

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

NAADCO
Glyphosate 450
Herbicide



ACTIVE CONSTITUENT: 450 g/L Glyphosate
present as the isopropylamine salt

GROUP M HERBICIDE

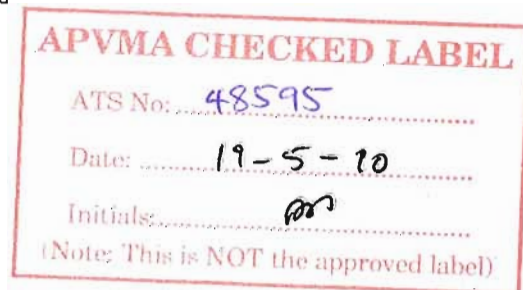


A non-residual herbicide
for the control of a broad range
of Annual, Perennial, Woody and Aquatic Weeds
and for the use in Conservation Tillage Situations
as per the Directions for Use Table

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

Contents: 1 L
[5L, 10 L, 20 L, 110 L, 200 L, 400 L, 1,000 L]

NAADCO
New Agricultural Development Company Pty Ltd
Level 13
99 Elizabeth St
Sydney NSW 2000
Tel: (02) 8090-8090
Fax: (02) 8090-8092
www.naadco.com.au



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.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT contaminate streams, rivers or waterways 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 for one day after spraying, and for perennial weeds 7 days. For certain plants known to be toxic to stock (eg, soursob, variegated thistle), 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, lighted cigarette etc.

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

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

For Refillable Containers: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

SAFETY DIRECTIONS

Product will irritate eyes and skin. Avoid contact with eyes and skin. When preparing the 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 soap and water. After each day's use, wash gloves and face shield or goggles and contaminated clothing.

FIRST AID

If poisoning occurs, contact a Doctor or Poisons Information Centre (Phone 13 11 26).

MATERIAL SAFETY DATA SHEET

For further information refer to Material Safety Data Sheet (MSDS) which can be obtained from NAADCO.

CONDITIONS OF SALE

NAADCO shall not be liable for any loss, injury, damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale, supply, use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on NAADCO's skill or judgment in

purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of NAADCO has any authority to add or to alter these conditions.

APVMA Approval No: / 64547 / 48595

Batch No:

Date of Manufacture:

NAADCO
New Agricultural Development Company Pty Ltd
Level 13
99 Elizabeth St
Sydney NSW 2000
Tel: (02) 8090-8090
Fax: (02) 8090-8092
www.naadco.com.au

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

NAADCO
Glyphosate 450
Herbicide

ACTIVE CONSTITUENT: 450 g/L Glyphosate
present as the isopropylamine salt

GROUP M HERBICIDE

A non-residual herbicide
for the control of a broad range
of Annual, Perennial, Woody and Aquatic Weeds
and for the use in Conservation Tillage Situations
as per the Directions for Use Table

READ COMPLETE DIRECTIONS FOR USE
BEFORE USING THIS PRODUCT

NAADCO
New Agricultural Development Company Pty Ltd
Level 13
99 Elizabeth St
Sydney NSW 2000
Tel: (02) 8090-8090
Fax: (02) 8090-8092
www.naadco.com.au

DIRECTIONS FOR USE:

RESTRAINTS:

DO NOT spray if rainfall is expected as rainfall within 6 hours of treatment may reduce the effectiveness of this product. Heavy rainfall within 2 hours of treatment may wash the product from the leaf surface and retreatment may be necessary.

DO NOT disturb treated weeds by grazing, cultivation, sowing, etc., after treatment for one day for annual weeds, and 7 days for perennial weeds to ensure complete uptake of the herbicide.

DO NOT treat weeds under stress from frost, cold, disease, waterlogging, lack of moisture or disease. Plants must be actively growing to ensure optimum uptake of the product.

ANNUAL WEED CONTROL – ALL STATES

Weeds Controlled	Rate	Critical Comments
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 (volunteer) 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>)	<p>Boom: 1.6-2.4 L/ha</p> <p>Handgun: 400-560 mL per 100 L of water</p> <p>Knapsack: 60-80 mL per 15 L of water</p> <p>Wiper Equipment - see Application Section of the label</p>	<p>All Weeds: Spray actively growing plants. Use the lower rate on weeds up to 15 cm tall; increase to the higher rate when weeds are over 15 cm tall.</p> <p>If residual activity is required, this product may be mixed with certain residual herbicides – see section titled 'Compatibility'.</p>

Weeds Controlled	Rate	Critical Comments
Liverseed grass (<i>Urochloa panicoides</i>) Mintweed (<i>Salvia reflexa</i>) Paradoxa grass (<i>Pharlaris 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 lanalus</i>) Silver grass (<i>Vulpia spp.</i>) Sow Thistle (<i>Sonchus oleraceus</i>) Spear Thistle (<i>Cirsium vulgare</i>) Spiny Burrgrass (<i>Cenchrus spp.</i>) Spurge (<i>Euphorbia spp.</i>) Sub Clover (<i>Trifolium subterraneum</i>) Thornapple (<i>Datura spp.</i>) Wild Mustard (<i>Sisymbrium officinale</i>) Wild Oats (<i>Avena spp.</i>) Wild Turnip (<i>Brassica tournefortii</i>) Winter grass (<i>Poa annua</i>) Variegated Thistle (<i>Silybum marianum</i>)		

PERENNIAL WEED CONTROL

Weeds Controlled	Rate			Critical Comments
	Boom L/ha	Knapsack mL/15 L	Handgun vol/100 L	
Bamboo (<i>Bambusa sp.</i>)	-	120 mL	800 mL	Apply to actively growing foliage and/or regrowth which is between 1 m and 2 m tall. Cut stump: Dilute 1:6 i.e. mix with 1 part of this product with 6 parts water. Cut stem back to 20 cm high, pour mixture down hollow stem or wet the cut.

Weeds Controlled	Rate			Critical Comments
	Boom L/ha	Knapsack mL/15 L	Handgun vol/100 L	
Bent Grass (<i>Agrostis tenuis</i>)	2 L	60 mL	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 tined 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>)	7.2 L	160 mL	1 L	Spray at head stage while plants are in active growth stage.
Bracken (<i>Pteridium esculentum</i>)	7.2 L	175 mL	1.2 L	For boom application always add an organosilicone penetrant (200 mL per 100 L spray) otherwise reduced results will occur. Addition of an organosilicone penetrant may also improve control with handgun application. Wiper equipment is recommended, see WIPER EQUIPMENT section of this label. Double pass applications required for ropewick equipment. Bracken should be slashed in Winter/Spring prior to treatment. Apply this product to fully unfurled actively growing fronds but prior to frosts. Visible symptoms may not be fully apparent until the next season. Complete control will not be achieved from one application. Repeat treatment is recommended, preferably associated with pasture improvement.
Carpet Grass (<i>Axonopus spp.</i>)	2.4 L	60 mL	400 mL	Spray at early head stage while in active growth stage.
Cocksfoot (<i>Dactylis glomerata</i>)	2.4 L	80 mL	560 mL	Spray at early head stage while in active growth stage.
Couch (<i>Cynodon dactylon</i>)	7.2 L	160 mL	1 L	Spray at early head stage (late Spring).
Flatweed (Cat's Ear) (<i>Hypchoeris radicata</i>)	2.4 L	80 mL	560 mL	Spray at early flowering stage to fully developed rosettes.
Glyceria (<i>Glyceria maxima</i>)	4.8 L	120 mL	800 mL	Apply to actively growing plants at mature head stage in late summer, autumn. Add a non-ionic surfactant (50-60% ai) at 200-250 mL/100 L. NOTE: Control of Glyceria

Weeds Controlled	Rate			Critical Comments
	Boom L/ha	Knapsack mL/15 L	Handgun vol/100 L	
				is only allowable in dry drains and channels and margins of dams, lakes and streams. 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 within 4 days of application.
Guinea Grass (<i>Panicum maximum</i>)	7.2 L	160 mL	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 (<i>Cardaria draba</i>)	1.2 L	60 mL	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 leaflet if this use technique can be applied to the situation.
Johnson Grass A (<i>Sorghum halepense</i>)	4.8 L	120 mL	800 mL	Spray at early head stage when plants are actively growing or refer to "Wiper Equipment" section of this leaflet if that application technique is to be used on Johnson Grass.
Kangaroo Grass (<i>Themeda australis</i>)	4.8 L	120 mL	800 mL	Spray at early head stage when plants are actively growing
Kikuyu Grass (<i>Pennisetum clandestinum</i>)	4.8 L	120 mL	800 mL	Spray at early head stage when plants are actively growing.
Lovegrass, African	4.8 L	120 mL	800 mL	Apply to actively growing plants. Re-treatment and/or pasture improvement is recommended to restrict seedling re-establishment.
<i>Ludwigia peruviana</i>	-	120 mL	750 mL	Apply when actively growing and at or beyond the early bloom stage of growth but before autumn colour changes occur. Thorough coverage is essential for best control.
Nutgrass (<i>Cyperus rotundus</i>)	4.8 L	120 mL	800 mL	Non-cultivated situations. Apply to actively growing plants in the late summer/ autumn (Feb/April) when at least 20% have reached the head stage.
Nutgrass (<i>Cyperus rotundus</i>)	2.4 L plus 2.4 L	80 mL plus 80 mL	560 mL plus 560 mL	If spraying is to be done on crop growing land, apply first spray in February which is about the time the 20%-25% of plants have reached heading stage. Then a second application is necessary about 2 months later which gives adequate time for full

Weeds Controlled	Rate			Critical Comments
	Boom L/ha	Knapsack mL/15 L	Handgun vol/100 L	
				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.
Pampas grass	-	120 - 150 mL	800 mL - 1 L	Apply to actively growing plants during Spring, Summer or Autumn. Ensure complete coverage of the foliage. For best results apply after flowering. For easier access, larger plant may be cut or burnt prior to spraying, but first allow regrowth to reach 1m. Use the high rate on plants over 1m high.
Paragrass	7.2 L	160 mL	1 L	Apply to actively growing plants at the early head stage.
Paspalum (<i>Paspalum dilatatum</i>)	4.8 L	120 mL	800 mL	Spray at early head stage when plants are in active growth.
Pellitory (<i>Parietaria judaica</i>)	-	120 mL	750 mL	Apply to actively growing plants prior to seeding. Repeat applications may be necessary to control seedlings and/or regrowth.
Phalaris (<i>Phalaris aquatica</i>)	2.4 L - 4.8 L	60 - 120 mL	400 mL - 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 (<i>Plantago spp.</i>)	2.4 L	80 mL	560 mL	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>)	4.8 L	120 mL	800 mL	Spray at early head stage of heading while plants are in active growth phase.
Qld Blue Grass (<i>Dichanthium sericium</i>)	4.8 L	120 mL	800 mL	Spray at early head stage of heading while plants are in active growth phase.
Red-Leg Grass (<i>Bothriochloa ambigua</i>)	4.8 L	120 mL	800 mL	Spray at early head stage of heading while plants are in active growth phase.
Rhodes Grass (<i>Chloris gayana</i>)	4.8 L	120 mL	800 mL	Spray at early head stage of heading while plants are in active growth phase.

Weeds Controlled	Rate			Critical Comments
	Boom L/ha	Knapsack mL/15 L	Handgun vol/100 L	
Rope Twitch (<i>Agropyron repens</i>)	4.8 L	120 mL	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 (<i>Solanum elaeagnifolium</i>)	-	240 mL	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 (<i>Rumex acetosella</i>)	4.8 L	120 mL	800 mL	Spray at bud stage so long as plants are in an active growth phase.
Soursob (<i>Oxalis pes-caprae</i>)	1.2 L	60 mL	400 mL	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 leaflet.
St John's Wort (<i>Hypericum perforatum</i>)	2.4 L	60 mL	400 mL	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>)	2.4 L	60 mL	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 (<i>Cirsium arvense</i>)	4.8 L	120 mL	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 (<i>Holcus lanatus</i>)	2.4 L	80 mL	560 mL	Spray when plants have reached the early heading stage and are in an active growth phase.

AQUATIC WEEDS

Weeds Controlled	Rate			Critical Comments
	Boom L/ha	Knapsack mL/15 L	Handgun vol/100 L	
				Reduction in effectiveness may result if more than ¼ 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 (e.g. river stream) or within 0.5 km of a potable 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 wherever possible to prevent concentration of this herbicide in water. When making bankside applications, 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, CDA 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.
Alligator Weed	-	120 mL	800 mL	Apply when actively growing, from Summer through Winter. Floating form only.
Brown Beetle Grass	2.4 L	60 mL	400 mL	Apply to actively growing plants. Do not apply to partially submerged plants.
Cumbungi (<i>Typha spp.</i>)	7.2 L	160 mL	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.
Paragrass (<i>Brachiara mutica</i>)	7.2 L	160 mL	1 L	Spray at early head stage when plants are in active growth.
Phragmites Common Reed	7.2 L	160 mL	1 L	If the Wiper technique is to be used, refer to "Wiper Equipment" section in this leaflet. Spray when plants are getting close to early head stage and actively growing. Spray symptoms may not be observed for a season or more.

Weeds Controlled	Rate			Critical Comments
	Boom L/ha	Knapsack mL/15 L	Handgun vol/100 L	
<i>(Phragmites australis)</i>				
Rushes <i>(Juncus spp.)</i> Sedge – Tall <i>(Cyperus gracilis)</i>	See Critical Comments			Use Wiper technique ensuring a high percentage of green matter is present. Refer to section of this leaflet entitled "Wiper Equipment" for directions for use.
Water Couch <i>(Paspalum distichum)</i>	7.2 L	160 mL	1 L	Spray actively growing plants in February/March period. 75% of plants should be visible above the water line at time of spraying.
Water Hyacinth	4.6 - 7.2 L	120 mL - 150 mL	800 mL - 1 L	Spray actively growing plants at or beyond the early bloom stage of growth. Use the higher rate on dense infestations.
Water Lettuce	-	120 - 150 mL	800 mL - 1 L	Best results are obtained from mid-Summer through to Winter. Use the higher rate on dense infestations.
Waterlily, Yellow	4.5 L	120 mL	800 mL	Apply when there is a maximum emergence of floating leaves. Allow 2-3 weeks for symptoms to develop, then re-treat any unaffected plants. Use low volume sprayer.

WOODY WEEDS AND BRUSH

Weeds Controlled	Handgun/ Knapsack Vol/l L	Critical Comments
Bitou Bush/Boneseed (<i>Chrysanthemoides monilifera</i>)	4 or 8 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 high rate on bushes over 1.5 m. Follow-up treatment may be required to prevent the establishment of germinating weeds.
Blackberry (<i>Rubus fruticosus</i>)	8 or 10 mL	Apply from January to May (flowering to leaf fall). Spray plants which are not under stress due to high temperatures, drought or frost. Spray 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. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. TAS ONLY – Do not spray bushes bearing mature fruit.
Box Thorn (<i>Lycium ferocissium</i>)	6 - 8 mL	Spray to wet all foliage. Use the Lower Rate for young bushes and Higher Rate for bigger mature bushes. DO NOT spray if conditions are hot and dry. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth.
Crofton Weed (<i>Eupatorium adenophorum</i>)	4 mL	Apply to plants with full foliage which are actively growing. Spray to wet all foliage. Further treatment and/or pasture improvement are recommended to restrict seedling re-establishment.
Gorse (Furze)	8 mL plus organosilicone penetrant 2 mL	May be applied at any time of year but plants must be actively growing. Always add an organosilicone penetrant to ensure good results. Spray to wet all foliage. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth.
Groundsel Bush (<i>Baccharis halimiflora</i>)	6 - 8 mL	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. Further treatment and/or pasture improvement are recommended to control seedlings and/or regrowth.

Weeds Controlled	Handgun/ Knapsack Vol/l L	Critical Comments
Hawthorn (<i>Crataegus spp.</i>)	8 - 10 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. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth.
Lantana (<i>Lantana camara</i>)	8 mL	Apply to plants with full foliage which are actively growing. Spray to thoroughly wet all foliage and individual plants. DO NOT spray during periods of Summer drought stress. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. The addition of an organosilicone penetrant (200 mL/100 L) may improve control.
Mistflower (<i>Eupatorium riparium</i>)	4 mL	Apply to plants with full foliage which are actively growing. Spray to thoroughly wet all foliage and thoroughly wet all foliage and individual plants. Further treatment and/or pasture improvement are recommended to restrict seedling re-establishment.
Sifton Bush/Chinese Scrub (<i>Cassubua arcutata</i>)	8 or 10 mL	Apply to actively growing plants ensuring complete coverage. Further treatment and/or pasture improvement are recommended to restrict seedling re-establishment and/or regrowth. 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 (<i>Rosa rubiginosa</i>)	12 - 16 mL	Apply from late flowering to leaf fall to actively growing plants. Spray thoroughly to wet all foliage. Use the higher rate for bushes over 1.5 m tall. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth.

DIRECTIONS FOR USE – CONSERVATION TILLAGE SITUATIONS

RESTRAINTS:

DO NOT spray if rainfall is expected within 6 hours of treatment may reduce the effectiveness of this product. Heavy rainfall within 2 hours of treatment may wash the product from the leaf surface and retreatment may be necessary.

DO NOT disturb treated weeds by grazing, cultivation, sowing, etc., after treatment for one day for annual weeds, and 7 days for perennial weeds to ensure complete uptake of the herbicide.

DO NOT treat weeds under stress from frost, cold, disease, waterlogging, lack of moisture or disease. Plants must be actively growing to ensure optimum effectiveness of the product.

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
SOUTHERN AUSTRALIA Before sowing a crop or pasture For weed control prior to sowing a crop or pasture with full soil disturbance by cultivation or sowing with a tyned implement	Barley Grass (<i>Hordeum leporinum</i>), Brome Grass (<i>Bromus unioloides</i>), Volunteer Cereals, Wild Oats (<i>Avena spp.</i>)	NSW, VIC, Southern WA, SA only	400 - 800 mL pre tillering 800 mL - 1 L post tillering	Treat only actively growing weeds not under stress from low moisture, frost, cold, disease or waterlogging. If heavy grazing has occurred, allow regrowth to 6-8 cm before spraying and use the higher rate. Rate Selection: Increase to high rates in the season or where treating under cold/overcast conditions. Full Disturbance: Using a cultivation or sowing with a tyned implement, full disturbance may start one day after treatment (7 days if dock, phalaris, skeleton weed, soursob or sorrel are present) and should occur within 21 days after treatment. Where cultivation or sowing does not occur within 21 days, new weed growth may require further treatment. When treating light infestations of seedling, annual grasses (pre tillering) and annual broadleaved weeds (less than 8 cm in height or diameter), cultivation or sowing may start 6 hours after treatment and should occur within 21 days.
	Annual Phalaris (<i>Phalaris canariensis</i>), Annual Ryegrass (<i>Lolium rigidum</i>), Silver Grass (<i>Vulpia spp.</i>), Winter Grass (<i>Poa annua</i>)		800 mL - 1 L pre tillering 1.0 - 1.2 L post tillering	
	Calomba Daisy (<i>Pentzia suffruticosa</i>), Capeweed (<i>Arctotheca calendula</i>), Spiny Emex/Doublegee (<i>Emex</i>)		400 - 800 mL less than 8 cm diameter 800 mL - 1.0 L	

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	<i>australis</i>)		greater than 8 cm diameter	<p>Crop Establishment: Sowing should not proceed until conditions allow the formation of a satisfactory seedbed. See Crop establishment for directions.</p> <p>Annual Ryegrass, Silvergrass, and Perennial Grasses: Addition of a suitable wetter may improve control. When treating dense infestations of silvergrass, use low volume nozzles (eg, SS 11001 or Hardi No. 10) and a spray volume of 70 L/ha or more is recommended to improve plant spray coverage.</p> <p>Tank Mixtures: For improved control of clover, add dicamba. Always read and follow all label directions, restraints, plant-back periods, Withholding Periods, regional use restrictions and Safety Directions for tank mix products. See tank mixtures for directions.</p> <p>Perennial Weeds: For perennial phalaris, soursob, skeleton weed and sorrel, this product will provide knockdown, seasonal suppression and restriction of treated plant numbers.</p>
	Amsinkia (<i>Amsinkia</i>), Fumitory (<i>Fumaria officinalis</i> , <i>F. muralis</i>), Paterson's Curse/Salvation Jane (<i>Echium plantaginium</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Scotch Thistle (<i>Onopordum acanthium</i>), Spear Thistle (<i>Cirsium vulgare</i>), Variegated Thistle (<i>Silybum marianum</i>), Volunteer Lupins (<i>Lupinus angustifolius</i>), Wild Turnip (<i>Brassica tournefortii</i>)		800 mL - 1 L less than 12 cm diameter	
			1.0 - 1.2 L greater than 12 cm diameter	
			800 mL - 1.2 L	
	Dock - seedling (<i>Rumex spp.</i>) Seasonal suppression of: Perennial Phalaris (<i>Phalaris</i>), Sorrel (<i>Rumex acetosella</i>), Sub Clover (<i>Trifolium subterraneum</i>), Soursob (<i>Oxalis pes-caprae</i>), Skeleton Weed (<i>Chondrilla juncea</i>) – fully emerged rosettes (NSW only), Sub Clover (<i>Trifolium subterraneum</i>)		1.2 L	

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
<p>SOUTHERN AUSTRALIA Before sowing a crop or pasture</p> <p>For weed control prior to sowing a crop or pasture with full soil disturbance by cultivation or sowing with a tyned implement</p>	All the above weeds	Tas only	1.2 - 2.4 L	TAS ONLY: Use 1.2 L on annual weeds and 2.4 L on perennial weeds. The product may also be tank mixed with dicamba to improve control of sorrel, dock and white clover. Observe dicamba label directions and plant back periods.
<p>SOUTHERN AUSTRALIA Before sowing a crop or pasture</p> <p>For weed control prior to sowing a crop or pasture with minimal or no soil disturbance.</p>	<p>Barley Grass (<i>Hordeum leporinum</i>), Volunteer Cereals, Wild Oats (<i>Avena spp.</i>)</p> <p>Brome Grass (<i>Bromus unioloides</i>), Canary Grass (<i>Phalaris spp.</i>), Capeweed (<i>Arctotheca calendula</i>), Variegated Thistle (<i>Silybum marianum</i>), Winter Grass (<i>Poa annua</i>)</p>	NSW, VIC, Southern WA, SA only	<p>800 mL - 1.2 L</p> <p>1.0 - 1.6 L</p>	<p>Rate Selection: Use the Higher Rate when treating in cold/overcast conditions, when using late in the season. Use the lower rate on young weeds and the higher rate on mature weeds i.e. fully tillered grasses or broadleaf weeds at budding or stem elongation.</p> <p>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.</p> <p>Annual Ryegrass, Silver Grass and Perennial Grasses – Addition of a suitable wetter may improve control. It is recommended to use water volumes of 70 L/ha or more with low volume nozzles (eg SS 11001 or</p>

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	Annual Ryegrass (<i>Lolium rigidum</i>), Paterson's Curse/Salvation Jane (<i>Echium plantaginium</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Scotch Thistle (<i>Onopordum acanthium</i>), Silver Grass (<i>Vulpia spp.</i>), Spear Thistle (<i>Cirsium vulgare</i>), Wild Mustard (<i>Sisymbrium officinale</i>), Wild Radish (<i>Raphanus raphanistrum</i>), Wild Turnip (<i>Brassica tournefortii</i>)		1.2 - 1.6 L	<p>Hardi No 10) to improve control.</p> <p>Aerial Application: May be applied by air provided a good seed bed has been established. Always use the higher rates. See Aerial equipment.</p> <p>Tank Mixtures: For improved control of dock, sorrel and sub-clover add dicamba. Read and follow all label directions for the tank mix product. See tank mixtures for directions. Addition of ammonium sulphate 2 L/100 L may improve control when treating under adverse environmental conditions.</p> <p>Pasture or Crop Establishment. Do NOT sow into excessive trash. Trash may be removed by grazing after treatment. Grazing may commence one day after treatment of annual weeds (small) and 7 days for perennial weeds. Delay grazing for 3 days where annual weeds are large. Sowing may proceed when excessive trash is removed, but not sooner than one day after treatment of annual weeds and 7 days for perennial weeds. See also Crop Establishment.</p> <p>Aerial (or Surface) Seeding: Delay seeding until trash is completely removed by grazing and/or plant decay. When establishing pasture, ensure application of fertilizer and insecticides and follow-up management is undertaken as required.</p>
	Erodium (<i>Erodium cicutarium</i>), Plantain (<i>Plantago spp.</i>), Perennial Phalaris (<i>Phalaris aquatica</i>), Sorrel (<i>Rumex acetosella</i>), Sub Clover (<i>Trifolium subterraneum</i>), Yorkshire Fog (<i>Holcus lanatus</i>)		1.5 - 2.0 L	
	Dock (<i>Rumex spp.</i>), Flatweed (<i>Hypochoeris radicata</i>)		2.0 L	
SOUTHERN AUSTRALIA Before sowing a crop or pasture	All the above weeds	Tas only	1.2 - 2.4 L	TAS ONLY: Use 1.2 L on annual weeds and 2.4 L on perennial weeds. The product may also be tank mixed with dicamba to improve control of sorrel, dock and white clover. Observe dicamba label directions and plant back

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
For weed control prior to sowing a crop or pasture with minimal or no soil disturbance.				periods.
SOUTHERN AUSTRALIA For weed control to commence a fallow	Barley Grass (<i>Hordeum leporinum</i>), Volunteer cereals, Wild Oats (<i>Avena spp.</i>) Annual Ryegrass (<i>Lolium rigidum</i>), Brome grass (<i>Bromus unioloides</i>), Silver Grass (<i>Vulpia spp.</i>), Capeweed (<i>Arctotheca calendula</i>), Paterson's Curse/Salvation Jane (rosette) (<i>Echium plantaginium</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Scotch Thistle (<i>Onopordum acanthium</i>), Silver grass (<i>Vulpia spp.</i>), Spear Thistle (<i>Cirsium vulgare</i>), Wild Mustard (<i>Sisymbrium orientale</i>), Wild Radish (<i>Raphanus raphanistrum</i>), Wild Turnip (<i>Brassica tournefortii</i>)	NSW, VIC, Southern WA, SA only	800 mL - 1.2 L 1.2 – 1.6 L	Treat only actively growing plants not under stress from low moisture, frost, cold, disease or waterlogging. 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. Rate Selection: 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. Soursob – Treat at tuber exhaustion. Hoary Cress – Treat from late rosette to early flowering. Couch – Use the higher rate on dense infestations. Apply sequential treatments during summer and autumn, with autumn being most effective. Repeat applications will be required for complete control. For improved control, use in conjunction with cultivation. Annual Ryegrass, Silver Grass and Perennial Grasses – Addition of a suitable wetter may improve control. It is recommended to use water volumes of 70 L/ha or more with low volume nozzles (eg SS 11001 or Hardi No. 10) to improve control. Tank Mixtures: Read and follow all label directions, restraints, plant-back periods, withholding periods, regional

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	Hoary Cress (<i>Cardaria draba</i>), Soursob (<i>Oxalis pes-caprae</i>)		1.2 L	use restrictions and safety directions for the tank mix products. See Tank Mixtures for directions.
	Couch (<i>Cynodon dactylon</i>)		1.2 - 2.4 L	
	All the above weeds	Tas only	1.2 - 2.4 L	TAS ONLY: Use 1.2 L on annual weeds and 2.4 L on perennial weeds. The product may also be tank mixed with dicamba to improve control of sorrel, dock and white clover. Observe dicamba label directions and plant back periods.
NORTHERN AUSTRALIA For weed control prior to sowing a summer or winter crop or in a fallow	Annual Phalaris (<i>Phalaris spp.</i>), Barley Grass (<i>Hordeum vulgare</i>), Volunteer cereals, Wild Oats (<i>Avena spp.</i>)	Northern NSW, Qld only	400 - 800 mL	Treat only actively growing weeds not under stress from low moisture, frost, cold, disease or waterlogging. 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. Under summer (hot) conditions, dense infestations of Barnyard Grass and Liverseed Grass may require follow-up treatment for complete control. In winter (cold) conditions, symptoms on Deadnettle may be slow to develop. Rate Selection: 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.
	Barnyard Grass (<i>Echinochloa crus-galli</i>), Button Grass (<i>Dactyloctenium radulans</i>), Columbus Grass (seedling) (<i>Sorghum xalmun</i>), Liverseed Grass (<i>Urchloa spp.</i>), Lovegrass/Stink Grass (<i>Eragrostis cilianensis</i>), Native Millet (<i>Panicum decomposition</i>), Volunteer Sorghum (<i>Sorghum halepense</i>)		800 mL - 1.6 L	
	Aust Bluebell (Qld only) (<i>Wahlenbergia gracilis</i>), Cudweed (<i>Gnaphalium luteo-album</i>), Fumitory (<i>Fumaria officinalis</i>),		800 mL - 1.2 L	
				Aerial Application: See General Instructions. Do not apply by air if temperature is over 30°C. Crop Establishment: Sowing should not proceed until conditions allow for formation of a satisfactory seedbed.

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	<p>Mexican Poppy (<i>Argemone ochroleuca</i>), New Zealand Spinach (<i>Tetragonia tetragonoides</i>), Saffron Thistle (<i>Carthamus lanatus</i>), Spear Thistle (<i>Cirsium vulgare</i>), Spurge (<i>Euphorbia spp.</i>), Stinking Goosefoot (<i>Chenopodium vulvaria</i>)</p> <p>Black (Giant) Pigweed (<i>Trianthema portulacastrum</i>), Boggabri Weed (<i>Amaranthus macrocarpus</i>), Caltrop (<i>Tribulis terrestris</i>), Indian Hedge Mustard (<i>Sisymbrium orientale</i>), Mintweed (<i>Salvia reflexa</i>), Summer Grass (<i>Digitaria ciliaris</i>)</p> <p>African Turnip Weed (<i>Sisymbrium thellungi</i>), Dead Nettle (<i>Lamium amplexicaule</i>), Sweet Summer Grass (<i>Digitaria sanguinalis</i>), Variegated Thistle (<i>Silybum marianum</i>), Volunteer Sunflower (<i>Helianthus annuus</i>)</p>		<p>400 - 800 mL up to 3 cm in height or diameter or up to 5 true leaves OR 800 mL - 1.2 L greater than 3 cm in height or diameter or 5 true leaves</p> <p>600 - 800 mL up to 5 true leaves or 3 cm in height or diameter OR 800 mL - 1.6 L greater than 3 cm in height or diameter</p>	<p>See Crop Establishment for directions.</p> <p>Tank Mixtures: Read and follow label directions, restraints, plant back periods, Withholding Periods and Safety Directions for the tank mix products. DO NOT tank mix with atrazine when spraying Barnyard Grass or Liverseed Grass.</p>

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	Annual Ground Cherry (<i>Physalis ixocarpa</i>), Bladder Ketmia (<i>Hibiscus trionum</i>), Camel Melon (<i>Citrullus lanatus</i>), False Castor Oil Plant (<i>Datura spp.</i>), Noogoora Burr (<i>Xanthium occidentale</i>), Turnip Weed (<i>Rapistrum rugosum</i>), Wild Turnip (<i>Brassica tournefortii</i>), Wireweed (<i>Polygonum aviculare</i>)		800 mL - 1.2 L prior to stem elongation/budding. After that use 400 mL - 1.2 L plus 500 - 700 mL 2,4- D ester (800 g/L) or 1.2 - 1.6 L of this product alone	
	Pigweed (<i>Portulaca oleracea</i>)		800 mL - 1.6 L up to 20 cm in diameter	Use the higher rate on larger weeds. Control of Pigweed over a wide range of growth stages can be achieved with metsulfuron (600 g/kg). Observe recropping intervals.
	Sowthistle (<i>Sonchus oleraceus</i>)		600 - 800 mL rosettes up to 3 cm in diameter 800 mL - 1.6 L greater than 3 cm in diameter	Previously grazed plants may be difficult to control without allowing full recovery.
	Couch Grass (<i>Cynodon dactylon</i>)		1.2 - 2.4 L	Use the higher rate for dense infestations. Apply sequential treatments during summer and autumn, with autumn being most effective. Repeat applications will be required for complete control. For improved control, use in conjunction with cultivation.
	Johnson Grass (<i>Sorghum halepense</i>)		1.6 - 2.4 L	Use the higher rate on plants approaching seedhead stage. Apply to plants with a minimum of 30 cm new growth.

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	Nutgrass (<i>Cyperus rotundus</i>)		2.4 L + 2.4 L	<p>Sequential treatments will be required for long term control.</p> <p>Make the first application to actively growing plants when at least 20% have reached the head stage (normally about Feb). After allowing maximum reemergence to occur (normally 6-8 weeks), it is essential to make a second application. NOTE: Follow-up treatments should be made as part of a Nutgrass control programme.</p>

PASTURE RENOVATION AND TOPPING

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
Pasture with Poa Tussock present as a weed. For reduction of ground cover allowing pasture renovation	Most annual weeds and Poa tussock (<i>Poa labillardii</i>)	Qld, NSW, Vic, Tas only	2.4 - 3.2 L	Before Spraying: - graze heavily - remove stock 14 days or more before treatment - apply after autumn break when plants are actively growing but before frosts begin (March-May) Application: Increasing to the higher rate may give more effective reductions. Follow-up Management: Sowing of new pasture may begin 14 days after treatment. It is essential that correct follow-up pasture establishment and management occurs after treatment. Spot treatment will limit re-infestation. May be aerially applied (see Aerial Equipment)
Pasture with Bent Grass present as a weed For control/suppression of Grass before sowing a crop or pasture	Annual weeds and Bent Grass (<i>Agrostis tenuis</i>)	Tas, Vic only	2.0 L	Apply late spring when seed heads have developed but before the onset of summer moisture stress. Remove stock prior to spraying to achieve good control of Bent foliage cover. Ensure plants are actively growing. 10-21 days after spraying, fully disturb soil with tyned implement and then sow summer crop and/or re-seed pasture or crop the following autumn.
Pasture Topping for the reduction of seed set of annual grasses, Capeweed and Calomba daisy	Annual Ryegrass (<i>Lolium rigidum</i>), Calomba daisy (<i>Pentzia suffruticosa</i>) Barley Grass (<i>Hordeum leporinum</i>), Brome Grass (<i>Bromus unioloides</i>), Capeweed (<i>Arctotheca calendula</i>),	NSW, Vic, SA, WA, TAS only	360 mL 240 - 360 mL	Use the Higher Rate for heavy infestation or where annual ryegrass is present. Apply before "haying off". Annual Ryegrass and Capeweed – Apply at Flowering. Other Grasses – Apply at head to milky dough stage. Stock should be removed before spraying to allow regrowth. Pasture legumes may be affected. Do not apply to medic/clover crops to be used for hay or seed.

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	Silver Grass (<i>Vulpia spp.</i>)			
Pasture manipulation for control/suppression of certain grasses before sowing soybeans, forage crops or Leucaena	Carpet Grass (<i>Xonopus ssp.</i>), Kikuyu (<i>Pennisetum clandestinum</i>), Paspalum (<i>Paspalum dilatatum</i>)	NSW, Vic, WA, only	1.1 - 4.8 L	<p>Rate Selection: Apply the Lower Rate for the suppression only. The Higher Rate will provide control.</p> <p>Band Spraying: Band spraying may be done immediately after the sowing operation. Mount the nozzles behind the coulter/tynes/press wheel assembly of the band seeder. Adjust to spray 0.5 to 1m strips. Ensure minimal disturbance of pasture. Excessive dust created in the seeding operation may reduce herbicide activity. Pasture seed set must be drilled at the appropriate depth and covered by soil.</p> <p>Leucaena – (QLD ONLY) Rows should be 4m apart. Use 2 L/ha with single taper fan nozzle LFI-80 mounted at the rear of a single row planter giving a 1m swath.</p>
Band spraying may be also applied as a band or strip spray	Carpet Grass, Paspalum	Qld only	1.1 - 4.8 L	
	Kikuyu		500 mL – 4.8 L	
	Barbed Wire Grass (<i>Cymbopogon refractus</i>), Black Spear Grass (<i>Hederopogon contortus</i>), Wire Grasses (<i>Aristida spp.</i>), Love Grasses (<i>Erogrostis spp.</i>), Red Natal Grass (<i>Rhynchelytrum repens</i>)		2.4 L	
Cotton Pre-harvest DO NOT use on crops intended for seed production	Bathurst Burr (<i>Xanthium spinosum</i>), Noogoora Burr (<i>X. occidentale</i>), Winter Annual Weeds including Sow Thistle/Milk Thistle (<i>Sonchus oleraceus</i>)	Qld, NSW only	1 - 2 L	Use the lower rate on light infestations of small weeds, where the crop canopy allows adequate spray coverage of the weeds. Increase to the higher rate when the crop canopy may limit coverage, when treating dense infestations, or when treating larger weeds. Apply alone or in tank mixtures with Harvade or Dropp. Apply when at least 60% of bolls are open and immature bolls cannot be easily cut with a sharp knife. Where a leafy canopy limits spray coverage, reduced weed control can be expected. For best results under these conditions, delay

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
	Nutgrass (seasonal suppression only)		2 L	<p>application until the canopy re-opens following initial conditioning treatment.</p> <p>Where control of Nutgrass or Noogoora Burr is required, treatments should be applied prior to the onset of frosts. When tank mixed with defoliant, a slightly higher proportion of cotton leaf may be retained, particularly where the higher rate is used. Read and follow all the label instructions for the tank mix product.</p>
Cotton Shielded Sprayers Qld, NSW only	<p>Refer to Weeds Controlled section</p> <p>NORTHERN AUSTRALIA: In fallows or prior to sowing a crop Qld, NSW only</p>			<p>Apply this product to weeds growing between crop rows using a shielded sprayer. DO NOT apply to crops less than 20 cm high. DO NOT allow spray or spray drift to contact any part of the cotton plants as severe injury or destruction may result.</p>

SUGAR CANE (RATOON CONTROL) FOR QLD AND NSW ONLY

Situation	Variety	Rate L/ha	Critical Comments
Sugar Cane Ratoon Control	Q63, Q87, Q90, Q102, Q117, Q120, Q129, Q130, H56-752, Pindar, Triton	2.4 - 3.2 L	Apply when ratoons are actively growing and are 60-100 cm tall. DO NOT apply if plants are under stress from waterlogging or low moisture. Use the Lower Rate for suppression or where control by cultivation is planned.
	Q86, Q96, Q113	3.2 - 4 L	Use the Higher Rate for control.
	Cassius, Q115, Q122, Q94	4 - 4.8 L	Boom height must allow for correct overlap of the spray pattern at the top of the crop canopy.
	NC0310, Q107	4.8 - 7.2 L	

RICE DIRECT DRILLING FOR NSW ONLY

Situation	Variety	Rate L/ha	Critical Comments
Rice Direct Drilling	Annual Ryegrass (<i>Lolium rigidum</i>), Annual Phalaris (<i>Phalaris canariensis</i>), Barley Grass (<i>Hordeum leporinum</i>), Burr Medic (<i>Medicago spp.</i>), Sub Clover (<i>Trifolium subterraneum</i>), Winter Grass (<i>Poa annua</i>)	800 mL - 1.0 L	If plants are drought stressed, a pre watering must be applied. If the site has been grazed, allow plants to regrow to 6-8 cm before treatment. For the control of Annual Ryegrass, use the higher rate. Crop Sowing – Sow 1-14 days after treatment. Residual control will only be achieved by adding another suitable herbicide.

SORGHUM CONTROL

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
Sorghum control Before harvest	Grain Sorghum (<i>Sorghum bicolor</i>)	Qld, NSW only	1.2 - 1.6 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 than

Situation	Weeds Controlled	State	Rate (L/ha)	Critical Comments
				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 brown to prevent further lodging. CAUTION: Sorghum may be naturally toxic to stock.
Sorghum control Post harvest	Sorghum stubble (Grain sorghum) (<i>Sorghum bicolor</i>)	Qld, NSW only	800 mL - 1.2 L for new regrowth from slashed stubble	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 cultivation 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.
			1.2 - 1.6 L for standing green stubble	Use this rate for standing stubble if sufficiently green and for fresh spring regrowth.

USE SITUATIONS

Situation	Weeds Controlled	Application Rates	Critical Comments
Dry drains and channels, dry margins of dams, lakes and streams	For Weeds Controlled, refer to list of species under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this leaflet	For Application rates refer to rates shown under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this leaflet	See Critical Comments shown for section and individual weeds under ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this leaflet
Forestry			<p>USE SITUATIONS INCLUDE:</p> <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 or severe damage may occur. DO NOT allow wiper surface to come into contact with ANY PART of the tree.
Non Agricultural areas, Rights of way, domestic/public service areas, commercial/industrial areas and around buildings			This product does not provide residual control.
Onions – Post-planting or pre-emergent application		800 mL/ha - 2.4 L/ha	Apply post-sowing and at least 7 days before emergence of onion shoots. DO NOT apply to emerging onion plants as severe injury will occur. For small annual weeds, use the lower rate and for large annual weeds (as a guide greater than 15 cm in height) and where perennial weeds are present, use the higher rates.
Pastures	For Application rates, refer to rates shown under	<ol style="list-style-type: none"> 1. Direct (spot) application 2. Selective application (see Wiper Equipment) 3. Boom applications are used in pasture control prior to re-seeding of 	

Situation	Weeds Controlled	Application Rates	Critical Comments
<p>Vines and Tree Crops: Nuts (incl. Almond, Pistachio, Macadamia, Pecan and Walnut), Pome Fruit, Litchi, Stone Fruit, Vineyards and Citrus Fruit, Avocado, Guava, Kiwifruit, Mango, and Paw Paw, Bananas</p>		<p>ANNUAL WEED CONTROL and PERENNIAL WEED CONTROL in this leaflet</p>	<p>improved pasture crop. See Protection of Livestock, Wiper Equipment and Conservation Tillage sections of this label. ALL TREES AND VINES: DO NOT spray near trees/vines less than 3 years old. DO NOT allow Wiper contact. 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. CITRUS, LITCHI, OLIVES, POME FRUIT, NUTS AND VINEYARDS: DO NOT allow spray to contact any part of the plant.</p>
<p>Row Crops (Cotton, Navy Beans, Peanuts, Soybeans, Sugar Cane). Where Wiper Equipment or Shielded Sprayers (cotton only) is used to control weeds in row crops</p>		<p>See Wiper Equipment section of this label</p>	<p>See section entitled "For Wiper Equipment" in this leaflet. 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. DO NOT apply in crops under 20 cm high. Shielded Sprayers (Cotton only) – apply to weeds growing between crop rows using a shielded sprayer</p>

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

WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED.

GENERAL INSTRUCTIONS

This product is a non selective herbicide which is effective against a wide range of annual and perennial broadleaf weeds and grasses. It 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.

SPRAY PREPARATION

1. Make sure tank is clean and residues from previous usage have been removed.
2. Fill the spray tank $\frac{1}{2}$ to $\frac{3}{4}$ full with clean water
3. Where ammonium sulphate is recommended, wash 2% v/v (2 L/100 L spray solution) through a top mesh screen into the tank and mix thoroughly.
4. Add the appropriate amount of product as per the directions for Use Tables.
5. Add surfactant (if required), mix well, keeping filling hose below surface to avoid foaming.
6. Add water to fill vat.
7. Remove hose from tank as soon as full to prevent back siphoning.

Do not use mechanical agitators, as they cause excessive foaming.

Do not add non-approved herbicides and insecticides.

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 produce hydrogen gas, which can form a combustible gas mixture which can be flashed by ignition sources.

CROP ESTABLISHMENT

This product can be used to control emerged weeds prior to crop establishment. Suitable cultivation and/or sowing operations are required to provide seedbed conditions satisfactory for crop germination and development. Spraying early to control young weeds will favour preparation of suitable seedbeds. On friable soils where there is only a light cover of young weeds, sowing may proceed satisfactorily from one day after spraying. In situations of heavy weed growth, sowing should be delayed until weed decay and soil conditions allow formation of a favourable seedbed. Incorporation of green or decaying vegetation and roots into the seedbed by cultivation or sowing may cause retarded crop emergence, particularly in cold and/or wet conditions. Vegetation may be reduced by grazing, and weed decay may be assisted by cultivation to leave trash on the surface. In marginal seedbed conditions, take care to achieve the correct seeding depth, and avoid use of pre-emergence herbicides where label directions advise risk of retarded crop emergence.

Surfactant

The addition of surfactant may improve weed control where water rates are high or product rates are 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 spraying oils, agricultural chemicals or any other material except as directed on the label.

Organosilicone Penetrant

In certain situations such as for the control of brush and woody weeds (as indicated in the Directions of Use table), weed control may be enhanced by the addition of an organosilicone penetrant at its labelled rate.

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, waterlogging 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.

RESISTANT WEEDS WARNING**GROUP M HERBICIDE**

NAADCO Glyphosate 450 Herbicide is a member of the glycine group of herbicides. NAADCO Glyphosate 450 Herbicide has the inhibitor of EPSP synthase mode of action. For weed resistance management NAADCO Glyphosate 450 Herbicide is a Group M Herbicide.

Some naturally occurring weed biotypes resistant to NAADCO Glyphosate 450 Herbicide and other Group M 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 NAADCO Glyphosate 450 Herbicide or any other Group M Herbicides.

Since the occurrence of resistant weeds is difficult to detect prior to use, NAADCO accepts no liability for any losses that may result from the failure of NAADCO Glyphosate 450 Herbicide to control resistant weeds.

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 and uniform wetting is needed to maximise uptake by the plant. The dilution rate is given as volume per litre. Adjust equipment to ensure even spray pattern.

For Boom Equipment

Maximum efficiency can be achieved by using fan nozzles at a pressure of 240-280 kPa. Boom height should be adjusted to ensure double overlap of nozzle patterns at the top of the weed canopy. Water volumes of 75 to 200 litres of clean water per hectare are recommended. When using rates of 500 mL to 1.5 L/ha, spray volumes in the range of 25-100 L/ha are preferred.

For Aerial Equipment

For Micronair and boom equipment, a droplet size of 250-350 micron diameter is recommended in a minimum spray volume of 20 litres/ha. A swath width in the range of 15-17 metres is most appropriate for this form of spraying.

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 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.

In pasture establishment situations, it may also be necessary to spray hilly terrain and gullies in both directions to ensure good spray coverage of grass and broadleaf weeds and to avoid spray shielding effects from trees.

Hilly Terrain: As spraying height may vary on hilly terrain, to maximize target contact, 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 volume to at least 30 litres/ha and average droplet size to 300 micron if temperatures are in excess of 25°C. **DO NOT SPRAY** if temperature is above 30°C.

For Wiper Equipment

Wiper equipment such as Ropewick applicators can be used to apply this product to weeds growing in oilseed crops, sugarcane, cotton, seed and pod vegetables, tree and vine crops, pasture and non-crop areas as specified on this label. Weeds should be at least 15 cm above the crop or pasture. Operate wiper equipment a minimum of 10 cm above the crop or pasture. Speed of travel should be no greater than 8 kph. Best results are achieved at lower speeds and where two applications are made in opposite directions (double pass).

Where weeds are of variable height, or occur in clumps or in dense infestations, some plants may not be contacted by herbicide solution and re-treatment may be necessary. Mix only enough solution for immediate requirements. Do not store a mixed solution for more than a couple of days.

Rate: Mix 800 mL NAADCO Glyphosate 450 with 2 litres clean water to prepare a 33% solution. Refer to the Weeds Controlled section of the label for specific recommendations.

Sprayer Clean Up

After use, clean all spray equipment by thoroughly washing with clean water, or Komplete Klean spray equipment cleaner, 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 a wide range of products may be tank mixed with Glyphosate. 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: Liquid Ammonium Sulphate (2 L/100 L) can be used to minimise antagonism when mixed with flowable Triazine herbicides and help minimize the adverse effects of water quality problems such as high pH and mineral content that are common in creek and bore water, that can be antagonistic with Glyphosate herbicide.

Herbicides: Atrazine – flowable or granular (see Additives above – do not apply the tank mix for control of Barnyard grass), dicamba, 2,4-D ester, chlorsulfuron, metsulfuron, Flandor* 500, Yield*, Stomp*, LVE MCPA, Goal CT*, simazine flowable. Goal CT – The addition of Goal CT Herbicide 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 15°C). See Directions below.

Insecticides: Chlorpyrifos, dimethoate, fenitrothion, Gusathion*, Imidan*, Le-Mat*, Lorsban*, metasystox, Sumithion*, Perfekthion EC 400*.

Flowright Compatibility Agent

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

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, pastures, private properties or public lands.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT contaminate streams, rivers or waterways with product or used containers. When controlling weeds near water, refer to label directions to minimize 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 for one day after spraying, and for perennial weeds 7 days. For certain plants known to be toxic to stock (eg, soursob, variegated thistle), it is advisable to keep livestock away until complete browning occurs.

STORAGE AND DISPOSAL

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

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

For Refillable Containers: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

SAFETY DIRECTIONS

Product will irritate eyes and skin. Avoid contact with eyes and skin. When preparing the 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 soap and water. After each day's use, wash gloves and face shield or goggles and contaminated clothing.

FIRST AID

If poisoning occurs, contact a Doctor or Poisons Information Centre (Phone 13 11 26).

MATERIAL SAFETY DATA SHEET

For further information refer to Material Safety Data Sheet (MSDS) which can be obtained from NAADCO.

CONDITIONS OF SALE

NAADCO shall not be liable for any loss, injury, damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale, supply, use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on NAADCO's skill or judgment in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of NAADCO has any authority to add or to alter these conditions.

* Not a NAADCO trademark

APVMA Approval No. 64547/ 48595