

Product Name: MACSPRED GLYMAC 450 HERBICIDE
APVMA Approval No: 52780/137346



Label Name:	MACSPRED GLYMAC 450 HERBICIDE
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Signal Headings:	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Constituent Statements:	450 g/L GLYPHOSATE PRESENT AS THE ISOPROPYLAMINE SALT
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Mode of Action:	GROUP M HERBICIDE
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Statement of Claims:	A non-residual herbicide for the control of a broad range of Annual and Perennial Weeds
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Net Contents:	5 L - 1000 L
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Restraints:	<p>DO NOT disturb treated weeds by cultivation, sowing or grazing for 1 day after treatment for annual weeds, and 7 days after treatment for perennial weeds.</p> <p>DO NOT treat weeds under poor growing conditions or dormant conditions as occur in drought, waterlogging, disease, insect damage or following frost. Reduced control may also occur when treating weeds heavily covered with dust or silt. Rainfall occurring up to 6 hours after application may reduce effectiveness. Heavy rainfall within 2 hours of application may wash the chemical off the foliage and a repeat treatment may be required.</p> <p>SPRAY DRIFT RESTRAINTS</p> <p>Specific definitions for terms used in this section of the label can be found at apvma.gov.au/spraydrift</p> <p>DO NOT allow bystanders to come into contact with the spray cloud.</p> <p>DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.</p> <p>DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.</p>
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DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

Directions for Use:

This section contains file attachment.

Other Limitations:

Withholding Periods:

NOT REQUIRED WHEN USED AS DIRECTED

Trade Advice:

General Instructions:

General Instructions

The product is translocated throughout the plant where it kills both foliage and roots. Ideally the best time to use the product is when target species are in a state of active growth, moderate climatic conditions are present and plants are free of disease and dirt cover.

While cool and cloudy conditions can sometimes delay the appearance of chemical activity, it can generally be expected that symptoms of chemical effect will appear 2-7 days after spraying of annual species and 2-3 weeks after spraying of perennial species.

The symptoms are demonstrated by a yellowing and accompanying wilting, progressing to a brown out.

Safety To Crops

Do not allow the product to come in contact with the foliage, fruit or green stems of desirable crops, plants or trees as the nature of the chemical is non selective. Some useful guidelines that can help in this regard are;

- 1) Don't use if the wind is blowing towards desirable plants in close proximity
- 2) Avoid fine droplet settings when calibrating
- 3) Avoid spraying in still air and hot days.

While the product is rapidly inactivated on contact with the soil it is important certain factors are kept in mind;

- 1) Where there is a light presence of unwanted vegetative matter sowing can commence from one day after spraying.
- 2) Where the plant cover is heavy it is better to allow vegetative matter to decay prior to sowing to allow formation of a satisfactory seedbed.

Spray Preparation

1. Make sure tank is clean and residues from previous usage have been removed.
2. Half fill the tank with clean water bearing in mind that less than perfect results may occur if water containing soil particles is used or hard water containing calcium salt. Glyphosate may be inactivated by water which is contaminated with clay particles or soil.
3. Add the appropriate amount of product as per the Directions for Use Tables.
4. Mix well keeping filling hose below surface to avoid foaming.
5. Add water to fill vat.
6. Remove hose from tank as soon as full to prevent back siphoning.

NB: Do not use mechanical agitators, as they cause excessive foaming.
Do not add non approved herbicides and insecticides.

NBB: Use only plastic, plastic-lined, stainless steel, aluminium, copper, brass or fibreglass tanks. Galvanised steel or unlined steel spray tanks can react with the product to hydrogen gas, which can form a combustible gas mixture which can be flashed by ignition sources.

Surfactant

The addition of surfactant may improve weed control where water rates are high or product rates are low. Suggested Brushwett surfactant rates are 200mL/100L of 1000g/L non-ionic surfactant or 250-500mL of 700g/L surfactant. Do not add spraying oils, agricultural chemicals or any other material except as directed on the label.

Rainfall Effects

Heavy rain within 2 hours of spraying can mean that the chemical may be washed off the plant, with the result that the herbicide may not be totally effective. Respraying may be needed.

Normal rain up to 6 hours after application may reduce the effectiveness.

Adequate results may not be achieved if the product is applied when weeds are stressed by conditions such as drought conditions, water logging or frost.

Soil Persistence

The product is not persistent in soils and is rapidly broken down by microbes present in the soil, as well as by hydrolysis caused by free standing moisture or soil moisture that may be present in soil particles. Should residual activity be needed refer to "Compatibility Section" of this label.

Application Equipment

Types of Equipment

The following types of equipment may be used in applying the product:

- Knapsack
- Handgun
- Boom
- Wiper
- Aerial

For Knapsack and Handgun Equipment

Maximum efficiency can be achieved by using a D6 spray plate and applying at a pressure of 400 - 700 kpa. As the product is translocated through contact points on the plant, good coverage is needed to maximise uptake by the plant. Volume used per given area will vary according to the density of the target species present.

For Boom Equipment

Maximum efficiency can be achieved by using fan nozzles at a pressure of 240-280 kpa. Water volumes per hectare of treated area can vary depending on density of target species but no more than 200 litres would be necessary. In conservation tillage situations volumes in the 50-100 litre/ha range would suffice.

For Aerial Equipment

Using micronair and boom equipment a MEDIUM to COARSE droplet size is recommended. A swath width in the range of 15-17 metres is most appropriate for this form of spraying. Minimum spray volume would be 15 litres/Ha. When using this form of application give consideration to the fact that the product is highly non-selective and if desirable plants, trees etc are in the vicinity of the area to be sprayed, they could be effected by drift or targeted contact. This would limit usage via this technique to such situations as weed control on fallows or pasture, control prior to establishment of crops or pasture. Another point to bear in mind are that on sloping terrain height above the ground may vary from point-to-point, and also at any given point, from boom tip to boom tip. It is also worth remembering that there is more land area on a hilly block than a flat block, even though the perimeter distance may be the same. In such situations increase the water volume to 30-80 litres/ha and increase the droplet size to COARSE.

Note: In high temperatures and dry conditions evaporation of droplets prior to reaching target species can occur and it is therefore important to increase water volume to at least

30 litres/ha and COARSE droplet size if temperatures are in excess of 25°C. DO NOT SPRAY if temperature is above 30°C.

For spraying Blackberries in forestry refer to the directions for use.

For Wiper Equipment

Such as Ropewick applicators etc detailed information should be obtained from the manufacturers. As a general guide 800mL of product should be mixed with 2 litres of water. Weeds should ideally be 15cm above the crop or pasture. One pass in each direction commonly referred to as a "double pass" will maximise effectiveness. The lower the vehicle speed the better the result. Certainly, no faster than 8 km/hr is recommended.

Sprayer Clean Up

After use, clean all spray equipment by thoroughly washing with clean water, in order to prevent corrosion to tanks, lines and nozzles. Aircraft used in application should be thoroughly washed with particular attention to wheels and landing gear.

Compatibility

It has been established that the following products may be mixed with Glyphosate to broaden the spectrum of pests controlled, add soil residual activity and improve performance. Refer to the "Directions for Use" Section for detailed information on the tank mix situations.

Additives: Crystalline Ammonium Sulphate assists in minimising antagonism when mixed with flowable Triazine herbicides. The only form of Ammonium sulphate to be used is the crystalline form (not prilled or granule forms). Test the quality by dissolving 2 tablespoons in 2 litres of water. Swirl gently for 2 minutes. Should undissolved particles still remain at the end of that time, pre-dissolve them prior to adding product to spray tank. Ensure solution is poured through a screen.

Herbicides: Atrazine – flowable or granular (see additives above – do not apply the tank mix for control of Barnyard grass or Liverseed grass), Dicamba, 2,4-D ester, Express, Macspred Triclopyr 600, chlorsulfuron, Macspred Metmac, Yield, Stomp, Triasulfuron, LVE MCPA, oxyfluorfen 240, Bestwet Organosilicone Penetrant, Macspred Hexmac

Oxyfluorfen 240 – The addition of Oxyfluorfen at 75mL/ha to recommended rates of this product prior to planting Wheat or Barley will improve knockdown and increase the speed at which treated weeds develop visible symptoms of phytotoxicity. Add a compatibility agent to improve the compatibility in cold water (less than 15°C). See Directions below.

Insecticides: Chlorpyrifos, dimethoate, fenitrothion, Imidan, Le-Mat, Sumithion.

Compatibility agent

Rate: 200mL/100L spray solution. When mixing with Oxyfluorfen, add to improve the compatibility in cold water (less than 15°C). A compatibility agent must be pre-mixed with Oxyfluorfen before adding to the spray tank. Refer to label for full directions.

Resistance Warning:

Resistant Weeds Warning

GROUP 9 HERBICIDE

Macspred Glymac 450 Herbicide is a member of the glycine group of herbicides. Macspred Glymac 450 Herbicide has the inhibitor of EPSP synthase mode of action. For weed resistance management Macspred Glymac 450 Herbicide is a Group 9 Herbicide. Some naturally occurring weed biotypes resistant to Macspred Glymac 450 Herbicide and other Group 9 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 Macspred Glymac 450 Herbicide or any other Group 9 herbicides.

	Since the occurrence of resistant weeds is difficult to detect prior to use, Macspred Pty Ltd accepts no liability for any losses that may result from the failure of Macspred Glymac 450 Herbicide to control resistant weeds.
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Precautions:	
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Protections:	<p>Protection of Crop, Native and other Non-Target Plants DO NOT apply under weather conditions, or from spraying equipment, that may cause drift onto nearby susceptible plants/crops, cropping lands or pastures.</p> <p>Protection of Wildlife, Fish, Crustaceans and Environment DO NOT contaminate streams, rivers or watercourses with the product 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 no withholding period for grazing stock, but to give the product a chance to be efficiently absorbed by sprayed vegetation, it is recommended that livestock be kept clear of treated annual weeds for one day after spraying, and for perennial weeds 7 days. For certain plants known to be toxic to stock, it is advisable to keep livestock away until complete browning occurs.</p>
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Storage and Disposal:	<p>Do not store the product in galvanised steel or unlined steel containers, as the product may react to produce hydrogen gas, which in turn could form a highly combustible gas that could explode if ignited by an open flame, or spark, lighted cigarette etc.</p> <p>Store in the closed original container in a well ventilated area as cool as possible . Do not store for prolonged periods in direct sunlight.</p> <p>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.</p> <p>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.</p> <p>For refillable containers: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>
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Safety Directions:	Will damage eyes. Will irritate the skin. Avoid contact with eyes and skin. When opening the container and preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length chemical resistant gloves and goggles. If product in eyes, wash it out immediately with water. If product on skin, immediately wash area with soap and water. Wash hands after use. After each day's use, wash gloves, goggles and contaminated clothing.
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First Aid Instructions:	If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone Australia: 13 11 26, New Zealand 0800 764 766.
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First Aid Warnings:	
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DIRECTIONS FOR USE

ANNUAL WEED CONTROL - ALL STATES

Weeds Controlled	Rate	Critical Comments
<p>Amaranth (<i>Amaranthus</i> spp.) Barley grass (<i>Hordeum leporinum</i>) Barnyard grass (<i>Echinochloa</i> spp.) Brome grass (<i>Bromus</i> spp.) Caltrop (<i>Tribulus terrestris</i>) Canary grass (<i>Phalaris</i> spp.) Capeweed (<i>Arctotheca calendula</i>) Cereals (<i>volunteer</i>) Chickweed (<i>Stellaria media</i>) Cobbler's Peg (<i>Bidens pilosa</i>) Deadnettle (<i>Lamium amplexicaule</i>) Double Gee (<i>Emex australis</i>) Fumitory (<i>Fumaria officinalis</i>) Ground Cherry (<i>Physalis angulata</i>) Lesser Swinecress (<i>Coronopus didymus</i>) Liverseed grass (<i>Urochloa panicoides</i>) Mintweed (<i>Salvia reflexa</i>) Paradoxa grass (<i>Phalaris paradoxa</i>) Paterson's Curse (<i>Echium plantagineum</i>) Pigweed (<i>Portulaca oleracea</i>) Potato weed (<i>Galinsoga parviflora</i>) Rye grass (<i>Lolium rigidum</i>) Saffron Thistle (<i>Carthamus lanatus</i>) Silver grass (<i>Vulpia</i> spp.) Sow Thistle (<i>Sonchus oleraceus</i>) Spear Thistle (<i>Cirsium vulgare</i>) Spiny Burrgrass (<i>Cenchrus</i> spp.) Spurge (<i>Euphorbia</i> spp.) Sub Clover (<i>Trifolium subterraneum</i>) Thornapple (<i>Datura</i> spp.) Wild Mustard (<i>Sisymbrium officinale</i>) Wild Oats (<i>Avena</i> spp.) Wild Turnip (<i>Brassica tournefortii</i>) Winter grass (<i>Poa annua</i>) Variegated Thistle (<i>Silybum marianum</i>)</p>	<p>Boom:- 1.6-2.4 L/ha</p> <p>Handgun:- 400-560mL per 100L of water</p> <p>Knapsack:- 60-80mL per 15 L of water</p>	<p>All Weeds Spray actively growing plants The taller the weed the higher the rate. As a guide use the higher rate when weeds are higher than 15 cm.</p> <p>If residual activity is required, see section titled "Compatibility". To use a residual herbicide, use the herbicides that have been recommended as being compatible in accordance with their label rates.</p> <p>Use Glyphosate at rates indicated in the adjacent column.</p>

PERENNIAL WEED CONTROL

Weeds Controlled	State	Rate			Critical Comments
		Boom L/ha	Knapsack mL/15L	Handgun vol/100L	
Bent Grass (<i>Agrostis tenuis</i>)	Vic and Tas only	2L	60mL	400 mL	Apply to actively growing plants in late spring when they have some seed head development but before summer drought stress. Bent grass should NOT be grazed heavily at spraying. Follow-up management is required to limit seedling re-establishment. Full disturbance with tyned implement should follow 10-21 days after spraying. Application of this product should be followed by a summer crop and/or by reseeding pasture or crop the following autumn.
Blady Grass (<i>Imperata cylindrica</i>)	Qld, NSW only	7.2L	160mL	1L	Spray at head stage while plants are in active growth stage.
Carpet Grass (<i>Axonopus</i> spp.)	All States	2.4L	60mL	400mL	Spray at early head stage while in active growth stage.
Cocksfoot (<i>Dactylis glomerata</i>)	All States	2.4L	80mL	560mL	Spray at early head stage while in active growth stage
Couch (<i>Cynodon dactylon</i>)	All Sates	7.2L	160mL	1L	Spray at early head stage (late Spring)
Cumbungi (<i>Typha</i> spp.)	All States	7.2L	160mL	1L	Spray during Summer or Autumn period during the heading stage. Except for Tasmania, Wiper equipment can be used. Refer to information on Application Equipment Section of the label. DO NOT apply to weeds growing in or over water. DO NOT spray across bodies of water and DO NOT allow spray to enter the water. DO NOT allow water to return to dry channels or drains within 4 days of application.
Flatweed (Cat's Ear) (<i>Hypochoeris radicata</i>)	All States	2.4L	80mL	560mL	Spray at early flowering stage to fully developed rosettes.
Glyceria (<i>Glyceria maxima</i>)	Tas only	4.8L	120mL	800mL	Spray at fully headed stage in late Summer/Autumn. Add surfactant at recommended rate. DO NOT apply to weeds growing in or over water. DO NOT spray across bodies of water and DO NOT allow spray to enter the water. DO NOT allow water to return to dry channels or drains within 4 days of application.

Guinea Grass (<i>Panicum maximum</i>)	All States	7.2L	160mL	1L	Spray at early head stage. Refer to "Application Equipment" section of the label: sub-heading "Wiper Equipment" as it can also be used.
Hoary Cress (<i>Cardaria draba</i>)	Vic, NSW only	1.2L	60mL	400mL	Spray at late rosette to flowering stage, late July to September. At this time of year ensure frosts, waterlogging or possibly drought stress are not a restraint as plants need to be in active growth stage. Refer to "Wiper Equipment" section of this booklet if this use technique can be applied to the situation.
Johnson Grass (<i>Sorghum halepense</i>)	All States	4.8L	120mL	800mL	Spray at early head stage when plants are actively growing or refer to "Wiper Equipment" section of this booklet if that application technique is to be used on Johnson Grass.
Kangaroo Grass (<i>Themeda australis</i>)	All States	4.8L	120mL	800mL	Spray at early head stage when plants are actively growing.
Kikuyu Grass (<i>Pennisetum clandestinum</i>)	All States	4.8L	120mL	800mL	Spray at early head stage when plants are actively growing.
Nutgrass (<i>Cyperus rotundus</i>)	All States	4.8L	120mL	800mL	Non-cultivated situations.
Nutgrass (<i>Cyperus rotundus</i>)	All States	2.4 plus 2.4	80mL plus 80mL	560mL plus 560mL	If spraying is to be done on crop growing land, apply first spray in February which is about the time that 20% - 25% of plants have reached heading stage. Then a second application is necessary about 2 months later which gives adequate time for full emergence to occur. Because underground runners are broken up by cultivation, individual nuts may spring up and repeat treatments may be needed to obtain a total control situation. On land that is primarily grazing or urban, spray in February/April period, so long as correct growing conditions are present. Again ensure that 20% - 25% of plants have reached the head stage.
Paragrass (<i>Brachiaria mutica</i>)	All States	7.2L	160mL	1L	Spray at early head stage when plants are in active growth. DO NOT apply to weeds growing in or over water. DO NOT spray across bodies of water and DO NOT allow spray to enter the water. DO NOT allow water to return to dry channels or drains within 4 days of application.
Paspalum (<i>Paspalum dilatatum</i>)	All States	4.8L	120mL	800mL	Spray at early head stage when plants are in active growth.

Phalaris (<i>Phalaris aquatica</i>)	SA, Vic, NSW only	2.4L-4.8L	60 – 120mL	400mL – 1L	For medium to longer term control, use the high rates while plants are in active growth phase during Winter/Spring. The lower rates may be used in conjunction with burning (fire breaks). This will give a brown out and better burning conditions. Leave for 2 - 3 weeks after spraying before burning.
Phragmites Common Reed (<i>Phragmites australis</i>)	All States	7.2L	160mL	1L	If the Wiper technique is to be used, refer to "Wiper Equipment" section in this booklet. Spray when plants are getting close to early head stage and actively growing. Spray symptoms may not be observed for a season or more. DO NOT apply to weeds growing in or over water. DO NOT spray across bodies of water and DO NOT allow spray to enter the water. DO NOT allow water to return to dry channels or drains within 4 days of application.
Plantains (<i>Plantago</i> spp)	All States	2.4L	80mL	560mL	Spray when plants have reached the early head stage. Bear in mind that plantains are slow to develop toxicity symptoms.
Prairie Grass (<i>Bromus unioloides</i>)	All States	4.8L	120mL	800mL	Spray at early head stage of heading while plants are in active growth phase.
Qld Blue Grass (<i>Dichanthium sericium</i>)	All States	4.8L	120mL	800mL	Spray at early head stage of heading while plants are in active growth phase.
Red-Leg Grass (<i>Bothriochloa ambigua</i>)	All States	4.8L	120mL	800mL	Spray at early head stage of heading while plants are in active growth phase.
Rhodes Grass (<i>Chloris gayana</i>)	All States	4.8L	120mL	800mL	Spray at early head stage of heading while plants are in active growth phase.
Rope Twitch (<i>Agropyron repens</i>)	Tas, Vic only	4.8L	120mL	800mL	Leave ground in a dormant state for 8 months prior to spraying in late Summer/Autumn, so that the foliage to uptake the product is fully available (at least 20cm in height). Ensure drought stress conditions do not exist at time of spraying.
Rushes (<i>Juncus</i> spp)	All States	See Critical Comments			Use Wiper technique ensuring a high percentage of green matter is present. Refer to section of this booklet entitled "Wiper Equipment" for directions for use. DO NOT apply to weeds growing in or over water. DO NOT spray across bodies of water and DO NOT allow spray to enter the water. DO NOT allow water to return to dry channels or drains within 4 days of application.

Sedge – Tall (<i>Cyperus gracilis</i>)	NSW, Tas, Vic only	See Critical Comments			Use Wiper technique ensuring a high percentage of green matter is present. Refer to section of this booklet entitled "Wiper Equipment" for directions for use. DO NOT apply to weeds growing in or over water. DO NOT spray across bodies of water and DO NOT allow spray to enter the water. DO NOT allow water to return to dry channels or drains within 4 days of application.
Silverleaf Nightshade (<i>Solanum elaeagnifolium</i>)	NSW only	-	240mL	1.6L	Spray actively growing plants when good soil moisture is present. Spray when plants are in the late flowering to berry stage. Follow up sprays will be required to maximise control.
Sorrel (<i>Rumex acetosella</i>)	All States	4.8L	120mL	800mL	Spray at bud stage so long as plants are in an active growth phase. See also "Conservation Tillage" section of this booklet.
Soursob (<i>Oxalis pes-caprae</i>)	NSW, Vic, SA, WA, Tas only	1.2L	60mL	400mL	Best results can be obtained by late Winter/early Spring sprays. Ensure that foliage is in a healthy, actively growing state at time of spraying. See also "Conservation Tillage" section of this booklet.
St John's Wort (<i>Hypericum perforatum</i>)	All States	2.4L	60mL	400mL	Spray at the flowering to post-flowering stage in the Summer/Autumn period. As spraying is only part of the total management concept of pasture improvement, follow-up sprays may be needed.
Thistle Artichoke (<i>Cynara cardunculus</i>)	Vic, SA only	2.4L	60mL	400mL	Spray when plants have reached rosette/early heading stage. Plants should be free of soil deposits, particularly when spraying along roadsides.
Thistle - Californian (<i>Cirsium arvense</i>)	Vic, Tas only	4.8L	120mL	800mL	Spray at the flowering stage. As spraying is only part of the total management concept of pasture improvement. follow-up sprays may be needed.
Water Couch (<i>Paspalum distichum</i>)	All States	2.4L	80mL	560mL	Spray actively growing plants in February/March period. DO NOT apply to weeds growing in or over water. DO NOT spray across bodies of water and DO NOT allow spray to enter the water. DO NOT allow water to return to dry channels or drains within 4 days of application.
Yorkshire Fog (<i>Holcus lanatus</i>)	All States	2.4L	80mL	560mL	Spray when plants have reached the early heading stage and are in an active growth phase.

Conservation Tillage Situations

Land Preparation prior to sowing

Includes directions for use for:- Land preparation prior to sowing (Winter crops, summer crops, fallow) - pasture renovation - pasture topping - pasture manipulation - rice (direct drilling) - sugar cane (ratoon control)	Situation Where weed control is desired prior to sowing PASTURE or a WINTER CROP and prior to disturbing the area to be sown with cultivation or tyned implements at sowing SOUTHERN AUSTRALIA	State NSW, SA WA, VIC only	Weeds Controlled	Rate (L/ha)	Critical Comments
			Amsinkia (<i>Amsinkia</i> spp.)	<12cm diameter 800mL-1L >12cm in diameter 1L – 1.25L	<p>ALL WEEDS: Spray when weeds are actively growing. Ensure regrowth is 6-8cm in height if intensive grazing occurred prior to spray time. Use higher rate if intensive grazing occurred prior to spraying OR if spraying is being carried out late in the season OR cold/overcast conditions are present at the time of spraying.</p> <p>CULTIVATION OR SOWING: This may start 1-21 days after spraying. If Dock, Phalaris, Skeleton Weed, Soursob or Sorrel are present do not cultivate or sow for at least 7 days after spraying.</p> <p>Product will normally only give knockdown reduction in plant numbers and seasonal suppression of these weeds. If cultivation does not take place within 21 day, re-treatment may be necessary.</p> <p>TANK MIXES Refer to section entitled "Compatibility" on Page 5 of this booklet if it planned to spray in conjunction with a herbicide for residual control, improved performance or if you wish to use an insecticide. Read label carefully for conditions of use.</p>
			Annual Phalaris (<i>Phalaris paradoxa</i>)	800mL - 1L pre-tillering; 1L - 1.25L post-tillering	
			Annual Ryegrass (<i>Lolium rigidum</i>)	800mL-1L pre-tillering 1-1.25L post tillering	
			Barley Grass (<i>Hordeum leporinum</i>)	400-800mL pre-tillering 800mL- 1L post-tillering	
			Brome Grass (<i>Bromus</i> spp.)	400-800mL pre-tillering 800-1L post tillering	
			Capeweed (<i>Arctotheca calendula</i>)	<8 cm diameter 400–800mL >8 cm diameter 800mL-1L	
			Cereals (<i>volunteer</i>)	400-800mL pre-tillering, 800mL-1L post tillering	
			Dock (Seedlings) (<i>Rumex obtusifolius</i>)	800mL-1.2L	

Includes directions for use for:- Land preparation prior to sowing (Winter crops, summer crops, fallow) - pasture renovation - pasture topping - pasture manipulation - rice (direct drilling) - sugar cane (ratoon control)		State	Weeds Controlled	Rate (L/ha)	Critical Comments	
	Where weed control is desired prior to sowing PASTURE or a WINTER CROP and prior to disturbing the area to be sown with cultivation or tyned implements at sowing	NSW, SA WA, VIC only	Doublegee (<i>Emex australis</i>)	<8 cm diameter 400–800mL >8 cm diameter 800mL-1L	AS ABOVE	
			Fumitory (<i>Fumaria officinalis</i>)	<12cm diameter 800mL – 1L, >12cm diameter 1L-1.2L		
			Lupins (volunteer) (<i>Lupinus albus</i>)			
			Paterson's Curse/Salvation Jane (<i>Echium plantagineum</i>)			
	SOUTHERN AUSTRALIA		Perennial Phalaris (<i>Phalaris aquatica</i>)	1.2L		
			Saffron thistle (<i>Carthamus lanatus</i>)	<12cm diameter 800mL – 1L, >12cm diameter 1L-1.2L		
			Scotch thistle (<i>Onopordum acanthium</i>)	1L-1.2L		
			Silver grass (<i>Vulpia</i> spp)	800mL-1L pre-tillering 1-1.25L post-tillering		
			Skeleton weed (<i>Chondrilla juncea</i>)	1.2L		Skeleton Weed: Spray only rosettes that have fully emerged. (NSW only)
			Sorrel (<i>Rumex acetosella</i>)	1.2L		ALL WEEDS - SUCCESSFUL CROP ESTABLISHMENT Early sprays to control young weeds will lead to establishing an ideal seed bed. If weed growth is heavy, sowing should be delayed until matter has decayed as the emerging crop shoots may be smothered and set back. Light cultivation to leave decaying matter on surface may help. If using residual type pre-emergent herbicides, seek out label directions that advise of risks associated with crop emergence.
			Spear thistle (<i>Cirsium vulgare</i>)	<12cm diameter 800mL – 1L, >12cm diameter 1L-1.2L		
			Soursob (<i>Oxalis pes-caprae</i>)	1.2L		
			Sub Clover (<i>Trifolium subterraneum</i>)	1.2L		
			Variegated thistle (<i>Silybum marianum</i>)	<12cm diameter 800mL – 1L, >12cm diameter 1L-1.2L		
		Tas only	Annual weeds	1.2L	Surfactant is recommended to be added. Where White Clover, Sorrel and Dock are present, add 1 litre of dicamba (200g/L) in accordance with recommendations on dicamba label.	
			Perennial weeds	2.4L		

Includes directions for use for:-	Situation	State	Weeds Controlled	Rate (L/ha)	Critical Comments
Land preparation prior to sowing (Winter crops, summer crops, fallow) - pasture renovation - pasture topping - pasture manipulation - rice (direct drilling) - sugar cane (ratoon control)	Where weed control is desired prior to sowing a SUMMER CROP or prior to the preparation of a fallow SOUTHERN AUSTRALIA	NSW, SA, WA, Vic only	Annual Ryegrass (<i>Lolium rigidum</i>)	1.2-1.6L	ALL WEEDS: Spray when weeds are actively growing. Ensure regrowth is 6-8cm in height if intensive grazing occurred prior to spraying. Add wetting agent to spray solutions at the recommended rate if Ryegrass is present. Use higher rates under following conditions. Grasses - full tillering. Broadleaf Weeds - stem elongation or budding. Lower rates should be used on younger stages of the weeds or where cultivation is to follow within three weeks. TANK MIXES Refer to section entitled "Compatibility" in this booklet if it planned to spray in conjunction with a residual herbicide. Read label carefully for conditions of use. HOARY CRESS Spray from late rosette to early flowering stage. SOURSOB Spray at tuber exhaustion.
			Barley Grass (<i>Hordeum leporinum</i>)	800mL-1.2 L	
			Brome Grass (<i>Bromus spp.</i>)	1.2-1.6L	
			Capeweed (<i>Arctotheca calendula</i>)	1.2-1.6L	
			Cereals (<i>volunteer</i>)	800mL-1.2L	
			Hoary cress (<i>Cardaria draba</i>)	1.2L	
			Paterson's Curse/Salvation Jane (<i>Echium plantagineum</i>)	1.2L-1.6L	
			Saffron thistle (<i>Carthamus lanatus</i>)		
			Scotch thistle (<i>Onopordum acanthium</i>)		
			Silver grass (<i>Vulpia spp</i>)		
			Spear thistle (<i>Cirsium vulgare</i>)		
			Soursob (<i>Oxalis pes-caprae</i>)	1.2L	
			Wild Mustard (<i>Sisymbrium officinale</i>)	1.2L-1.6L	
			Wild Oats (<i>Avena spp</i>)	800mL-1.2L	
Wild Radish (<i>Raphanus raphanistrum</i>)	1.2L-1.6L				
Wild turnip (<i>Brassica tournefortii</i>)					

Includes directions for use for:- Land preparation prior to sowing (Winter crops, summer crops, fallow) - pasture renovation - pasture topping - pasture manipulation - rice (direct drilling) - sugar cane (ratoon control)	Situation Where weed control is desired prior to sowing a SUMMER OR WINTER CROP or IN fallow situations. NORTHERN AUSTRALIA	State NSW, Qld only Qld only NSW, Qld only	Weeds Controlled <i>Amaranth (Amaranthus macrarpus)</i> <i>Annual Ground Cherry Physalis angulata</i> <i>Annual Phalaris (Phalaris paradoxa)</i> <i>Australian Bluebell (Wahlenbergia gracilis)</i> <i>Barley Grass (Hordeum leporinum)</i> <i>Barnyard grass (Echinochloa spp.)</i> <i>Cudweed (Gnaphalium spp.)</i> <i>Caltrop (Tribulis terrestris)</i> <i>Cereals (volunteer)</i> <i>Fumitory (Fumaria officinalis)</i> <i>Lovegrass (Eragrostis curvula)</i> <i>Mexican poppy (Argemone ochroleuca)</i> <i>Mintweed (Salvia reflexa)</i> <i>New Zealand Spinach (Tetragonia tetragonoides)</i> <i>Noogoora burr (Xanthium pungens)</i> <i>Saffron thistle (Carthamus lanatus)</i> <i>Sow Thistle (Sonchus oleraceus)</i> <i>Sorghum (Volunteer)</i> <i>Spear thistle (Cirsium vulgare)</i> <i>Spurge (Euphorbia spp)</i> <i>Sunflower (Volunteer) (Helianthus annuus)</i> <i>Turnip weed (Rapistrum rugosum)</i> <i>Variegated thistle (Silybum marianum)</i> <i>Wild Lettuce (Lactuca serriola)</i> <i>Wild Oats (Avena spp)</i> <i>Wild turnip (Brassica tournefortii)</i>	Rate (L/ha) 800mL-1.2L 400mL-800mL 800mL-1.2L 400mL-800mL 800mL-1.2L 800mL-1.2L 800mL-1.2L 400mL-800mL 800mL-1.2L 400mL-1.2L 800mL-1.2L	Critical Comments After elongation or budding, use the higher rate. ALL WEEDS: Spray when weeds are actively growing. Ensure regrowth is 6-8cm in height if intensive grazing occurred prior to spray time. DO NOT spray weeds under stress from low moisture, frost, cold, disease or waterlogging. Note that Barnyard Grass and Liverseed Grass are particularly prone to moisture stress. RATE SELECTION: Use lower rate on young weeds. Increase to higher rates as grasses gain full tillering or as broadleaf weeds gain elongation/budding. At more advanced stages, some broadleaf weeds need a higher rate range or addition of 2,4-D. TANK MIXTURES: Read label directions, restraints, plant back and withholding periods and safety directions. See section entitled "Compatibility" in this booklet. CROP ESTABLISHMENT: Sowing should not proceed until conditions allow the formation of a satisfactory seed bed. ALL WEEDS – AERIAL APPLICATION: See section entitled "For Aerial Equipment" of this booklet for instructions for use in high temperatures and dry conditions. DO NOT apply this product when temperatures exceed 30°C. After stem elongation or budding, use higher rate After stem elongation or budding, use higher rate After stem elongation or budding, use higher rate After stem elongation or budding, use higher rate

N.B. Refer to section entitled "For Aerial Equipment" in this booklet if aerial application is to be used. Do not apply this product from the air if temperatures exceed 30°C

Pasture Renovation

Situation	State	Application Rate	Critical Comments
A high predominance of Poa Tussock (<i>Poa labillardieri</i>) associated with annual weed situations	Qld, NSW, Vic, Tas only	2.4L/ha – 3.2 L/ha	<p>TIMING: Graze heavily, then remove stock at least 2 weeks before spraying to allow new growth. Apply to actively growing plants after the autumn break but before heavy frosts (March-May).</p> <p>APPLICATION: Increasing to the high rate levels may give more effective reductions. If using Aerial Equipment, refer to relevant section of this booklet.</p> <p>FOLLOW-UP MANAGEMENT: Sowing may start from 2 weeks after spraying. It is essential that correct follow-up pasture establishment and management occurs after treatment. Spot treatment will limit re-infestation.</p>
A high predominance of Bent Grass (<i>Agrostis tenuis</i>) associated with Annual weeds.	Vic, Tas only	2L/ha	<p>This rate will give control/suppression prior to planting improved pasture or crops. Spray in late spring when weeds are in active growth phase and have a degree of seed head development. Remove stock to ensure full leaf growth.</p> <p>2-3 weeks after spraying use a tyned implement to disturb the soil and break up vegetative matter.</p> <p>Follow up by planting a summer crop and/or re-seeding pasture or crop next autumn.</p>

Pasture Topping

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Pasture topping to reduce seed set of Annual grasses and Capeweed (<i>Arctotheca calendula</i>)	NSW, VIC, SA & WA only	Annual ryegrass (<i>Lolium rigidum</i>)	360mL/ha	Apply at flowering stage and prior to plants "haying off"
		Barley Grass (<i>Hordeum leporinum</i>)	240mL/ha – 360mL/ha	Apply at the head to milky dough stage.
		Brome Grass (<i>Bromus</i> spp)		
		Capeweed (<i>Arctotheca calendula</i>)		Apply at flowering stage and prior to plants "haying off"
		Silver Grass (<i>Vulpia</i> spp.)		Apply at the head to milky dough stage.
			ALL WEEDS: Ensure even regrowth by removing all stock prior to treatment. If pasture legumes are present their populations may be reduced. DO NOT apply if clover or medic crops, intended for seed are present. Water volumes of 50L/ha or less are preferable. If excess of this is required, add wetting agent at label rates.	

Pasture Manipulation

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Where certain pasture species need to be controlled or suppressed prior to the drilling of forage species or soybeans	NSW, Vic, WA only	Carpet Grass (<i>Xonopus</i> spp)	1.1L/ha – 4.8L/ha	Use higher rates for control. Use lower rates for suppression
		Kikuyu Grass (<i>Pennisetum clandestinum</i>)		
		Paspalum (<i>Paspalum dilatatum</i>)		
	Qld only	Carpet Grass (<i>Xonopus</i> spp)		
		Kikuyu Grass (<i>Pennisetum clandestinum</i>)	500mL/ha – 4.8L/ha	
	Paspalum (<i>Paspalum dilatatum</i>)	1.1L/ha – 4.8L/ha		

Rice (direct drilling)

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Sites where direct drilling of rice is to be carried out and site sprayed prior to direct drilling.	NSW only	Annual Phalaris (Canary Grass) (<i>Phalaris spp</i>)	800mL/ha – 1L/ha	<p>ALL WEEDS</p> <p>Site preparation should ensure that if grazing has taken place regrowth should be 6-8 cm tall before spraying. If drought conditions are present, a pre-watering prior to spraying is recommended. If Ryegrass is present, use a wetting agent at recommended rates.</p> <p>WHEN TO SOW:</p> <p>Direct drilling can be carried out 1 day to 2 weeks after spraying. If a residual herbicide is to be used, refer to product's label instructions on mixtures and Rice application.</p>
		Annual Ryegrass (<i>Lolium rigidum</i>)		
		Barley Grass (<i>Hordeum leporinum</i>)		
		Burr Medic (<i>Medicago spp</i>)		
		Clover (sub) (<i>Trifolium subterraneum</i>)		
		Winter Grass (<i>Poa annua</i>)		

Sugar Cane (Ratoon control)

Situation	State	Variety	Application Rates	Critical Comments
Sites where control of ratoon cane is required	Qld only	Q63, Q87, Q90, Q102, Q117, Q120, Q129, Q130, H56 – 752, Pindar, Triton	2.4L/ha – 3.2L/ha	<p>ALL VARIETIES:</p> <p>Spray only if ratoons are in active phase and are 60 – 100 cm in height</p> <p>DO NOT apply if plants are drought stressed or suffering effects of waterlogging.</p> <p>Ensure boom is at height above the ratoon canopy that allows the correct overlap of the spray pattern. Use higher rates for control. Use lower rates for suppression if it is planned to follow up with a cultivation.</p>
		Q86, Q96, Q113	3.2L/ha – 4L/ha	
		Q115, Q122,, Q94, Cassius	4 L/ha – 4.8L/ha	
		NCQ 310, Q107	4.8L/ha – 7.2L/ha	

Vines and Tree Crops

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Nuts (includes Almond, Pistachio, Macadamia, pecan and Walnut), Pome Fruit, Litchi, Stone Fruit, Vineyards and Citrus Fruit	All States	See specific weed tables in this booklet	See specific weed tables in this booklet for application rates	<p>ALL TREES AND VINES: DO NOT spray near trees/vines less than 3 years old. DO NOT allow Wiper contact.</p> <p>AVOCADO, BANANA, GUAVA, KIWIFRUIT, LITCHI, MANGO, PAW PAW AND STONE FRUIT: Spray drift can cause damage if allowed to contact any part of the vine palm, trunk or tree. Be careful to avoid contact with split bark on Kiwifruit and green Stems on Paw Paw.</p> <p>CITRUS, LITCHI, OLIVES, POME FRUIT, NUTS AND VINEYARDS DO NOT allow spray to contact any part of the plant.</p>
Avocado, Guava, Kiwifruit, Mango and Paw Paw	Qld, NSW only			
Bananas	Qld, NSW, WA only			

General Uses

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Dry drains and channels, dry margins of dams, lakes and streams	All States	For Weeds Controlled refer to list of species under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this booklet.	For Application rates refer to rates shown under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this booklet.	DO NOT apply to weeds growing in or over water. DO NOT spray across open bodies of water and DO NOT allow spray to enter water. DO NOT allow water to return to dry channels and drains within 4 days of application.
Forestry and Forestry plantations				USE SITUATIONS INCLUDE: <ul style="list-style-type: none"> • PRIOR TO NURSERY ESTABLISHMENT • SITE PREPARATION PRIOR TO PLANTING • IN ESTABLISHED TREE AREAS using shielded or directed sprays or selective wiper equipment DO NOT allow spray or spray drift to come into contact with foliage or green bark of desirable trees as severe damage may occur. DO NOT allow wiper surface to come into contact with ANY PART of the tree.
Rights of way, domestic and public service areas, commercial and industrial areas and around buildings.				This product does not provide residual control.
Radiata Pine plantations Pre- planting or holding sprays				Blackberry (<i>Rubus</i> spp.)

Onions

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Post-planting or pre-emergent application	Tas only	For Weeds Controlled refer to list of species under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this booklet	800mL/ha - 2.4L/ha	Ensure that spraying is carried out well in advance of emergence of onion shoots (7 days). Otherwise severe phytotoxicity will occur if onion plant comes into contact with herbicide. Take into consideration height and type of weeds present in determining the exact rate. For small annual weeds use lower rate levels and for large annual weeds (as a guide greater than 15 cm in height) and where perennial weeds are present, use the higher rates.

Pasture Situations

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Where boom applications are used in pasture control prior to re-seeding of improved pasture crop.	All States	For Weeds Controlled refer to list of species under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this booklet	For Application rates refer to rates shown under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this booklet.	See Protection of Livestock, Wiper Equipment and Conservation Tillage sections of this label.

Row Crops (Cotton, Peanuts, Soybeans, Sugar Cane)

Situation	State	Weeds Controlled	Application Rates	Critical Comments
Where Wiper equipment is used to control weeds in row crops.	Qld, NSW only	For Weeds Controlled refer to list of species under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this booklet	800mL in 2L water	See section entitled "For Wiper Equipment" on page 5 of this booklet Apply to weeds growing 15cm above the crop canopy or weeds growing between rows. DO NOT allow the product to come into direct contact with crops or solution to drip onto crops.

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