RLP
APPROVED

Product Name: OZCROP GLYPHOSATE XTRAQATIC 450 HERBICIDE
APVMA Approval No: 64091/126236

Label Name:	OZCROP GLYPHOSATE XTRAQATIC 450 HERBICIDE

Signal Headings:	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Constituent Statements:	450 g/L GLYPHOSATE PRESENT AS THE ISOPROPYLAMINE SALT

Mode of Action:	GROUP M HERBICIDE

Statement of Claims:	Glyphosate Xtraquatic 450 Herbicide is a non-residual non selective herbicide for the control of a broad range of Annual and Perennial Weeds as specified in the Directions for Use Table.

Net Contents:	1000L 100-120L 20L 5L 1L

Restraints:	DO NOT disturb traced weeds by cultivation, sowing or grazing for 1 day after treatment of annual weeds and 7 days for perennial weeds. DO NOT treat weeds under poor growing conditions or dormant conditions as occur in drought, water logging, 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.

Directions for Use:	This section contains file attachment.

Other Limitations:	

Withholding Periods:	NOT REQUIRED WHEN USED AS DIRECTED.

Trade Advice:	

General Instructions:	This section contains file attachment.

Resistance Warning:	GROUP M HERBICIDE Ozcrop Glyphosate Xtraqatic 450 Herbicide is a member of the glycine group of herbicides. Ozcrop Glyphosate Xtraqatic 450 Herbicide has the inhibition of EPSP syntheses mode of action. For weed resistance management Ozcrop Glyphosate Xtraqatic 450 Herbicide is a Group M Herbicide. Some naturally occurring weed biotypes resistant to Ozcrop Glyphosate Xtraqatic 450 Herbicide and other Group M Herbicides may exist through normal genetic variability in any weed population. These resistant weeds will not be controlled by Ozcrop Glyphosate Xtraqatic 450 Herbicide or other Group M Herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, OzCrop Pty Ltd accepts no liability for any losses that may result from the failure of Ozcrop Glyphosate Xtraqatic 450 Herbicide to control resistant weeds.

Precautions:	

Protections:	PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS DO NOT apply under weather conditions or from spraying equipment that may cause spray to drift onto nearby susceptible plants/crops, cropping-lands or pastures. PROTECTION OF WILDLIFE, FISH, CRUSTACEA AND ENVIRONMENT DO NOT contaminate dams, rivers or streams with the product or used containers. When controlling weeds near water, refer to label directions to minimise the entry of spray into the water. 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 of 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.

Storage and Disposal:	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, lit cigarette etc. 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 rinsing to spray tank . DO NOT dispose of undiluted chemicals on site.

	If recycling, replace cap and return clean containers to recycler or a 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 500mm 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. For refillable containers, empty contents fully into applications equipment. Close all valves and return to point of supply for refill or storage.

Safety Directions:	Product will irritate the eyes and skin. Avoid contact with eyes and skin. When preparing product for use wear elbow-length PVC gloves and face shield or goggles. When using controlled droplet applicator wear protective waterproof clothing and impervious footwear. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with sop and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

First Aid Instructions:	If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26, New Zealand 0800 764 766.

First Aid Warnings:	

GENERAL INSTRUCTIONS

Product Description

OzCrop Glyphosate Xtraqatic 450 Herbicide 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 weeds 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 spaying of annual species and 2-3 weeks after spaying perennial species The symptoms are demonstrated by a yellowing and accompanying wilting, progressing to brown-out.

SAFETY TO CROPS

DO NOT allow the product to come into 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 (150 micron or less) when calibrating.
3. Avoid spraying in winds greater than 8 km/hr, 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 as crop establishment may be retarded.

Spray Preparation

1. Make sure the spray tank is clean and residues from previous usage have been removed.
2. Half fill the spray 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 required amount of Glyphosate Xtraqatic 450 as per the Direction for Use table.
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.

Note: DO NOT use mechanical agitators, as they cause excessive foaming. DO NOT add non-approved herbicides and insecticides.

Note: Use only plastic or plastic lined, stainless steel, aluminium, copper, brass or fibreglass tanks. Galvanised steel or unlined steel spray tanks can react with the product to form 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 low. Suggested surfactant rates are 200 mL/100 L of 1000 g/L non-ionic surfactant or 250-500 mL of 700 g/L surfactant.

DO NOT add any other agricultural chemicals, spraying oils or other materials except as directed on the label.

RAINFALL EFFECTS

Rain within 1 hour 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 effectiveness.

Lack of rain, i.e. drought conditions, is not time to spray, as vegetation will not be receptive to uptaking chemical. Likewise, in waterlogged conditions or after frost similar comments apply.

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 Glyphosate Xtraqatic 450:

- 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 plant 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 the 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 droplet size of 250-350 micron diameter 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.

For Aerial Equipment – continued

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 affected 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 slopping terrain height above the ground may vary from point-to-point, and 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 a minimum of 300-micron average size.

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 volumes to at least 30 litres/ha and average droplet size to 300 micron if temperatures are in excess of 25ºC.

DO NOT spray if temperature is above 30ºC. Use recommended rates specified on this label up to a maximum limit of 3.2 L/ha.

For Wiper Equipment

Such as Ropewick applicators etc detailed information should be obtained from the manufacturers. As a general guide 800 mL of product should be mixed with 2 litres of water. Weeds should ideally be 5 cm 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 minimizing antagonism when mixed with flowable Triazine herbicides. The only form of ammonium sulphate to be used is the crystalline form, not prilled or granular forms. Test the quality by dissolving 2 tablespoons in 2 litres of water. Swirl gently for 2 minutes. Should undissolved particles 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, 2,4-D Amine 625, Express*, Garlon*, chlorsulfuron, metsulfuron, Yield*, Stomp*, Logran*, LVE MCPA, Trifluralin 480 Herbicide, Simazine Flowable Herbicide, Simazine WDG Herbicide, Hammer* Herbicide, 2,4D Dimethyl/Diethanoamine 475, 2,4-D Isopropylamine 300, Goal* CT.

Goal CT – The addition Goal CT at 75 mL/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 Flowright* Compatibility agent to improve the compatibility in cold water (less than 15ºC). See directions below.

COMPATIBILITY – ***continued***

Insecticides: chlorpyrifos, dimethoate, fenitrothion, Gusathion*, Imidan* (phosmet), Lemat* (omethoate), Lorsban*, metasystox, Sumithion*, Perfekthion* EC 400.

Flowright compatibility agent

Rate: 200 L/100 L spray solution.

When mixing with Goal CT, add to improve the compatibility in cold water (less than 15ºC). Flowright must be pre-mixed with Goal CT before adding to the spray tank. Refer to Flowright label for directions.

DIRECTIONS FOR USE

ANNUAL WEED CONTROL - ALL STATES

WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
Amaranth (*Amaranthus* spp.) Barley Grass (*Hordeum leporinum*) Barnyard Grass (*Echinochloa* spp.) Brome Grass (*Bromus* spp.) Caltrop (*Tribulus terrestris*) Canary Grass (*Phalaris* spp.) Capeweed (*Arctotheca calendula*) Cereals Volunteer (Barley, Wheat, Oats, Sorghum) Chickweed (*Stellaria media*) Cobbler's Peg (*Bidens pilosa*) Deadnettle (*Lamium amplexicaule*) Doublegee (*Emex australis*) Fumitory (*Fumaria officinalis*, *F. muralis*) Ground Cherry (*Physalis angulata*) Lesser Swinecress (*Coronopus didymus*) Liverseed Grass (*Urochloa panicoides*) Mintweed (*Salvia reflexa*) Paradoxa Grass (*Phalaris paradoxa*) Paterson's Curse (Salvation Jane) (*Echium plantagineum*) Pigweed (*Portulaca oleracea*) Potato Weed (*Galinsoga parviflora*) Ryegrass Annual (*Lolium rigidum*) Saffron Thistle (*Carthamus lanatus*) Silver Grass (*Vulpia* spp.) Sow Thistle (*Sonchus oleraceus*) Spear Thistle (*Cirsium vulgare*) Spiny Burrgrass (*Cenchrus* spp.) Spurge (*Euphorbia* spp.) Sub Clover (*Trifolium subterraneum*) Thornapple (*Datura* spp.) Wild Mustard (*Sisymbrium officinale*) Wild Oats (*Avena* spp.) Wild Turnip (*Brassica tournefortii*) Winter Grass (*Poa annua*) Variegated Thistle (*Silybum marianum*)	**Boom:** 1.5-2.4 L/ha **Handgun:** 400-560 mL per 100 L of water **Knapsack:** 60-80 mL per 15 L of water	**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. 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. Use Glyphosate Xtraqatic 450 at rates indicated in the adjacent column. The effects of the product may take 3-7 days to appear under normal conditions and up to 20-30 days in cool conditions.

PERENNIAL WEED CONTROL

WEEDS CONTROLLED	STATE	APPLICATION RATES			CRITICAL COMMENTS
		Boom spray L/ha	Knapsack mL/15 L	Handgun vol/100 L	
Bent Grass (*Agrostis tenuis*)	Vic, Tas only	2	60	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 re-seeding pasture or crop the following Autumn.
Blady Grass (*Imperata cylindrica*)	Qld, NSW, ACT only	7.2	160	1 L	Spray at head stage while plants are in active growth stage.
Carpet Grass (*Axonopus* spp.)	All States	2.4	60	400 mL	Spray at early head stage while in active growth stage.
Cocksfoot (*Dactylis glomerata*)	All States	2.4	80	560 mL	Spray at early head stage while in active growth stage.
Couch (*Cynodon dactylon*)	All States	7.2	160	1 L	Spray at early head stage (late Spring).
Flatweed (Cat's Ear) (*Hypochaeris radicata*)	All States	2.4	80	560 mL	Spray at early flowering to fully developed rosettes.
Guinea Grass (*Panicum maximum*)	All States	7.2	160	1 L	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 (*Cardaria draba*)	NSW, ACT, Vic, Tas only	1.2	60	400 mL	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 this situation.
Johnson Grass (*Sorghum halepense*)	All States	4.8	120	800 mL	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 (*Themeda australis*)	All States	4.8	120	800 mL	Spray at early head stage when plants are actively growing.
Kikuyu Grass (*Pennisetum clandestinum*)	All States	4.8	120	800 mL	Spray at early head stage when plants are actively growing.
Nutgrass (*Cyperus rotundus*)	All States	4.8	120	800 mL	Non-cultivated situations.Apply to actively growing plants in February - April.
		2.4 followed by 2.4	80 followed by 80	560 mL followed by 560 mL	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.
Paspalum (*Paspalum dilatatum*)	All States	4.8	120	800 mL	Spray at early head stage when plants are in active growth.
Phalaris (*Phalaris aquatica*)	NSW, ACT, Vic, SA only	2.4-4.8	60-120	400 mL to 1 L	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.
Plantains (*Plantago* spp.)	All States	2.4	80	560 mL	Spray when plants have reached the early head stage. Bear in mind that Plantains are slow to develop toxicity symptoms.
Prairie Grass (*Bromus unioloides*)	All States	4.8	120	800 mL	Spray at early head stage while plants are in active growth phase.
Qld Blue Grass (*Dichanthium sericium*)	All States	4.8	120	800 mL	Spray at early head stage while plants are in active growth phase.
Redleg Grass (*Bothriochloa macra*)	All States	4.8	120	800 mL	Spray at early head stage while plants are in active growth phase.
Rhodes Grass (*Chloris gayana*)	All States	4.8	120	800 mL	Spray at early head stage while plants are in active growth phase.
Rope Twitch (*Agropyron repens*)	Vic, Tas only	4.8	120	800 mL	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 20 cm in height). Ensure drought stress conditions do not exist at time of spraying.
Silverleaf Nightshade (*Solanum elaegnifolium*)	NSW, ACT only	–	240	1.6 L	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 (*Rumex acetosella*)	All States	4.8	120	800 mL	Spray at bud stage so long as plants are in an active growth phase. See also "Conservation Tillage" section of this booklet.

PERENNIAL WEED CONTROL – ***continued***

WEEDS CONTROLLED	STATE	APPLICATION RATES			CRITICAL COMMENTS
		Boom spray L/ha	Knapsack mL/15 L	Handgun vol/100 L	
Soursob (*Oxalis pes-caprae*)	NSW, ACT, Vic, Tas, SA, WA only	1.2	60	400 mL	Best results can be obtained by late Winter/early Spring sprays. Ensure foliage is in a healthy, actively growing stage at time of spraying. See also "Conservation Tillage" section of this booklet.
St John's Wort (*Hypericum perforatum*)	All States	2.4	60	400 mL	Spray at the flowering to post-flowering stage in Summer/Autumn period. As spraying is only part of the total management concept of pasture improvement, follow-up sprays may be needed.
Thistle Artichoke (*Cynara cardunculus*)	Vic, SA only	2.4	60	400 mL	Spray when plants have reached rosette/early-heading stage. Plants should be free of soil deposits, particularly when spraying along roadsides.
Thistle Californian (*Cirsium arvense*)	Vic, Tas only	4.8	120	800 mL	Spray at the flowering stage, As spraying is only part of the total management concept of pasture improvement, follow-up sprays may be needed.
Yorkshire Fog (*Holcus lanatus*)	All States	2.4	80	560 mL	Spray when plants have reached the early heading stage and are in an active growth phase.

BRUSH AND WOODY WEEDS

WEEDS CONTROLLED	STATE	HANDGUN VOL/100 L	KNAPSACK ML/15 L	CRITICAL COMMENTS
Bitou Bush/Boneseed (*Chrysanthemoides monilifera*)	NSW, ACT, Qld, Vic, Tas only	400 mL or 800 mL	60 mL or 120 mL	Apply to actively growing plants. DO NOT treat plants which are stressed, particularly drought stressed. Spray to wet all foliage. Best results are achieved when treated during the winter at peak flowering time. Use the higher rate on larger bushes. Follow-up treatment may be required to prevent the establishment of germinating weeds.
Blackberry (*Rubus fruticosus*)	All States	800 mL or 1 L	120 mL or 150 mL	Apply from January to May (flowering to leaf fall). Spray plants which are not under stress to thoroughly wet all foliage. Use the Higher Rate for dense, old stands over 2 m high. Further treatment may be needed to control seedlings and regrowth. Symptoms may be slow to appear and may not be apparent until next season. Tas only: DO NOT spray bushes bearing mature fruit.
Box Thorn (*Lycium ferocissium*)	All States	600 mL or 800mL	80 mL or 120 mL	Spray to wet all foliage. Use the lower Rate for young bushes and the Higher Rate for bigger mature bushes. DO NOT spray if conditions are hot and dry. Regrowth and seedling germination may have to be retreated.
Crofton Weed (*Eupatorium adenophorum*)	Qld, NSW, ACT only	400 mL	60 mL	Apply to plants with full foliage which are actively growing. Spray to wet all foliage. Seedling germination may have to be retreated.
Groundsel Bush (*Baccharis halimifolia*)	Qld, NSW, ACT only	600 mL or 800mL	80 mL or 120mL	Apply to actively growing plants using the higher rate for plants over 2 m tall. DO NOT spray during Summer drought stress conditions or in winter. Spray to wet all foliage. Seedling germination may have to be re-treated.
Hawthorn (*Crataegus* spp.)	NSW, ACT, Vic, Tas, SA, WA only	800 mL - 1 L	120 - 150 mL	Spray from flowering to leaf fall when plants are actively growing. Use the higher rate for plants over 2 m tall. Spray to thoroughly wet all foliage. Seedling regrowth may have to be retreated.
Lantana (*Lantana camara*)	Qld, NSW, ACT only	800 mL	120 mL	Apply to plants with full foliage which are actively growing. Spray to thoroughly wet all foliage and individual plants. Seedling regrowth may have to be retreated.
Mistflower (*Eupatorium riparium*)	Qld, NSW, ACT only	400 mL	60 mL	Apply to plants with full foliage which are actively growing. Spray to thoroughly wet all foliage. Seedling regrowth may have to be retreated.
Sifton Bush/ Chinese Scrub (*Cassinia arcutata*)	Qld, NSW, ACT only	800 mL - 1 L	120 - 150 mL	Apply to actively growing plants ensuring complete coverage. Seedling regrowth may have to be retreated. For high volume application use the higher rate when bushes are over 1 m. For Wiper application a double pass application is required. Best results are achieved if bushes are less than 1 m tall and are green at time of application.
Sweet Briar (*Rosa rubiginosa*)	NSW, ACT, Vic, Tas, SA, WA only	1.1 L or 1.5 L	180 mL or 240 mL	Apply from late flowering to leaf fall to actively growing plants. Spray to thoroughly wet all foliage. Use the Higher Rate for bushes over 1.5 m tall. Seedling regrowth may have to be retreated.

AQUATIC WEED CONTROL

Reduction in effectiveness may result if more than 1/4 of the aboveground portion of the weed is submerged at treatment. Submerging the treated plants following treatment may result in the spray being washed from the plant surface, thus reducing effectiveness.

DO NOT apply this product within 0.5 km of potable water intake in flowing water (eg, river or steam), or within 0.5 km of a portable water intake in a standing body of water such as a lake, pond or reservoir.

Applications to moving bodies of water should be made while travelling upstream whenever possible to prevent concentration of this herbicide in water. When making bankside application, DO NOT overspray more than 0.5 m into open water.

Avoid spraying across moving bodies of water where weeds do not exist.

DO NOT ADD EXTRA SURFACTANT/WETTER, UNLESS IT IS APPROVED IN AQUATIC SITUATIONS.

When spraying floating weeds, use a low volume, low pressure boom sprayer or sprinkler sprayer.

DO NOT submerge weeds when spraying as this may wash herbicide off the leaves. When emerged infestations require treatment of the total surface area of impounded water, treating the area in strips may avoid sudden impact on habitat.

WEEDS CONTROLLED	STATE	APPLICATION RATES			CRITICAL COMMENTS
		Boom spray L/ha	Knapsack mL/15 L	Handgun vol/100 L	
Alligator Weed	All States	4.8	160	1 L	Apply when actively growing, from Summer through Winter. Floating form only.
Brown Beetle Grass	NSW, ACT only	2.4	160	1 L	Apply to active growing plants. DO NOT apply to partially submerged plants.
Cumbungi (*Typha* spp.)	All States	7.2	160	1 L	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.
Glyceria (*Glyceria maxima*)	Tas only	4.8	120	800 mL	Spray at fully headed stage in late Summer/Autumn.
Paragrass (*Brachiara mutica*)	All States	7.2	160	1 L	Spray at early head stage when plants are in active growth.
Phragmites Common Reed (*Phragmites australis*)	All States	7.2	160	1 L	If the Wiper technique is to be used, refer to "Wiper Equipment" section of 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.
Rushes (*Juncus* 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.
Sedge – Tall (*Cyperus gracilis*)	NSW, Vic, Tas, 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.
Water Couch (*Paspalum distichum*)	All States	7.2	160	1 L	Spray actively growing plants in February/March period.
Water Hyacinth	All States	4.8 to 7.2	125 to 160	800 to 1 L	Apply when actively growing and at or beyond the early bloom stage of growth. Use the higher rate on dense infestations.
Water Lettuce	All States	–	125 to 160	800 to 1 L	Best results are obtained from mid-summer through to Winter. Use the high rate on dense infestations.
Waterlily, Yellow	All States	4.8	125	–	Apply when there is a maximum emergence of floating leaves. Allow 2-3 weeks for symptoms, then retreat any unaffected plants. Use low volume sprayer.

CONSERVATION TILLAGE SITUATIONS
Includes directions for use for:

- Land Preparation Prior to Sowing (Winter crops, Summer crops, fallow)
- Pasture Renovation
- Pasture Topping
- Pasture Manipulation
- Rice (Direct Drilling)
- Sugarcane (Ratoon control)

LAND PREPARATION PRIOR TO SOWING

SITUATION	STATE	WEEDS CONTROLLED	RATE Vol/ha	CRITICAL COMMENTS
SOUTHERN AUSTRALIA Where weed control is desired prior to sowing a pasture or crop and prior to disturbing the area with cultivation or tyned implements at sowing	NSW, ACT, Vic, SA, WA only	Amsinkia (*Amsinkia* spp.)	<12 cm diameter 800 mL-1 L >12 cm diameter 1-1.25 L	**ALL WEEDS** Spray when weeds are actively growing. Ensure regrowth is 6-8 cm in height if intense grazing occurred prior to spray time. Use higher rate if intensive grazing occurred prior to spraying OR if sparing is being carried out late in the season OR cold/overcast conditions are present at the time of spraying. **CULTIVATION OR SOWING** This may start 1-21 days after spraying and may proceed from 1 hour daylight after application to seedling annual weeds if a satisfactory seedbed can be created for crop germination and seedling establishment. If Dock, Phalaris, Skeleton Weed, Soursob or Sorrel are present do not cultivate or sow for at least 7 days after spraying. Product will normally only give knockdown reduction in plant numbers and seasonal suppression of these weeds. If cultivation does not occur within 21 days re-treatment may be necessary. **TANK MIXTURES** Refer to section entitled "Compatibility" of this booklet if it is planned to spray in conjunction with a herbicide for residual control, improved performance, or if you wish to use an insecticide. Read the label carefully for conditions of use.
		Annual Phalaris (*Phalaris paradoxa*)	800 mL-1.0 L pre-tillering 1.0 L-1.25L post-tillering	
		Annual Ryegrass (*Lolium rigidum*)		
		Barley Grass (*Hordeum leporinum*)	400-800 mL pre-tillering 800 mL-1.0 L post-tillering	
		Brome Grass (*Bromus* spp.)		
		Capeweed (*Arctotheca calendula*)	<8 cm diameter 400-800 mL >8 cm diameter 800 mL-1L	
		Cereals (Volunteer)	400-800 mL pre-tillering 800 mL-1L post-tillering	
		Dock Seedlings (*Rumex obtusifolius*)	800 mL-1.2 L	
		Doublegee (*Emex australis*)	<8 cm diameter 400-800 mL >8 cm diameter 800 mL-1L	
		Fumitory (*Fumaria officinalis*)	<12 cm diameter 800 mL-1 L >12 cm diameter 1-1.2 L	
		Lupins (volunteer) (*Lupins albus*)		
		Paterson's Curse/Salvation Jane (*Echium plantagineum*)		
		Perennial Phalaris (*Phalaris aquatica*)	1.2 L	
		Saffron Thistle (*Carthamus lanatus*)	<12 cm diameter 800 mL-1 L >12 cm diameter 1-1.2 L	
		Scotch Thistle (*Onopordum acanthium*)		
		Silver Grass (*Vulpia* spp.)	800 mL-1.0 L pre-tillering 1.0 L-1.25L post-tillering	
		Skeleton Weed (*Chandrilla juncea*)	1.2 L	Skeleton Weed: Spray only rosettes that have fully emerged (NSW only).
		Sorrel (*Rumex acetosella*)		**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 the surface may help. If using residual type pre-emergent herbicides, seek out label directions that advise of risks associated with crop emergence.
		Spear Thistle (*Cirium vulgare*)	<12 cm diameter 800 mL-1 L >12 cm diameter 1-1.2 L	
		Soursob (*Oxalis pes-caprae*)	1.2 L	
		Sub Clover (*Trifolium subterraneum*)		
		Variegated Thistle (*Silybum marianun*)	<12 cm diameter 800 mL-1 L >12 cm diameter 1-1.2 L	
	Tas only	Annual weeds	1.2 L	Surfactant is recommended to be added. Where White clover, Sorrel and Dock, are present, add 1 L/ha of dicamba (200 g/L) in accordance with recommendations on the dicamba label.
		Perennial weeds	2.4 L	
SOUTHERN AUSTRALIA Where weed control is desired prior to sowing a SUMMER CROP or prior to the preparation of a fallow	NSW, ACT, Vic, SA, WA only	Annual Ryegrass (*Lolium rigidum*)	1.2-1.6 L	**ALL WEEDS** Spray when weeds are actively growing. Ensure regrowth is 6-8 cm in height if intense grazing occurred prior to spraying. Add wetting agent to spray solutions at the recommended rate if Ryegrass is present. Use higher rates under the 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 3 weeks. **TANK MIXTURES** Refer to section entitled "Compatibility" in this booklet if it is planned to spray in conjunction with a residual herbicide. Read the label carefully for conditions of use. **HOARY CRESS** Spray from late rosette to early flowering stage. **SOURSOB** Spray at tuber exhaustion.
		Barley Grass (*Hordeum leporinum*)	800 mL-1.2 L	
		Brome Grass (*Bromus* spp.)	1.2-1.6 L	
		Capeweed (*Arctotheca calendula*)		
		Cereals (Volunteer)	800 mL-1.2 L	
		Hoary Cress (*Cardaria draba*)	1.2 L	
		Paterson's Curse/Salvation Jane (*Echium plantagineum*)	1.2-1.6 L	
		Saffron Thistle (*Carthamus lanatus*)		
		Scotch Thistle (*Onopordum acanthium*)		
		Silver Grass (*Vulpia* spp.)		
		Spear Thistle (*Cirium vulgare*)		
		Soursob (*Oxalis pes-caprae*)	1.2 L	
		Wild Mustard (*Sisymbrium officinale*)	1.2-1.6 L	
		Wild Oats (*Avena* spp.)	800 mL-1.2 L	
		Wild Radish (*Raphanus raphanistrum*)	1.2-1.6 L	
		Wild Turnip (*Brassica tournefortii*)		
NORTHERN AUSTRALIA For weed control prior to sowing a Summer or Winter crop or in a fallow	Qld, NSW only	Annual Phalaris (*Phalaris*), Barley Grass (*Hordeum vulgare*), Volunteer Cereals, Wild Oats (*Avena fatua*)	400-800 mL	Use the Lower Rate on young weeds or where cultivation is to take place within 21 days. Use the Higher Rate where broadleaf weeds reach stem elongation/budding or where grasses are fully tillered. At more advanced stages certain broadleaf weeds may require the higher rate range or the addition of 2,4-D. In Winter (cold) conditions, symptoms on Deadnettle may be slow to develop. If weeds have been grazed heavily remove stock prior to spraying to ensure regrowth to 6-8 cm before treatment and use the higher rate. Liverseed Grass and Barnyard Grass may be very sensitive to moisture stress. Dense stands may require re-treatment. For aerial application see General Instructions. DO NOT apply by air if temperature is over 30°C. *Larger plants (>5 cm) of Noogoora Burr, Variegated Thistle and Volunteer Sunflower may require up to 1.3 L/ha to achieve control. **Crop Establishment:** Sowing should not proceed until conditions allow for formation of a satisfactory seedbed. See Crop Establishment for directions. Sowthistle: previously grazed plants may be difficult to control without allowing full recovery.
		Barnyard Grass (*Echinochloa crus-galli*), Liverseed Grass (*Urchloa* spp.), Lovegrass/Stink Grass (*Eragrostis curvula*), Sweet Summer Grass (*Brachiaria eruciformis*), Volunteer Sorghum (*Sorghum halepense*)	800 mL-1.6 L	
		Aust Bluebell (Qld only), (*Wahlenbergia gracilis*), Cudweed (*Gnaphalium luteo-album*), Fumitory (*Fumaria officinalis*), Mexican Poppy (*Argemone ochroleuca*), Mintweed (*Salvia reflexa*), New Zealand Spinach (*Tetragonia tetragonoides*), * Noogoora Burr (*Xanthium pungens*), Saffon Thistle (*Carthamus lanatus*), Spear Thistle (*Circium vulgare*), Spurge (*Euphorbia* spp.), * Variegated Thistle (*Silyburn marianum*), * Volunteer Sunflower, Yellowvine/Caltrop (*Tribulis terrestris*)	800 mL-1.1 L	
		Wireweed (*Polygonum aviculare*)	800 mL-1.1 L	
		Boggabri Weed (*Amaranthus macrocarpus*), Caltrop (*Tribulis terrestris*), Indian Hedge Mustard (*Sisymbrium orientale*), Mintweed (*Salvia reflexa*), Summer Grass (*Digitaria ciliaris*)	400-800 mL up to 3 cm in height or diameter or up to 5 true leaves OR 800 mL - 1.1 L greater than 3 cm in height or diameter or 5 true leaves	
		Annual Ground Cherry (*Physalis angulata*), Bladder Ketmia, Sowthistle (*Sonchus oleraceus*), Turnip Weed (*Rapistrum rugosum*), Wild Lettuce (*Lactuca saligna*), Wild Turnip (*Brassica tournefortii*)	800 mL - 1.1 L prior to stem elongation/budding OR 1.1 - 1.5L after stem elongation/budding	
	Qld, NSW, ACT only	Turnip Weed (*Rapistrum rugosum*)	800 mL-1.2 L	After elongation or budding, use the higher rate.
		Variegated Thistle (*Silybum marianun*)		
		Wild Lettuce (*Lactuca serriola*)		After elongation or budding, use the higher rate.
		Wild Oats (*Avena* spp.)	400 mL-1.2 L	
		Wild Turnip (*Brassica tournefortii*)	800 mL-1.2 L	After elongation or budding, use the higher rate.

Note: Refer to section entitled "For Aerial Equipment" in this booklet if aerial application is to be used. DO NOT apply this product when the temperature exceeds 30°C.

PASTURE RENOVATION

SITUATION	STATE	APPLICATION RATES	CRITICAL COMMENTS
A high predominance of Poa Tussock (*Poa labillardieri*) associated with annual weed situations	Qld, NSW, ACT, Vic, Tas only	2.4-3.2 L/ha	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). APPLICATION: Increase to the high rate levels may give more effective reductions. If using aerial Equipment, refer to relevant section of this booklet. 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.
A high predominance of Bent Grass (*Agrostis tenuis*) associated with annual weed situations	Vic, Tas only	2 L/ha	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 2-3 weeks after spraying use a tyned implement to disturb the soil and break up vegetative matter. Follow-up by planting a Summer crop and/or re-seeding pasture or crop next Autumn.

PASTURE TOPPING

SITUATION	STATE	WEEDS CONTROLLED	APPLICATION RATES	CRITICAL COMMENTS
Pasture topping to reduce seed set of Annual grasses and Capeweed (*Arctotheca calendua*)	NSW, ACT, Vic, SA, WA only	Annual Ryegrass (*Lolium rigidum*)	360 mL/ha	Apply at flowering stage and prior to plants 'haying off'.
		Barley Grass (*Hordeum leporinum*)	240-360 mL/ha	Apply at the head to milky dough stage.
		Brome Grass (*Bromus* spp.)		
		Capeweed (*Arctotheca calendula*)		Apply at flowering stage and prior to plants 'haying off'.
		Silver Grass (*Vulpia* 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 50 L/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, ACT, Vic, WA only	Carpet Grass (*Xonopus* spp.)	1.1-4.8 L/ha	Use higher rates for control. Use lower rates for suppression.
		Kikuyu Grass (*Pennisetum clandestinum*)		
		Paspalum (*Paspalum dilatatum*)		
	Qld only	Carpet Grass (*Xonopus* spp.)		
		Kikuyu Grass (*Pennisetum clandestinum*)	500 mL-4.8 L/ha	
		Paspalum (*Paspalum dilatatum*)	1.1-4.8 L/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) (*Phalaris* spp.)	800mL-1.0 L	**ALL WEEDS:** 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. **WHEN TO SOW:** Direct drilling can be carried out 1 day to 2 weeks after spraying. If a residual herbicide is to be used, refer to products label instructions on mixtures and rice application.
		Annual Ryegrass (*Lolium rigidum*)		
		Barley Grass (*Hordeum leporinum*)		
		Burr Medic (*Medicago* spp.)		
		Sub-clover (*Trifolium subterraneum*)		
		Winter Grass (*Poa annua*)		

SUGARCANE (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, Prindar, Triton	2.4-3.2 L/ha	**ALL VARIETIES:** Spray only if ratoons are in active phase and are 60-120 cm in height. DO NOT apply if plants are drought stressed or suffering effects of waterlogging. Ensure boom is at a height above the ratoon canopy that allows the correct overlap of the spray pattern. Use the higher rates for control. Use the lower rates for suppression if it is planned to follow up with cultivation.
		Q86, Q96, Q113	3.2-4.0 L/ha	
		Q115, Q122, Q94, Cassius	4.0-4.8 L/ha	
		NCQ310, Q107	4.8-7.2 L/ha	

SORGHUM CONTROL

SITUATION	STATE	WEEDS CONTROLLED	RATE L/ha	CRITICAL COMMENTS
Sorghum control before harvest	Qld, NSW, ACT only	Grain sorghum (*Sorghum bicolor*)	1.2 or 1.5 L	DO NOT apply to varieties intended for seed production or varieties prone to lodging. DO NOT apply to crop under stress from factors such as waterlogging, frost, disease, low moisture etc. Apply when grain moisture is less then 25%. The product can be applied when some browning has occurred. Use the Lower Rate for control of the crop, late tillers and ratoon regrowth. Use the Higher Rate for better suppression of ratoon regrowth. Treatment may increase potential for crop lodging especially if the crop has been stressed by low moisture. In this situation harvest as soon as possible after sufficient dry down to prevent further lodging. **Caution:** Sorghum may be naturally toxic to stock.
Sorghum control after harvest	Qld, NSW, ACT only	Sorghum stubble (Grain Sorghum) (*Sorghum bicolor*)	800 mL - 1.2 L for new regrowth from slashed stubble 1.4 - 1.8 L for standing green stubble 900 mL - 1.4 L for fresh Spring regrowth	DO NOT apply if plants are stressed from such factors as waterlogging, frost, disease, low moisture, etc. For slashed stubble and Spring regrowth apply when regrowth is at least 20 cm high. Standing Stubble - apply only if sufficient green leaf is present. Allow regrowth of at least 20 cm if grazing has occurred. Use the Lower Rate for knockdown and regrowth suppression where culitivation is to follow. Use the Higher Rate for better control of regrowth. It is important to note that variable results can occur if the crop has been under stress or grown under marginal conditions. The varieties Ruby, Trump, Nugget 2, Goldrush 2 and Prize are particularly susceptible if growing conditions are not ideal. **Caution:** Sorghum may be naturally toxic to stock.

VINE AND TREE CROPS

SITUATION	STATE	WEEDS CONTROLLED	APPLICATION RATES	CRITICAL COMMENTS
Avocado, Bananas, Blueberries, Citrus fruits, Custard Apple, Duboisia, Figs (Dessert), Guava, Kiwifruit, Litchi, Mango, Monstera, Nuts (Almond, Pecan, Macadamia, Pistachio, Walnut), Olives, Paw Paw, Persimmon, Pome Fruit, Stone Fruit, Raspberries, Tea, Vineyards.	All States	See specific weed tables in this booklet	See specific weed tables in this booklet for application rates	The product can be used as a shielded or directed spray, or using Wiper equipment. DO NOT apply near trees or vines less than 3 years old unless they are adequately protected from spray and spray drift. DO NOT allow spray or spray drift to contact bark, leaves, wounds or any other plant parts as severe injury may occur. Tea - Apply a maximum of 3.2 L/ha by a shielded spray or a directed off centre nozzle or 0.4 L/100 L by directed handgun or knapsack to avoid injury to the crop.

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				Use situations include: • 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			8 mL per litre of water	This product does not provide residual control.

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	800 mL-2.4 L/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 larger 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.	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 section "Protection of Livestock, Wiper Equipment and Conservation Tillage" in this booklet. Apply to weeds growing 15 cm 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.

ROW CROPS (COTTON, PEANUTS, SOYBEANS, SUGARCANE)

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	800 mL in 2 L water	See section entitled "For Wiper Equipment" in this booklet. Apply to weeds growing 15 cm 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 UNDER APPROPRIATE LEGISLATION.