cereal Rye, Triticale			NSW only		5g + 1L to 1.7L 2,4-D amine (500g/L)

Crop	Weeds Controlled	States	Rate (g/ha)	Crop Stage at Application	Critical Comments
	Slender thistle ( <i>Carduus tenuiflorus</i> and <i>C. pycnocephalus</i> )	Tas only*	5g + 1.7L 2,4-D amine (500g/L)	5 leaf to early tillering (Zadoks 15-21)	Apply to weeds at seedling to young rosette stage.
Wheat, Barley, & Triticale	Black bindweed/ Climbing Buckwheat ( <i>Polygonum convolvulus</i> )	Qld, NSW only	5 or 7g + 1L picloram + MCPA	Apply from early tillering (when the main shoot has 4 to 5 leaves plus 2 or more new tillers have formed) to start of jointing (first node).	For best control apply at early tillering as this weed becomes more difficult to control as it becomes larger.

\* In Tasmania 2,4-D can only be applied from 15 April to 15 September to minimise damage to grapevines through spray or vapour drift.

#### WITHHOLDING PERIOD:

**Agro-Essence Metsulfuron-methyl 600 Herbicide alone, Agro-Essence Metsulfuron-methyl 600 Herbicide + Glyphosate 360 – NOT REQUIRED WHEN USED AS DIRECTED**

**Mixtures with MCPA, picloram + MCPA, Terbutryn, 2,4-D - DO NOT CUT OR GRAZE FOR STOCK FOOD FOR 7 DAYS AFTER TANK MIX APPLICATION.**

**Mixtures with Diuron Flowable - DO NOT CUT OR GRAZE FOR STOCK FOOD FOR 3 DAYS AFTER TANK MIX APPLICATION**

**Mixtures with Bromoxynil + MCPA - DO NOT CUT OR GRAZE FOR STOCK FOOD FOR 14 DAYS AFTER TANK MIX APPLICATION**

#### AGRO-ESSENCE METSULFURON-METHYL 600 HERBICIDE AND MIXTURE WITH GLYPHOSATE FALLOW/ PRE-PLANT KNOCKDOWN

Crop	Weeds Controlled	State	Rate (g/ha)	Crop Stage at Application	Critical Comments
Wheat	Refer to Post Crop and Weed Emergence Section of this label and Glyphosate 450 Herbicide Directions for Use	All States except WA	5 or 7g + glyphosate at labelled rates	Refer to Post Crop and Weed Emergence Section of this label and glyphosate Directions for Use	DO NOT apply at less than 10 days before sowing as crop injury may occur, particularly if conditions are dry and cold. Apply when weeds are actively growing. Refer to critical comments and General Instructions of both labels. Use the appropriate rate of each product for the target weed.
		WA only	5g + glyphosate at labelled rates		
Barley, Cereal Rye or Triticale		All States except WA	5 or 7g + glyphosate at labelled rates		DO NOT apply at less than 6 weeks before sowing as crop injury may occur, particularly if conditions are dry and cold. Apply when weeds are actively growing. Refer to critical comments and General Instructions of both labels. Use the appropriate rate of each product for the target weed.
		WA only	5g + glyphosate at labelled rates		

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

#### WITHHOLDING PERIOD:

**Agro-Essence Metsulfuron-methyl 600 Herbicide, Agro-Essence Metsulfuron-methyl 600 Herbicide + Glyphosate – NOT REQUIRED WHEN USED AS DIRECTED**



## **GENERAL INSTRUCTIONS - CEREAL CROPS**

Agro-Essence Metsulfuron-methyl 600 Herbicide is a selective herbicide, which can be used in Cereal crops at the early post emergence stage of the crop (3 leaf to before booting stage). It may also be applied before planting the crop i.e. pre-plant. Best results are obtained if weeds are small (no larger than 5cm in height or diameter) and actively growing. To achieve good weed control, it is preferable that rainfall wets the soil to a depth of 5 to 7.5cm within 4 weeks of application. If application is not made when conditions and weed growth are optimum, results may be slow to appear and some weeds may only be suppressed or stunted.

For post emergent application, the product will remain in the soil for a period of time. The soil persistence will depend on environmental conditions such as soil pH, moisture, temperature and soil organic matter. Breakdown is faster in warm, wet acid soils and slowest in alkaline, cold, dry soils. This product does NOT provide acceptable residual control.

## **CROP SAFETY**

Do not apply to the wheat varieties Miling, Jacup, King or Harrier.

Do not apply to crops undersown with legumes, as the product will seriously affect legumes.

Should the crop have been treated with another sulfonylurea herbicide e.g. Chlorsulfuron, consult your local representative or Department of Agriculture before application of Agro-Essence Metsulfuron as crop injury may occur.

Do not apply to crops that are stressed by any factor such as adverse environmental conditions, waterlogging, drought, frost, poor nutrient status, extreme acid or alkaline soil conditions, insect or nematode damage. Crop injury may occur if the product is applied to these crops. If the crop is stressed after application of the herbicide, crop yellowing and slow growth may occur but the final yield is normally unaffected, as the crop will recover. Application to soils with pH 5.5 or less may result in some crop retardation, especially if the crop is stressed.

## **APPLICATION EQUIPMENT**

For control of weeds in winter cereal crops the product may be applied by ground or air.

### Ground Spraying

Ensure the boom is properly calibrated to a constant speed or rate of delivery for thorough coverage and uniform spray pattern. Avoid overlapping and shut off boom while starting, turning, slowing or stopping as injury to the crop may occur. Apply in a minimum of 50L prepared spray/ha.

### Aerial Application

Apply in a minimum of 20L/ha. Application in higher water volumes may improve weed control reliability. Avoid spraying in conditions, which favour temperature inversions, still conditions, or in winds likely to cause drift onto sensitive crops or fallow areas to be planted to sensitive crops. Turn off boom when passing over creeks, dams or waterways.

The use Micronair equipment is not recommended as the fine droplets emitted may lead to spray drift.

## **USE OF SURFACTANT/ WETTING AGENT**

Always add a non-ionic surfactant/ wetting agent at the rate of 0.1% (active constituent) of final spray volume. The use of spaying oils is NOT recommended.

**NOTE: DO NOT** add a surfactant/wetting agent when tank mixing with terbutryn or diuron.

### COMPATIBILITY

AGRO-ESSENCE Metsulfuron-methyl 600 Herbicide is compatible with most commonly used broadleaf herbicides including:

MCPA amine, diuron flowable, 2,4-D amine, terbutryn + MCPA, flumetsulam, bromoxynil + MCPA, metosulam, MCPA ester, MCPA amine, LVE MCPA, diflufenican + MCPA, diflufenican + bromoxynil, picloram + MCPA, picloram + 2,4-D, metribuzin, clopyralid, dicamba, fluroxypyr, glyphosate.

The product is also compatible with commonly used insecticides such as chlorpyrifos and omethoate. Some temporary crop yellowing may occur with these mixtures. Other mixtures should be tested on a small scale before large areas are treated.

**NOTE:** The compatibility of Agro-Essence Metsulfuron-methyl 600 Herbicide with grass herbicides varies between products and weed species (refer table below). **DO NOT** mix with tralkoxydim or flamprop-m-methyl.

	Biological Compatibility		
	Wild Oats	Annual Ryegrass	Phalaris
<b>Fenoxaprop-p-ethyl</b>	Yes		No
<b>Diclofop-methyl</b>	Refer to notes on Agro-Essence Metsulfuron / diclofop-methyl based products or Agro-Essence Metsulfuron / diclofop-methyl + fenoxaprop-p-ethyl mixtures		-
<b>Diclofop + Fenoxaprop</b>			No
<b>Tralkoxydim</b>	No		No
<b>Flamprop</b>	No		-

### NOTES ON AGRO-ESSENCE METSULFURON/DICLOFOP METHYL OR AGRO-ESSENCE METSULFURON/ DICLOFOP + FENOXAPROP MIXTURES:

- some reduction in grass weed control can be expected.
- In heavily weed infested areas control may be inadequate (Victoria and Tasmania only).
- significant reduction in grass weed control should be expected (SA only).
- Mixtures of Agro-Essence Metsulfuron plus diclofop-methyl or diclofop-methyl + fenoxaprop-p-ethyl are not recommended in WA as these mixtures will result in significant reduction in grass weed control and/or crop damage.

### SPRAY PREPARATION

The product is a dry flowable granule that must be mixed with clean water.

- Partially fill the spray tank with water.

2. With the agitation system engaged, add the required amount of product (as per Directions for Use Table) to the tank using only the measuring device provided.
3. Add the remainder of the water.
4. Always maintain agitation to keep the product in suspension. If the spray solution is allowed to stand, thoroughly re-agitate before using.

If tank mixing with another product, ensure Agro-Essence Metsulfuron is in suspension before adding the other product to the tank. If using in conjunction with liquid fertilisers, slurry the product in water before mixing the slurry into the liquid fertiliser. Do not add surfactants and check with the Department of Agriculture on compatibility.

### **CROP ROTATION RECOMMENDATIONS**

Many crop species are sensitive to metsulfuron methyl. The minimum re-cropping intervals are given in the table below. Do not rotate crops other than those listed below to land previously treated with Metsulfuron methyl. It is advisable to determine crop tolerance on a small scale before sowing larger areas.

<b>MINIMUM RECROPPING INTERVAL</b>				
<b>Soil pH*</b>	<b>10 days</b>	<b>6 weeks</b>	<b>9 months</b>	<b>14 months</b>
5.6-8.5	Wheat	Barley Cereal Rye Triticale	Canola Chickpeas Faba Beans Linseed Lucerne Lupins Medics** Oats Peas Safflower Subterranean Clover**	Japanese Millet Maize Panorama White Millet French Millet Sorghum Soybeans Sunflower
8.6 and above	Tolerance of crops (grown to maturity) should be determined on a small scale, in the previous season, before sowing into larger areas.			

\* Soil pH is determined by laboratory analysis using 1:5 water suspension method.

\*\* Including natural regeneration of medics and subclover.

# **GENERAL INSTRUCTIONS RELATING TO ALL USES FOR AGRO-ESSENCE METSULFURON-METHYL 600 HERBICIDE**

## **RESISTANT WEEDS WARNING**

Agro-Essence Metsulfuron-methyl 600 Herbicide is a member of the sulfonylurea group of herbicides. Agro-Essence Metsulfuron-methyl 600 Herbicide has the ALS inhibitor mode of action. For weed resistance management Agro-Essence Metsulfuron-methyl 600 Herbicide is a Group B Herbicide. Some naturally occurring weed biotypes resistant to Agro-Essence Metsulfuron-methyl 600 Herbicide and other ALS inhibitor 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 Agro-Essence Metsulfuron-methyl 600 Herbicide or any other ALS inhibitor herbicide.

Since the occurrence of resistant weeds is difficult to detect prior to use, Agro-Alliance (Australia) Pty Ltd accepts no liability for any losses that may result from the failure of Agro-Essence Metsulfuron-methyl 600 Herbicide to control resistant weeds.

## **SPRAYER CLEANUP**

Many plant species are sensitive to low concentrations of Agro-Essence Metsulfuron-methyl 600 Herbicide. For this reason it is important to thoroughly clean spray tanks after use as small quantities of product remaining in the tank may cause injury to desirable pastures and crops if the tank is used for other spraying procedures. The following method of tank clean-up should be used:

1. Drain tank and flush tank, boom, and hoses for at least 10 minutes.
2. Fill the tank with clean water and add 300mL of household bleach (containing 4% chlorine) per 100L water. Flush through the hoses and boom, allow to stand for 15 minutes with agitation system engaged, then drain.
3. Repeat Step 2.
4. Nozzles and screens should be removed and cleaned separately.
5. Remove traces of chlorine bleach by rinsing the tank thoroughly with clean water and flushing hoses and boom.

**WARNING:** DO NOT use chlorine bleach with ammonia. It is important that liquid fertilisers containing ammonia be rinsed from the application equipment before adding a chlorine bleach solution. If traces of ammonia are present it may react with the chlorine bleach releasing a gas with a musty chlorine odour, which may cause eye, nose, throat and lung irritation. DO NOT clean equipment in an enclosed area.

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

Do not contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply to weeds growing in or over water. DO NOT spray across open bodies of water.

## **PROTECTION OF LIVESTOCK**

There is a nil withholding period for this product and stock may continue to graze where the product has been used in pasture situations. It is recommended that stock are removed from the pasture for about 3 days to ensure product efficacy. Certain plants such as bracken are naturally toxic to stock. When toxic plants are present, it is recommended that grazing be delayed until complete browning of treated plants has occurred.

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

Do not apply or drain or flush equipment on or near desirable trees or other plants or on areas where their roots may extend or in locations where the chemical may be washed or moved into contact with their roots. Do not apply under weather conditions, or from spraying equipment, that may cause drift onto nearby susceptible plants/crops, cropping lands or pastures.

## **STORAGE AND DISPOSAL**

Keep out of reach of children.

DO NOT store the prepared spray for more than 2 days.

DO NOT store tank mixes with other products.

Store in the closed original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point.

If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

## **SAFETY DIRECTIONS**

Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. When opening the container and preparing the solution wear elbow-length PVC gloves and goggles. If applying by hand wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves and goggles and contaminated clothing.

## **FIRST AID**

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

## **MATERIAL SAFETY DATA SHEET**

Additional information is listed in the Material Safety Data Sheet, which is available from the supplier.

## **CONDITIONS OF SALE**

The use of Agro-Essence Metsulfuron-methyl 600 Herbicide being beyond the control of the manufacturer, no warranty expressed or implied is given by Agro-Alliance (Australia) Pty Ltd 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 Agro-Alliance (Australia) Pty Ltd accepts with no responsibility for any consequences whatsoever resulting from the use of this product.