

Product Name: SUREFIRE METSULFURON METHYL HERBICIDE

APVMA approval No.: 68878/ 125702



Label Name:	SUREFIRE METSULFURON METHYL HERBICIDE
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Signal Headings:	READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Constituent Statements:	600 g/kg METSULFURON-METHYL
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Mode of Action:	GROUP <b>B</b> HERBICIDE
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Statement of Claims:	For the control of brush, Pimelea spp, and broadleaf weeds in native pastures, rights of way, commercial and industrial areas, for the control of certain broadleaved weeds in winter cereal crops and for desiccation of mung beans as per the Directions for Use.
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Net Contents:	1kg 2kg 40g 500g 50g
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Restrains:	<p><b>BRUSH APPLICATIONS RESTRAINTS</b></p> <p>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.</p> <p><b>AERIAL APPLICATION BY HELICOPTER RESTRAINTS:</b></p> <p>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.</p> <p><b>SUREFIRE METSULFURON METHYL HERBICIDE + GLYPHOSATE 360 TANK MIX</b></p>
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**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 brown-out may take 3-6 months.

**ESTABLISHED PASTURES AND PASTURE RENOVATION**

**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 apply to weeds under stress or that are not actively growing.  
DO NOT use on crops grown for pasture seed.

**APPLICATION IN WINTER CEREAL CROPS**

**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.

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

DO NOT apply Tank Mixtures with Diuron by aerial application.

Directions for Use:	This section contains file attachment.
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Other Limitations:	
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Withholding Periods:	<p><b>BRUSH APPLICATIONS</b> WITHHOLDING PERIODS: NOT REQUIRED WHEN USED AS DIRECTED</p> <p><b>AERIAL APPLICATION BY HELICOPTER</b> WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED</p> <p><b>SUREFIRE METSULFURON METHYL HERBICIDE + GLYPHOSATE 360 TANK MIX, ESTABLISHED PASTURES AND PASTURE RENOVATION</b> WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED</p> <p><b>APPLICATION IN WINTER CEREAL CROPS, MIXTURES - POST CROP AND WEED EMERGENCE BY GROUND AND AERIAL APPLICATION</b> WITHHOLDING PERIODS SUREFIRE METSULFURON METHYL Herbicide alone, SUREFIRE METSULFURON METHYL 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.</p>
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	<p>Mixtures with Diuron Flowable - DO NOT CUT OR GRAZE FOR STOCK FOOD FOR 3 DAYS AFTER TANK MIX APPLICATION</p> <p>Mixtures with Bromoxynil + MCPA - DO NOT CUT OR GRAZE FOR STOCK FOOD FOR 14 DAYS AFTER TANK MIX APPLICATION</p> <p>SUREFIRE METSULFURON METHYL HERBICIDE AND MIXTURE WITH GLYPHOSATE WITHHOLDING PERIOD:  SUREFIRE METSULFURON METHYL Herbicide, SUREFIRE METSULFURON METHYL Herbicide + Glyphosate– NOT REQUIRED WHEN USED AS DIRECTED</p> <p>MUNG BEANS CROP DESICCATION AND WEED CONTROL WITHHOLDING PERIODS:  Harvest: Mung beans: DO NOT harvest for 7 days after application.  Grazing: Mung beans: DO NOT graze or cut for stock food for 7 days after application.</p>
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Trade Advice:	
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General Instructions:	This section contains file attachment.
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Resistance Warning:	<p>RESISTANT WEEDS WARNING  GROUP B HERBICIDE</p> <p>SUREFIRE METSULFURON METHYL is a member of the Sulfonylurea group of herbicides. SUREFIRE METSULFURON METHYL has the ALS inhibitor mode of action. For weed resistance management SUREFIRE METSULFURON METHYL is a Group B Herbicide.</p> <p>Some naturally occurring weed biotypes resistant to SUREFIRE METSULFURON METHYL 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 SUREFIRE METSULFURON METHYL or any other ALS inhibitor herbicide. Since the occurrence of resistant weeds is difficult to detect prior to use, PCT Holdings Pty Ltd accepts no liability for any losses that may result from the failure of SUREFIRE METSULFURON METHYL Herbicide to control resistant weeds.</p>
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Precautions:	
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Protections:	<p>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.</p> <p>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 is 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.</p> <p>PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS</p>
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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:

**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-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 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.

Safety Directions:

**SAFETY DIRECTIONS:** Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. When opening the container and preparing spray 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, goggles and contaminated clothing.

First Aid Instructions:

**FIRST AID:** If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126 New Zealand 0800 764 766.

First Aid Warnings:

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

SUREFIRE METSULFURON METHYL Herbicide is a selective herbicide which is rapidly absorbed by root and leaves.

- Always add a surfactant/wetting agent.
- Best results are achieved when:
  - Application is made to actively growing plants which are not stressed by any factors such as dry weather conditions, waterlogging etc. Application to weeds that are not actively due to adverse conditions may result in weeds only being stunted or suppressed.
  - 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 oversprayed with SUREFIRE METSULFURON METHYL Herbicide.
- 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 SUREFIRE METSULFURON METHYL Herbicide.
- It is recommended that this product not be applied to bushes bearing mature blackberries due to the collection of blackberries for food purposes.
- Introduced grass species may be severely damaged if oversprayed.
- Legumes are extremely sensitive to SUREFIRE METSULFURON METHYL Herbicide and will be removed from the pasture if over sprayed.
- Application to weeds that are not actively 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.
- 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 SUREFIRE METSULFURON METHYL/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 in the following year.
- Ungerminated 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**

SUREFIRE METSULFURON METHYL 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.

If tank mixing with another product, ensure SUREFIRE METSULFURON METHYL 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.

## **Use of Surfactant/ Wetting agent**

SUREFIRE METSULFURON METHYL 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 100 mL/ 100 L of final spray volume.

SUREFIRE METSULFURON METHYL Herbicide tank mixed with Glyphosate - Use a non-ionic surfactant when mixing with glyphosate. In some tank mix situations the use of an organosilicone penetrant (e.g. PCT REACTOR) is recommended. This recommendation must be strictly followed in order to achieve adequate weed control.

Gas gun applications - An organosilicone penetrant (e.g. PCT REACTOR) should be added at the rate of 10 mL/ 5 L or 200 mL/100 L of final spray volume.

Where a mineral spray oil is recommended use 1 L/100 L 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**

SUREFIRE METSULFURON METHYL 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 3 g SUREFIRE METSULFURON METHYL Herbicide + 400 mL of Surefire 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 150 L prepared spray per hectare. Increase to 200 L/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 100 L/ha on blackberries and 60 L/ha on *Mimosa pigra* up to a maximum of 200 L 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 which 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°C (except when treating *M. pigra*).

### **Tank mixes with Surefire Glyphosate 360 Herbicide**

In certain situations such as the presence of harder to kill species or in follow-up treatment situations a tank mix with Surefire Glyphosate 360 Herbicide 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 Ester, 2,4-D Amine, Dicamba, Clopyralid 300, Fluroxypyr 200, 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 which 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 SUREFIRE METSULFURON METHYL 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 Recrop Interval
5.5 and below	Sub Clover <sup>2</sup> and Haifa White Clover	5	150 mm	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	100 mm	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	175 mm
			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.

#### GENERAL INSTRUCTIONS - CEREAL CROPS

SUREFIRE METSULFURON METHYL 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 5 cm 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 7.5 cm 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 legumes will be seriously affected by the product.

Should the crop have been treated with another sulfonylurea herbicide e.g. Chlorsulfuron, consult your local representative or Department of Agriculture before application of SUREFIRE METSULFURON METHYL 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 50 L prepared spray/ha.

#### Aerial Application

Apply in a minimum of 20 L/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 of 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 spraying oils is NOT recommended.

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

### **Compatibility**

SUREFIRE METSULFURON METHYL Herbicide is compatible with most commonly used broadleaf herbicides including:

Diuron Flowable, 2,4-D Amine, Agtryne, Broadstrike, Brominil M, Eclipse, Terbutryn, MCPA Ester, LVE MCPA, Jaguar<sup>1</sup>, Tigrex<sup>1</sup>, Tordon<sup>1</sup> 242, Tordon<sup>1</sup> 75D, Metribuzin, Lontrel<sup>1</sup>, Dicamba, Starane<sup>1</sup>, 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 SUREFIRE METSULFURON METHYL 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
Fenoxaprop-P-ethyl	YES	-	NO
Diclofop-methyl	REFER TO NOTES ON SUREFIRE METSULFURON METHYL/ DICLOFOP METHYL BASED PRODUCTS OR SUREFIRE METSULFURON METHYL/ TRISTAR MIXTURES		-
Diclofop + Fenoxaprop			NO
Tralkoxydim	NO	-	NO
Flamprop-M-methyl	NO	-	-

**Notes on SUREFIRE METSULFURON METHYL / Diclofop-methyl or SUREFIRE METSULFURON METHYL / Diclofop + Fenoxaprop:**

- a) Some reduction in grass weed control can be expected.
- b) In heavily weed infested areas control may be inadequate (Victoria and Tasmania only).
- c) Significant reduction in grass weed control should be expected (SA only).
- d) Mixtures of SUREFIRE METSULFURON METHYL 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 which must be mixed with clean water.

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.

If tank mixing with another product, ensure SUREFIRE METSULFURON METHYL 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 recropping 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.

MINIMUM RECROPPING INTERVAL				
Soil pH*	10 days	6 weeks	9 months	14 months
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 sub clover.

### GENERAL INSTRUCTIONS RELATING TO ALL USES FOR SUREFIRE METSULFURON METHYL HERBICIDE

#### Sprayer Cleanup

Many plant species are sensitive to low concentrations of SUREFIRE METSULFURON METHYL 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 cleanup 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 300 mL 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.

**DIRECTIONS FOR USE – BRUSH APPLICATIONS (All States):**

SITUATION	WEEDS CONTROLLED	RATE*			CRITICAL COMMENTS FOR ALL WEEDS: Apply when target weed is in active growth and not under stress from waterlogging, drought etc
		HANDGUN (g/100 L)	BOOM (g/ha)	GAS GUN (g/L)	
Native Pastures**, Rights of Way, Commercial and Industrial Areas	Alligator Weed ( <i>Alternanthera philoxeroides</i> )	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 + an organosilicone penetrant (200 mL/ 100 L)		1 + an organosilicone penetrant (10 mL/ 5 L)	Apply to plants up to 4 m 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 + organosilicone penetrant (10 mL/ 5 L)	For handgun applications apply to ensure thorough coverage but not to cause run-off.
	Bellyache Bush ( <i>Jatropha gossypifolia</i> )	10 + an organosilicone penetrant (200 mL /100 L)			-

Native Pastures**, Rights of Way, Commercial and Industrial Areas	Blackberry ( <i>Rubus</i> spp.)	10 + Mineral Crop Oil (1 L/100 L)		1 + an organosilicone penetrant (10 mL/ 5 L)	Spray to thoroughly wet all foliage and canes. Ensure peripheral runners are sprayed. Tas: Apply after petal fall. <b>Do not</b> 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 500-800 L/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, retreat in the next growth period.
	Darling Pea ( <i>Swainsona</i> spp.)		10		Apply 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 preflowering. Ensure correct coverage of infested area.

Native Pastures\*\*,  
Rights of Way,  
Commercial and  
Industrial Areas

Great Mullein ( <i>Verbascum thapsus</i> )		20 + an organosilicone penetrant (200 mL /100 L)		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</i> spp.)	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 laevigata</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 2.5 m 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		<b>Handgun</b> - Spray to thoroughly wet all foliage but not to cause run-off. Boom (Pastures only): Apply up to rosette stage ensuring thorough spray coverage. Adjust boom height to ensure thorough spray overlap.
	5			



Native Pastures\*\*,  
Rights of Way,  
Commercial and  
Industrial Areas

Paterson's Curse/ Salvation Jane ( <i>Echium plantagineum</i> )	5	15		<b>Handgun:</b> Spray to thoroughly wet all foliage but not to cause run-off. <b>Boomspray:</b> Adjust boom height to ensure correct spray overlap. <b>WA only:</b> Spray plants at early flowering stage (August – September).
Privet ( <i>Ligustrum</i> spp.)	10		1 + an organosilicone penetrant (10 mL/ 5 L)	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</i> spp.)	10	10	-	
Wait-A-While ( <i>Caesalpinia decapetala</i> )	10			
Wild Turnip ( <i>Brassica tournefortii</i> )	5			
Toxic <i>Pimelea</i> species (Desert riceflowers, Flaxweed)	10 g/100 L plus addition of a suitable non-ionic surfactant as per label rate	10 g/ha plus addition of a suitable non-ionic surfactant as per label rate	-	To be applied when plant is green. Apply by boomspray in a volume of 1000 L/ha. For spot spray thoroughly wet all foliage to the point of run-off (approx. 1000 L/ha spray volume). DO NOT apply more than 2 applications per year with a minimum re-treatment interval of 21 days between consecutive applications. The applications could be used in creating and maintaining hospital areas for livestock suffering from <i>Pimelea</i> poisoning. Warning: <i>Pimelea</i> may become more attractive to stock after treatment. Stock should be excluded from treated areas until sprayed <i>Pimelea</i> plants are leafless, seedless and obviously dead.

\* ALWAYS ADD A SURFACTANT/ WETTING AGENT

\*\* LEGUMES IN THE PASTURE WILL BE DAMAGED

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## AERIAL APPLICATION BY HELICOPTER

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</i> spp.)	NSW, Tas, Vic only	160	Ensure all foliage is thoroughly covered including peripheral runners. Use at least 100 L 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°C. Apply in at least 60 L/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.

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**SUREFIRE METSULFURON METHYL HERBICIDE + GLYPHOSATE 360 HERBICIDE TANK MIX (always refer to First Aid, Safety Directions, Resistant Weeds Warning and any other restrictions for GLYPHOSATE 360 HERBICIDE)**

**FOR ALL STATES**

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

SITUATION	WEEDS CONTROLLED	RATE ALWAYS ADD AN ORGANOSILICONE PENETRANT		CRITICAL COMMENTS For All Weeds: Apply when target weed is in active growth and not under stress from water logging, drought etc.
		BOOM OR AERIAL	HANDGUN OR KNAPSACK	
Native Pastures*, Rights of Way, Commercial and Industrial Areas, Domestic and Public service areas	Blackberry ( <i>Rubus</i> spp.)	60 g + 8 L Surefire Glyphosate 360 Herbicide per ha.	3 g + 400 mL Surefire Glyphosate 360 Herbicide per 100 L water	Apply from flowering and before leaf yellowing. Do not apply to bushes bearing mature fruit.
	Bracken ( <i>Pteridium esculentum</i> )	30 g +4 L Surefire Glyphosate 360 Herbicide per ha		Apply when fronds are fully expanded but prior to 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.

\* LEGUMES IN PASTURES WILL BE DAMAGED

**SUREFIRE METSULFURON METHYL HERBICIDE + GLYPHOSATE 360 HERBICIDE TANK MIX (CONTINUED) (always refer to First Aid, Safety Directions, Resistant Weeds Warning and any other restrictions for GLYPHOSATE 360 HERBICIDE)  
FOR ALL STATES**

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

SITUATION	WEEDS CONTROLLED	STATES	RATE per 100 L HANDGUN OR KNAPSACK Always add 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	10 g + 200 mL Glyphosate 360 Herbicide + organosilicone penetrant (200 mL/100 L)	Spray plants up to 4 m high ensuring thorough coverage. Plants growing from large lignotubers may not be controlled.
	Australian blackthorn ( <i>Bursaria spinosa</i> )	NSW, Qld, Vic, Tas only	10 g + 200 mL Glyphosate 360 Herbicide	Spray to point of runoff.
	Bitou Bush/ Boneseed ( <i>Chrysanthemoides monilifera</i> )	NSW, Qld, Vic, SA only		Ensure thorough coverage. Minimise contact with desirable species.
	Blackberry ( <i>Rubus</i> spp.)	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	10 g + 200 mL Glyphosate 360 Herbicide + organosilicone penetrant (200 mL/100 L)	Spray plants up to 4 m high. Trees growing from 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 2 m tall.
	Hawthorn ( <i>Crataegus laevigata</i> )	NSW only	10 g + 200 mL Surefire Glyphosate 360 Herbicide	Spray to the 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 2 m tall.
	Privet ( <i>Ligustrum</i> spp.)	NSW, Qld only		Apply to bushes up to 3 m 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 100 mL/100 L. 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		

- LEGUMES IN THE PASTURE WILL BE DAMAGED

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**ESTABLISHED PASTURES AND PASTURE RENOVATION  
DIRECTIONS FOR USE:**

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

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## APPLICATION IN WINTER CEREAL CROPS

### DIRECTIONS FOR USE:

#### Post Crop and Weed Emergence by Ground and Aerial Application - SUREFIRE METSULFURON METHYL HERBICIDE ONLY

CROPS	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 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.
	Calomba Daisy ( <i>Pentzia suffruticosa</i> )	SA only	5	
	Cape Tulip ( <i>Homeria</i> spp.)	WA only	5	
	Charlock ( <i>Sinapis 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, Triticale, Wheat (cont)	Chicory ( <i>Cichorium intybus</i> )	Qld only	5	
	Clover (Subterranean) ( <i>Trifolium subterraneum</i> )	All States	5	

CROPS	WEEDS CONTROLLED	STATES	RATE (g/ha)	CRITICAL COMMENTS
	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 which 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	Use the higher rate under heavy weed pressure.
		Qld, NSW, Vic, Tas, SA only	5 or 7	Apply after the 3 node stage.
	Faba Beans ( <i>Vicia faba</i> )	Vic, SA only	5	
	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 after the 5 leaf stage.	

Barley, Cereal Rye, Triticale, Wheat (CONT)	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 LVE MCPA is recommended.
	Lincoln Weed ( <i>Diplotaxis 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.
	Lupins ( <i>Lupinus albus</i> )	NSW, Vic, SA, WA only	5	
	Mallee Catchfly ( <i>Silene apetala</i> )	SA only	5	
	Medics ( <i>Medicago</i> spp.)	All States	5	
	New Zealand Spinach ( <i>Tetragonia tetragonoides</i> )	Qld only	7	Apply before the 4 leaf stage.
	Parthenium Weed ( <i>Parthenium hysterophorus</i> )		5 or 7	Apply the lower rate before the 4 leaf stage and the higher rate at 4 leaf to rosette stage.
	Paterson's Curse/ Salvation Jane ( <i>Echium plantagineum</i> )	Tas, WA 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		



Barley, Cereal Rye, Triticale, Wheat (CONT)	Red Pigweed ( <i>Portulaca oleracea</i> )	Qld only	5	Apply before the 6 leaf stage.
			7	Apply rate when weed populations are dense and majority of weeds are 6 leaf stage.
	Rough Poppy ( <i>Papaver hybridum</i> )	NSW, Vic, Tas, SA only	5	
	Saltbush ( <i>Atriplex muelleri</i> )	Qld only	5 or 7	Use the low rate up to 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	
	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 Jack (s) ( <i>Emex australis</i> )	WA only	5	
		Qld, NSW, Vic, Tas, SA only	5 or 7	Use higher rate under heavy weed pressure.
Stagger weed ( <i>Stachys arvensis</i> )	All States	5		
Barley, Cereal Rye, Triticale, Wheat	Storksbill/ Wild Geranium ( <i>Erodium spp.</i> )	Vic, Tas, SA, WA only	5	

(CONT)

Turnip weed ( <i>Rapistrum rugosum</i> )	All States	5	
Volunteer Sunflower ( <i>Helianthus annuus</i> )	Qld only	5 or 7	Apply at the low 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	

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**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	5 g + 500 mL Diuron Flowable (500 g/L) + 500 mL MCPA Amine (500 g/L) <b>(Ground application only)</b>	3 to 5 leaf (Zadoks 13-15) NSW only 5 leaf (Zadoks 15) Vic only	Do not apply to Shorttim, Kamilaroi, or Olympic wheat. Apply when weeds are 2-5 leaf. <b>For Diuron (Ground application only) see Tank Mixes</b>
		SA only	5 g + 500 mL Diuron Flowable (500 g/L) + 350 mL MCPA Amine (500 g/L) <b>(Ground application only)</b>	3 to 5 leaf (Zadoks 13-15)	
		WA only	5 g + 350 mL Diuron Flowable (500 g/L) + 400 mL MCPA Amine (500 g/L)	3 to 4 leaf (Zadoks 13-14)	
Wheat, Barley	Capeweed ( <i>Arctotheca calendula</i> )		5 g + 550 mL Terbutryn + 500 mL MCPA Amine (500 g/L)	3 leaf to early tillering (Zadoks 13-21)	Apply when weeds are 2-6 leaf.
		SA only	5 g + 550 mL Terbutryn		
		NSW only	5 g + 850 mL Terbutryn		

Wheat, Barley, Triticale & Cereal Rye	Capeweed ( <i>Arctotheca calendula</i> )	NSW, Vic, SA, WA only	5 g + 1 L Terbutryn/MCPA	3 leaf to early tillering (Zadoks 13-21)	Apply when weeds are 2 to 6 leaf.	
		WA only	5 g + 750 mL Bromoxynil/MCPA	3 leaf to full tillering (WA only)	Apply when weeds are up to 6 leaf stage.	
		QLD, NSW, Vic, Tas, SA only	5 g + 1.4 L Bromoxynil/MCPA	5 leaf to full tillering (Qld, NSW, Vic, Tas only)		
		WA only	5 g + 1.4 L Bromoxynil/MCPA	3 leaf to full tillering (WA only)		
		QLD, NSW, Vic, Tas, SA only	5 g + 2.1 L Bromoxynil/MCPA	5 leaf to full tillering (Qld, NSW, Vic, Tas only)	Apply when weeds are 6 to 8 leaf stage.	
	Wild Radish ( <i>Raphanus raphanistrum</i> )	Qld only	5 g + 700 mL – 1 L 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 the rosette stage.	
		NSW only		Apply 700 mL 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	5 g + 1.4 L MCPA Amine (500 g/L)	Early tillering to before boot (Zadoks 21-39)		Apply when weeds are seedling to rosette.
		WA only	5 g + 1.2 L MCPA Amine (500 g/L)	5 leaf to tillering (Zadoks 15-30)		
	Wheat, Barley	Wild Radish ( <i>Raphanus raphanistrum</i> )	WA only	5 g + 250 mL MCPA Ester/Diflufenican	Wheat: 3 leaf to late tillering (Zadoks 13-30) Barley: 5 leaf to late tillering (Zadoks 15-30)	Apply up to the 4 leaf stage and not more than 10 cm in diameter.

CROP	WEEDS CONTROLLED	STATES	RATE (g/ha)	CROP STAGE AT APPLICATION	CRITICAL COMMENTS
Wheat, Barley, Cereal Rye & Triticale	Wild Radish ( <i>Raphanus raphanistrum</i> )	NSW, Vic, Tas, SA, WA only	5 g + 1.1 L to 1.6 L MCPA	5 leaf to commencement of flag leaf (Zadoks 15-37)	Apply up to 2-3 leaf stage only.
	Saffron thistle ( <i>Carthamus lanatus</i> )	NSW, Vic, Tas, SA, WA only	5 g + 1.1 L to 1.6 L LVE MCPA	5 leaf to commencement of flag leaf (Zadoks 15-37)	Spray young rosettes before leaves become spiny.
		NSW, Vic, Tas, SA, WA only	5 g + 300 mL Clopyralid (300 g/L)	4 to 5 leaf stage (Zadoks 14-15)	Spray when weeds are young and actively growing. <b>DO NOT</b> apply Clopyralid to a cereal crop if field peas are to be sown the following season unless a cereal stubble is to be burnt.
	Variegated Thistle ( <i>Silybum marianum</i> )	Tas only*	5 g + 1.5 L 2,4-D Amine (500 g/L)	5 leaf to early tillering (Zadoks 15-21)	Apply to weeds at seedling to rosette stage.
		NSW only	5 g + 700 mL to 1.7 L 2,4-D Amine (500 g/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 seedling to rosette stage. Use the lower rate on seedling weeds and the higher rate on well developed weeds.
		Qld only	5 g + 1.1 L 2,4-D Amine (500 g/L)	Mid tillering to before boot (Zadoks 23-39)	Apply to weeds at the seedling to rosette stage.
		NSW, Vic, Tas, SA, WA only	5 g + 840 mL 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> )	5 g + 2.1 L LVE MCPA	Moderately susceptible. Spray young rosettes.		
Wheat, Barley, Cereal Rye & Triticale	Slender thistle ( <i>Carduus tenuiflorus</i> and <i>C. pycnocephalus</i> )	NSW only	5 g + 1 L to 1.7 L 2,4-D Amine (500 g/L)	Apply after the first node can be felt in the base of the tiller and before the 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.
		Tas only*	5 g + 1.7 L 2,4-D Amine (500 g/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 7 g + 1 L MCPA/ Picloram K salts	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.
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\* 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.

**CEREALS - FALLOW/ PRE-PLANT KNOCKDOWN  
SUREFIRE METSULFURON METHYL HERBICIDE + GLYPHOSATE**

CROP	WEEDS CONTROLLED	STATES	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 7 g + Glyphosate at labelled rates	Refer to Post Crop and Weed Emergence Section of this label and Glyphosate Directions for Use	<b>DO NOT</b> apply less than 10 days prior to sowing as crop injury may occur, particularly under dry, cold conditions. Apply when weeds are actively growing. Refer to critical comments and General Instructions of the respective labels. Use the appropriate rate of each product for the target weed.
		WA only	5 g + Glyphosate at labelled rates		
Barley, Triticale & Cereal Rye		All States except WA	5 or 7 g + Glyphosate at labelled rates		<b>DO NOT</b> apply less than 6 weeks prior to 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 the respective labels. Use the appropriate rate of each product for the target weed.
		WA only	5 g + Glyphosate at labelled rates		

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## MUNG BEANS CROP DESICCATION AND WEED CONTROL

CROP	PURPOSE	RATE (g/ha)	CRITICAL COMMENTS
Mung beans	Field crop desiccation	5 g/ha plus glyphosate at label rates.	Apply when mung bean crop is mature and when pods are brown/black. Use the higher rate of glyphosate when crops or weeds are dense and when faster desiccation is required. Speed of desiccation is dependent on crop stage, growing conditions and weather conditions during and after application. This use should be part of an integrated weed management strategy that incorporates herbicides with different modes of action and alternative cultural weed practices.

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