

# CAUTION

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

## Spectra Glyphosate 450

### HERBICIDE

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

GROUP **M** HERBICIDE

A non-selective herbicide for the control of a wide range of annual and perennial weeds as per the Directions for Use Table.

**IMPORTANT: READ THE ATTACHED LEAFLET BEFORE USE**

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#### DIRECTIONS FOR USE

#### RESTRAINTS:

DO NOT disturb weeds by cultivation, sowing or grazing for 1 day after treatment of annual weeds and 7 days for perennial weeds, except where noted.

DO NOT treat weeds under poor growing conditions or dormant conditions as occur in drought, water logging, disease, insect damage or following frost.

DO NOT treat weeds heavily covered with dust or silt. Rainfall occurring up to 6 hours after application may reduce effectiveness. Heavy rainfall within 2 hours of the application may wash the chemical off the foliage and repeat treatment may be required.

Crop/Situation	State	Weeds Controlled	Rate L/ha	Critical Comments
SOUTHERN AUSTRALIA Prior to sowing a crop or pasture with full soil disturbance by cultivation or sowing with a tined implement	WA, SA, VIC, ACT, NSW only	Barley Grass, Brome Grass, Volunteer cereals, Wild oats	Pre tillering: 400 - 800mL Post tillering: 800mL – 1L	Spray when weeds are actively growing and are not stressed due to low moisture, frost, waterlogging, or disease. Ensure regrowth to 6-8cm if heavy grazing has occurred prior to spraying. Use higher rate if heavy grazing occurred prior to spraying OR if spraying is being carried out on mature weeds, i.e. fully tillered grasses, budding or elongating broadleaf weeds OR when treating under cold/overcast conditions. Cultivation or sowing may start 1-21 days after spraying. Allow 7 days for perennial weeds. If cultivation or sowing does not take place within 21 days, re-treatment may be necessary.
		Annual ryegrass, Canary grass (Annual phalaris), Silvergrass, Winter grass	Pre tillering: 800 – 1L Post tillering: 1.0L – 1.2L	If Dock, Perennial 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. Crop Establishment: Sowing should not commence until conditions allow the formation of a satisfactory seedbed. Refer to Crop establishment section. Tank Mixtures: Refer to Compatibility section if planning to spray in conjunction with a herbicide or additive for residual control, improved performance or is using an insecticide. Read these product labels carefully and adhere to the conditions of their use.
		Calomba daisy, Capeweed, Spiny Emex (Doublegee)	400 – 800mL less than 8cm diameter 800mL – 1L greater than 8cm diameter	
		Amsinckia, Fumitory, Paterson's Curse, Saffron Thistle, Scotch Thistle, Variegated thistle, Volunteer lupins, Wild turnip	800 – 1L less than 12cm diameter 1L – 1.2L greater than 12cm diameter	
		Dock (Seedling)	800mL – 1.2L	
		Perennial phalaris, Skeleton weed, Sorrel, Soursob, Sub clover	1.2L	Skeleton Weed: Spray only rosettes that have fully emerged (NSW only).
SOUTHERN AUSTRALIA Prior to sowing a crop or pasture with an implement that gives minimal or no soil disturbance.	NSW, ACT, SA, VIC, WA only	Barley grass, Volunteer cereals, Wild Oats	800mL – 1.2L	Spray when weeds are actively growing and are not stressed due to low moisture, frost, waterlogging, or disease.
		Brome grass, Canary grass, (Annual Phalaris), Capeweed, Variegated Thistle, Winter Grass	1.0 – 1.6L	Ensure regrowth to 6-8cm if heavy grazing has occurred prior to spraying. Use higher rate if heavy grazing occurred prior to spraying OR if spraying is being carried out on mature weeds, i.e. fully tillered grasses, budding or elongating broadleaf weeds OR when treating under cold/overcast conditions. Cultivation or sowing may start 1-21 days after spraying. Allow 7 days for perennial weeds. If cultivation or sowing does not take place within 21 days, re-treatment may be necessary.
		Annual ryegrass, Paterson's curse, Saffron thistle, Scotch thistle, Silvergrass, Wild mustard, Wild radish, Wild turnip	1.2 – 1.6L	If Dock, Perennial Phalaris, Skeleton Weed, Soursob or Sorrel is 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. Crop Establishment: Do not sow into excessive trash. Trash may be reduced by grazing after treatment. Allow 1 day for small annual, 3 days for large annual and 7 days for perennial weeds for spray activation and before grazing. Refer – Crop Establishment section.
		Erodium, Perennial phalaris, Plantain, Perennial Ryegrass, Sorrel, Sub clover, Yorkshire fog	1.5 – 2.0L	Tank Mixtures: Refer – Compatibility section if planning to spray in conjunction with a herbicide or additive for residual control, improved performance or if using an insecticide. Read these product labels carefully and adhere to the conditions of their use. Aerial Application: Use the higher rates. Refer – Aerial Equipment. Delay aerial seeding until trash is removed by grazing and/or plant decay.
		Dock, Flatweed	2.0L	
		Tas only	All the above weeds	1.2 – 2.4L
SOUTHERN AUSTRALIA Weed control to commence a fallow.	NSW, ACT, VIC, SA, WA only	Barley Grass, Volunteer cereals, Wild Oats	800mL – 1.2L	Spray when weeds are actively growing and are not stressed due to low moisture, frost, waterlogging, or disease.
		Annual Ryegrass, Brome Grass, Capeweed, Paterson's Curse (Rosette), Saffron thistle, Scotch thistle, Silvergrass, Spear thistle, Wild mustard, Wild radish, Wild turnip	1.2 – 1.6L	Ensure regrowth to 6-8cm if heavy grazing has occurred prior to spraying. Use higher rate if heavy grazing occurred prior to spraying OR if spraying is being carried out on mature weeds, i.e. fully tillered grasses, budding or elongating broadleaf weeds OR when treating under cold/overcast conditions. Use lower rate on young weeds or where cultivation will commence within 21 days.
		Hoary cress	1.2L	Treat from late rosette to early flowering.
		Soursob	1.2L	Treat at tuber exhaustion.
		Couch	1.2 – 2.4L	Use the higher rate on dense infestations. Apply sequential treatments during Summer and Autumn, with Autumn being the most effective. Repeat applications will be required for complete control. For improved control use in conjunction with cultivation.
		Tas only	All the above weeds	1.2 – 2.4L

Crop/Situation	State	Weeds Controlled	Rate L/ha	Critical Comments
NORTHERN AUSTRALIA For weed control in fallows or prior to sowing a Summer or Winter crop	Qld, NSW only	Barley Grass, Canary Grass (Annual Phalaris), Cereals Volunteer, Wild Oats Barnyard Grass, Button Grass, Columbus Grass (seedling), Liverseed Grass, Lovegrass, (Stinkgrass), Native Millet, Sorghum (volunteer) Australian Bluebell (Qld only), Cudweed, Fumitory, Mexican Poppy, New Zealand Spinach, Saffron Thistle, Spear Thistle, Spurge, Stinking Goosefoot Black (Giant) Pigweed, Boggabri Weed, Caltrop, Indian Hedge Mustard, Mintweed, Summer Grass African Turnip Weed, Deadnettle, Sweet Summer Grass, Sunflower (volunteer), Variegated Thistle Bladder Ketmia, Camel Melon, False Castor Oil Plant, Ground Cherry, Noogoora Burr, Turnip Weed, Wild Lettuce, Wild Turnip, Wireweed Pigweed Milkthistle (Sowthistle) Couch Johnson Grass Nutgrass	400 – 800mL 800mL – 1.6L 800mL – 1.2L 400mL – 800mL up to 3cm in height or diameter or up to 5 true leaves Or 800mL – 1.2L greater than 3cm height or diameter or 5 true leaves 600-800mL up to 3cm in height or diameter or up to 5 true leaves Or 800mL-1.2L greater than 3cm height or diameter or 5 true leaves 800mL-1.2L prior to stem elongation / budding. After that 400mL – 1.2L plus 700mL 2,4-D Ester 800 800mL-1.6L up to 20cm diameter 600-800mL rosettes up to 3cm diameter. 800mL-1.6L greater than 3cm diameter 1.2 - 2.4L 1.6 - 2.4L 2.4 + 2.4L	Spray when weeds are actively growing and are not stressed due to low moisture, frost, waterlogging, or disease. Ensure regrowth to 6-8cm if heavy grazing has occurred prior to spraying. Use lower rate on young weeds or where cultivation will commence within 21 days. Use higher rate if spraying is being carried out on mature weeds, i.e. fully tillered grasses, budding or elongating broadleaf weeds. Consider the addition of 2,4-D for mature broadleaf weeds. Dense swards of Barnyard Grass and Liverseed Grass (Urochloa) may require re-treatment under hot moisture stress conditions. In cold conditions symptoms on Deadnettle may be slow to develop. Crop Establishment: Sowing should not commence until conditions allow the formation of a satisfactory seedbed. Refer – Crop Establishment section. Tank Mixtures: Refer – Compatibility section if planning to spray in conjunction with a herbicide or additive for residual control, improved performance or if using an insecticide. Read these product labels carefully and adhere to the conditions of their use. Do not mix with Atrazine when spraying Barnyard grass or Liverseed Grass. Aerial Application: Refer – Aerial Equipment section for aerial application under hot conditions. Do not apply by aircraft when temperature is above 30°C. Use higher rate on larger weeds. Control of Pigweed over a wide range of growth stages can be obtained with the addition of Metsulfuron 600. Observe re-cropping intervals. Previously grazed plants may be difficult to control without allowing full recovery. Use the higher rate for dense infestations. Apply sequential treatments during Summer and Autumn, with autumn being the most effective. Repeat applications will be required for complete control. For improved control use in conjunction with cultivation. Use the higher rate on plants approaching seedhead stage. Apply to plants with a minimum of 30cm new growth. Sequential treatments will be required for long term control. Make the first application to actively growing plants when at least 20% have reached the head stage (normally around February.). After allowing maximum re-emergence to occur (normally 6-8 weeks), it is essential to make a second application.

#### PASTURE RENOVATION

Situation	State	Rate L/ha	Critical Comments
Pasture, with a high predominance of Poa Tussock and annual weeds to allow pasture renovation.	NSW, ACT, Vic, Tas, Qld only	2.4 – 3.2L	Timing: Graze heavily, and then remove stock at least 14 days before spraying to allow new growth. Apply to actively growing plants after the Autumn break but before heavy frosts (March – May). Application: Increasing to the higher rates may give more effective reductions in weed infestation. Refer – Aerial Application section, if applying by air. Follow up Management: Sowing may start from 14 days after spraying. It is essential that correct follow-up pasture establishment and management occurs after treatment. Spot treatment will limit re-infestation.
Pasture with a high predominance of Bent Grass present as a weed to allow sowing of a crop or pasture.	Vic, Tas only	2.0L	This rate will give control/suppression to establish improved pastures or crops. Timing: 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. Follow up Management: Use a tined implement to fully disturb the soil 10-21 days after spraying. Follow up by planting a Summer crop and/or re-seeding pasture or crop the following Autumn.

#### PASTURE TOPPING

Crop/Situation	State	Weeds controlled	Rate L/ha	Critical Comments
Pasture Topping to reduce seed set of Annual grass, Capeweed and Calomba Daisy	NSW, SA, Tas, ACT, WA, Vic only	Barley grass, Brome grass, Capeweed, Silvergrass Annual Ryegrass, Calomba Daisy	240mL – 360mL 360mL	Allow even regrowth of weeds by removing stock prior to treatment. Pasture legume populations may be reduced due to treatment. Do not apply to Clover or Medic crops to be used for hay or seed. Timing: Apply to Capeweed and Annual ryegrass at FLOWERING and before signs of "hay off". For other weeds apply from HEAD to MILKY DOUGH stage. Application: Use the higher rate for dense infestations of weeds where Annual ryegrass is present. Add wetter at label rates for water rates over 50L/ha.

#### PASTURE MANIPULATION

Crop/Situation	State	Weeds controlled	Rate L/ha	Critical Comments
For suppression or control of pasture species prior to sowing improved pasture species, forage crops or soybeans	NSW, WA, ACT, Vic only	Carpet grass, Kikuyu, Paspalum	1.1 – 4.8L	Apply lower rates for suppression only. Higher rates will provide complete control.
		Carpet Grass, Paspalum	500mL – 4.8L	
	Qld only	Kikuyu Barbed wire grass, Black speargrass, Love grasses, Red Natal grass, Wire grasses	2.4L	

#### DIRECT DRILLING FOR RICE

Crop/Situation	State	Weeds controlled	Rate L/ha	Critical Comments
Prior to Direct drilling rice	NSW only	Canary grass (Annual phalaris), Annual ryegrass, Barley grass, Burr medic, Sub-clover, Winter grass	800mL – 1.0L	Ensure regrowth to 6-8cm if heavy grazing has occurred prior to spraying. If experiencing drought conditions, a pre-watering prior to treatment is recommended. Use higher rates to control Annual Ryegrass when it is the dominant weed. Crop Sowing: Direct drilling may take place 1-14 days after spraying. Residual weed control will only be achieved through the use of permanent water and approved selective herbicides according to their label instructions.

#### COTTON

Crop/Situation	State	Weeds controlled	Rate L/ha	Critical Comments
Cotton	QLD, NSW only	Bathurst burr, Noogoora burr, Annual weeds including Sowthistle / Milkthistle	1.0 – 2.0L	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 spray coverage, when treating dense infestations, or when treating larger weeds. Where a leafy canopy limits spray coverage, reduced weed control can be expected. In these situations, best results will be achieved if application is delayed until the canopy re-opens after the initial conditioning treatment. Apply alone or in tank mixtures with Dropp or Harvade. Apply when at least 60% of bolls are open and immature bolls cannot be easily cut with a sharp knife.
PRE-HARVEST Do not use on crops intended for seed production		Nutgrass (seasonal suppression only)	2.0L	Where control of Nutgrass or Noogoora burr is required, treatment 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 label directions for tank mix products.
COTTON Shielded Sprayers	QLD, NSW only	Refer to weeds controlled section. Northern Australia For weed control in fallows or prior to sowing a Summer or Winter crop		Apply this product to weeds growing between crop rows using a shielded sprayer. Do not apply in crops less than 20cm high. Do not allow spray or spray drift to contact any part of the cotton plants as severe injury or destruction may result.

#### SORGHUM CONTROL

Crop/Situation	State	Weeds controlled	Rate L/ha	Critical Comments
Sorghum control Pre-harvest	QLD, NSW only	Grain Sorghum	1.2 – 1.6L	Apply under optimal growing conditions only. DO NOT apply if crop is under stress from low moisture, frost, cold or waterlogging. Do not apply to varieties intended for seed production, or varieties prone to lodging. Use the lower rate for control of crop and late tillers and suppression of ratoon regrowth. Use the higher rate for improved suppression of ratoon regrowth. Timing: Apply when grain moisture is less than 25%. Application can be made when moderate browning has occurred. CAUTION: Treatment may increase potential for CROP LODGING, particularly if prior moisture stress has occurred. Harvest as soon as sufficient dry down has occurred to avoid possible lodging. CAUTION: Sorghum may be naturally toxic to stock.
Sorghum control Post-harvest	QLD, NSW only	Grain Sorghum Stubble	800mL – 1.2L for fresh regrowth from slashed stubble.  1.2 – 1.6L for standing stubble if sufficiently green and for fresh Spring regrowth	Apply under optimal growing conditions only. DO NOT apply if crop is under stress from low moisture, frost, cold or waterlogging. Ensure slashed stubble regrowth is at least 20cm high before treatment. Ensure standing stubble has regrown to 20cm high after grazing and there is adequate green leaf present. Use the lower rate for knockdown and regrowth suppression where cultivation is to follow. Increase to the higher rate for improved regrowth control. NOTE: If the crop has been subject to stress or marginal growing conditions, variable results can occur. Some varieties of Sorghum can be more susceptible to giving variable results. CAUTION: Sorghum may be naturally toxic to stock.

Crop/Situation	State	Weeds controlled	Rate L/ha	Critical Comments
Sugar Cane Ratoon control	QLD, NSW only	Sugar Cane (Regrowth of the ratoons)	3.2 – 7.8L	Apply under optimal growing conditions only. DO NOT apply if crop is under stress from low moisture, frost, cold or waterlogging. Apply only to actively growing ratoons when they reach 60-120cm tall. Use the lower rate for suppression and when cultivation is to follow application. The higher rate will give control. Some varieties may require higher rates.

#### GENERAL USES

USE SITUATIONS – All states (except where noted). For weeds controlled and application rates, refer to the WEEDS CONTROLLED tables.	
NON-AGRICULTURAL AREA Around buildings, Commercial and Industrial areas, Domestic and public service areas and Rights of ways.	For residual control, Spectra Glyphosate 450 Herbicide may be tank mixed with certain herbicides. Refer to Compatibility section.
AGRICULTURAL AREAS	Spectra Glyphosate 450 Herbicide may be used for control of annual and perennial weeds as directed. In agricultural land prior to sowing of any edible or non-edible crop, but not prior to transplanting tomato seedlings.
DRY DRAINS AND CHANNELS Dry margins of dams, lakes and streams situations	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 the water. Do not allow water to return to dry channels and drains within 4 days of application.
FORESTRY	Spectra Glyphosate 450 Herbicide may be used in the following situations: <ul style="list-style-type: none"> <li>• Prior to establishment of nurseries</li> <li>• For site preparation prior to planting</li> <li>• Amongst established trees using a directed or shielded sprayer</li> </ul> Do not allow spray or spray drift to come into contact with foliage or green bark or stems of desirable trees, as severe damage may occur.
TREE AND VINE CROPS Avocado, Banana, Blueberries, Citrus Fruit, Custard Apples, Dubosia, Figs-dessert, Guava, Litchi, Mango, Monstera Fruit, Nuts (Almond, Macadamia, Pecan, Pistachio and Walnut), Olives, Persimmons, Pome Fruit, Raspberries, Stone Fruit, Vineyards	Apply as directed or shielded spray only. Do not apply as a spray near trees or vines less than 3 years old, unless they are effectively shielded from spray or spray drift. Citrus fruits, Nuts, Olives and Pome fruit. Do not allow spray or spray drift to contact foliage, green bark or stems, canes laterals, suckers, flesh wounds or fruit. All other crops. Do not allow spray or spray drift to contact any part of the plant including the bark.
PASTURE	DIRECTED (SPOT) APPLICATION: Spectra Glyphosate 450 Herbicide is non-selective and may damage or kill any plant in the spray area. Re-treatment and/or pasture improvement may be required to restrict weed seedling re-establishment. BOOM APPLICATION: Spectra Glyphosate 450 Herbicide may be used to suppress or kill existing pasture species prior to re-seeding or planting other crops. Where directed (spot) spray has been applied, grazing stock need not be removed.

PERENNIAL WEEDS					
WEEDS CONTROLLED	STATE	APPLICATION RATES			CRITICAL COMMENTS
		BOOM – L/ha	Handgun / 100L	Knapsack per 15L	
Bent Grass ( <i>Agrostis</i> spp.)	Vic, Tas only	2.0L	400mL	60mL	Apply to actively growing plants in late Spring when they have some seed-head development, but before Summer moisture stress. Follow up management will be required. Fully disturb with a tined implement 10-21 days after spraying. Follow with a Summer crop and/or re-seeded pasture in the following Autumn.
Blackberry ( <i>Rubus fruticosus</i> )	NSW, Qld, Vic, Tas only		800mL - 1L	20 - 60mL	Should be applied between January-May i.e. from flowering to leaf fall. Ensure that plants are not under stress. Use of CDA equipment is not recommended. Complete spraying of foliage cover is essential for total control. Use the higher rate on old dense infestations over 1.75m high. In Tasmania, do not treat bushes bearing mature fruit or near mature fruit.
Blady Grass ( <i>Imperata cylindrica</i> )	Qld, ACT, NSW only	7.2L	1L	150mL	Apply to actively growing plants at the early head stage.
Bracken ( <i>Pteridium esculentum</i> )	All States	7.2L	1.2L	180mL	For boom application, always add a penetrant such as Pulse Penetrant, or otherwise reduced results will occur. It is recommended to slash bracken if practical in the Winter/Spring prior to treatment. Apply product to fully unfurled actively growing fronds, but prior to frosts. Complete control will not be achieved by one application, therefore repeat treatment is recommended.
Carpet Grass ( <i>Axonopus</i> spp.)	All States	2.4L	400mL	60mL	Apply to actively growing plants at the early head stage.
Cocksfoot ( <i>Dactylis dactylo</i> )			600mL	90mL	Apply to actively growing plants at the early head stage.
Couch ( <i>Cynodon dactylon</i> )		7.2L	1L	150mL	Apply to actively growing plants at the early head stage.
Cumbungi ( <i>Typha</i> spp.)					Apply to actively growing plants at the early head stage to full head stage (Summer/Autumn). Re-treatment may be required to restrict re-establishment from seedlings. 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 the water. Do not allow water to return to dry channels and drains within 4 days of application.
Flatweed (Cat's Ear ( <i>Hypochaeris radicata</i> ))		2.4L	600mL	90mL	Apply to fully developed rosettes at the early flower stage.
Guinea Grass ( <i>Panicum maximum</i> )		7.2L	1L	150mL	Apply to actively growing plants at the early head stage.
Hoary Cress ( <i>Cardaria draba</i> )	NSW, Tas, ACT, Vic only	1.2L	400mL	60mL	Apply from late July to September when plants are in late rosette to flowering stage. Plants should be actively growing and not under stress from low moisture, frost or water logging. Cultivation may start 7 days after application. In Tasmania addition of a non-ionic surfactant is recommended.
Johnson Grass ( <i>Sorghum halepense</i> )	All States	4.8L	800mL	120mL	For maximum long-term control, apply to actively growing plants at the early head stage.
Kangaroo Grass ( <i>Themeda australis</i> )					
Kikuyu ( <i>Pennisetum clandestinum</i> )					
Nutgrass ( <i>Cyperus rotundus</i> ) Does not refer to other Cyperus species which may be known locally as Nutgrass					
Paragrass ( <i>Brachiaria mutica</i> )		7.2L	1L	150mL	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 the water. Do not allow water to return to dry channels and drains within 4 days of application.
Paspalum ( <i>Paspalum dilatatum</i> )		4.8L	800mL	120mL	Apply to actively growing plants at the early head stage.
Phalaris ( <i>Phalaris aquatic</i> )	NSW, Vic, ACT, SA only	2.4 – 4.8L	400 - 800mL	60 - 150mL	For longer-term control, use the higher rates while plants are in an active growth phase in Winter/Spring. Lower rates may be used in conjunction with burning. Leave for 14-21 days for brownout before burning.
Phragmites, Common Reed ( <i>Phragmites australis</i> )	All States	7.2	1L	150mL	Apply to actively growing, developed plants approaching the early head stage. Results may not be apparent until the following season. 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 the water. Do not allow water to return to dry channels and drains within 4 days of application.
Plantains ( <i>Plantago</i> spp.)		2.4L	600mL	90mL	Apply to actively growing plants at the early head stage. Symptoms may be slow to develop.
Prairie Grass ( <i>Bromus unioloides</i> )	NSW, Vic, ACT, SA only	4.8L	800mL	120mL	Apply to actively growing plants at the early head stage.
Old Blue Grass ( <i>Dichanthium sericeum</i> )					
Red-leg Grass ( <i>Bothriochloa macra</i> )					
Rhodes Grass ( <i>Chloris gayana</i> )					
Rope Twitch ( <i>Agropyron repens</i> )	Vic, Tas only				Apply in late Summer-Autumn to actively growing plants with foliage at least 20cm high. To ensure maximum shoot emergence the area should NOT be cultivated in the period from the preceding Winter to the time of spraying.
Rushes ( <i>Juncus</i> spp.)	All States				Burning or pre-slashing of dead foliage is recommended if there is a dense infestation. Ensure plants are actively growing and sufficient green tissue before treatment. 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 the water. Do not allow water to return to dry channels and drains within 4 days of application.
Silverleaf Nightshade ( <i>Solanum elaeagnifolium</i> )	NSW, ACT only		1.6L	240mL	Use ONLY under good soil moisture conditions. Apply to actively growing plants at the late flowering to berry stage. Repeat spraying will be required to restrict re-growth and seeding establishment.
Sorrel ( <i>Rumex acetosella</i> )	All States		800mL	120mL	Apply to actively growing plants when most have reached the early bud stage.
Soursob ( <i>Oxalis pescaprae</i> )	NSW, WA, ACT, SA, Vic, Tas only	1.2L	400mL	60mL	For long-term reduction apply from late July to early September but before natural plant yellowing occurs. Soursob should be actively growing and not under stress from low moisture of waterlogging. Allow recovery after frost damage before spraying. Allow foliage to re-grow to 5cm after heavy grazing.
St Johns Wort ( <i>Hypericum perforatum</i> )	All States	2.4L	400mL	60mL	Apply to actively growing plants in the flowering to post flowering – procumbent stem stage (usually November – May). Re-treatment may be necessary to restrict seedling re-establishment.
Tall Sedge ( <i>Carex appressa</i> )	NSW, ACT, Vic only	1.6 or 3.2L	400 - 800mL	60 - 120mL	Apply to actively growing plants in flowering to post-flowering period (October – April). Use the lower rate only if the stand has been slashed prior to treatment. Re-treatment may be required. Symptoms may not be visible for up to 3 months. Use of CDA equipment is not recommended. 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 the water. Do not allow water to return to dry channels and drains within 4 days of application.
Yorkshire Fog ( <i>Holcus lanatus</i> )	All States	2.4L	600mL	90mL	Apply to actively growing plants when most have reached the early bud stage.

ANNUAL WEEDS – NON-CULTIVATED OPTIONS		RATE	CRITICAL COMMENTS (Read application check list before using)
WEEDS CONTROLLED (ALL STATES)			
Amaranth	<i>Amaranthus</i> spp.	Boom 1.6-2.4L/ha	Annual weeds may be sprayed anytime they are actively growing.
Annual Ryegrass	<i>Lolium rigidum</i>		
Barley Grass	<i>Horedeum leporinum</i>	Handgun 400-600mL per 100L	Use the lower rate on weeds up to 15cm tall. Increase to the higher rate for weeds over 15cm tall.
Barnyard Grass	<i>Echinochloa crus-galli</i>		
Brome Grass	<i>Bromus</i> spp.	Knapsack 60-80mL per 15L	Visible symptoms develop in 3-7 days, but complete desiccation may take 20-30 days under cool conditions.
Caltrop	<i>Tribulus terrestris</i>		
Canary Grass (Annual Phalaris)	<i>Phalaris</i> spp.	Refer to Application Section	Spectra Glyphosate 450 Herbicide does not provide residual weed control. Repeat treatments may be required to control later germinating weeds.
Capeweed	<i>Arctoteca calendula</i>		
Cereals	(Volunteer barley, oats, sorghum, wheat)		
Chickweed	<i>Stellaria media</i>		
Cobblers pegs	<i>Bidens pilosa</i>		
Deadnettle	<i>Lamium amplexicaule</i>		
Furmitory	<i>Fumaria officinalis</i>		
Ground Cherry	<i>F. muralis</i>		
Lesser Swinecress	<i>Physalis ixiocarpa</i>		
Liverseed grass	<i>Cocconopus didymus</i>		
Milkthistle (Sowthistle)	<i>Urochloa panicoides</i>		
Mintweed	<i>Sonchus oleraceus</i>		
Paradoxa Grass	<i>Salvia reflexa</i>		
Paterson's Curse	<i>Phalaris paradoxa</i>		
Pigweed	<i>Echium plantagineum</i>		
Potato Weed	<i>Portulaca oleracea</i>		
Saffron thistle	<i>Galinsoga parviflora</i>		
Silver Grass	<i>Carthamus lanatus</i>		
Spear Thistle	<i>Vulpis</i> spp.		
Spiny Burr Grass	<i>Cirsium vulgare</i>		
Spiny Emex (Doublegee)	<i>Cenchrus</i> spp.		
Spurge	<i>Emex australis</i>		
Sub-clover	<i>Euphorbia</i> spp.		
Thornapple	<i>Trifolium</i>		
Wild Mustard	<i>Subterraneum</i>		
Wild Oats	<i>Datura</i> spp.		
Wild Turnip	<i>Sisymbrium officinale</i>		
Winter Grass	<i>Avena</i> spp.		
Variagated Thistle	<i>Brassica tournefortii</i>		
	<i>Poa annua</i>		
	<i>Silybum marianum</i>		

**NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**  
**WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED**

#### GENERAL INSTRUCTIONS

Spectra Glyphosate 450 Herbicide is a non-volatile, non-selective water-soluble herbicide effective in the control of many annual and perennial weeds in a variety of situations. It is absorbed by plant foliage and green stems and is translocated through the plant from point of contact and into the root system. It is inactivated on contact with the soil. The effects of the herbicide may not be visible for 3-7 days for annual weeds or 2-3 weeks for perennial weeds depending on water quality, weather conditions, weed species and rate used. Spectra Glyphosate 450 Herbicide will control emerged weeds only and does not provide residual weed control. Ideally, weeds should be healthy and actively growing and, to obtain optimum results, should not have been recently sprayed with another herbicide. Use only clean, fresh water, preferably rainwater or local authority water to make up spray solutions as Glyphosate can be de-activated by soil particles and hard water containing calcium salts. Delay treatment of plants wet with dew or rain, if water droplets run-off when plants are disturbed. Rainfall occurring up to 6 hours after application may reduce effectiveness. Heavy rainfall within 2 hours of application may require re-treatment. No withholding period is required for this product, however to ensure herbicide absorption, grazing of treated areas should be delayed for at least one day after treatment for annual weeds and 7 days for perennial weeds.

#### CROP ESTABLISHMENT

Spectra Glyphosate 450 Herbicide is recommended for the control of emerged weeds prior to crop establishment. However, suitable cultivation and/or sowing procedures are required to provide seedbed conditions favourable for crop germination and development. Early spraying 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 1 day after spraying. However, in situations of heavy weed growth, sowing should be delayed until weed decay and soil conditions allow formation of a suitable seedbed. Incorporation or trashing of green or decaying vegetation and roots into seedbeds by cultivation/sowing may cause retarded crop emergence especially in cold and/or wet conditions. Vegetation may be reduced by grazing and/or cultivation but leaving trash on the surface. In marginal seedbed conditions take care to achieve the correct seeding depth and avoid using pre-emergence herbicides where label directions advise of retarded crop emergence.

#### MIXING INSTRUCTIONS

Ensure the spray tank is clean and free of any residue from previous spray products. Fill spray tank with half required volume of clean water. When ammonium sulphate is recommended, follow all directions on its label. Add measured amount of Spectra Glyphosate 450 and mix well before adding the remaining water. Add surfactant near end of filling process to minimise foaming. Maintain adequate agitation during application and use the mixture promptly.

#### COMPATIBILITY

When tank mixing with other products read and follow all label directions, restraints, plant-back periods, withholding periods and first aid and safety directions for the tank mix products.

#### Insecticides:

Spectra Glyphosate 450 Herbicide is compatible with the following insecticides, Chlorpyrifos, Dimethoate, Omethoate, Fenitrothion and Phosmet.

#### Herbicides:

2,4-D: For improved control of certain broadleaf weeds. Spectra Glyphosate 450 Herbicide may be tank mixed with 2,4-D Ester or 2,4-D Isopropylamine formations.

Chlorsulfuron: For knockdown and residual weed control in fallow/crop. Spectra Glyphosate 450 Herbicide may be tank mixed with Chlorsulfuron. Observe plant back restrictions for Chlorsulfuron.

Dicamba: For improved control of sub-clover, medics and sorrel. Spectra Glyphosate 450 Herbicide may be tank mixed with dicamba.

Metsulfuron: For knockdown weed control in certain situations. Follow all label instructions and observe plant back periods on the Metsulfuron label.

Oxyfluorfen: To improve knockdown and to increase the speed at which treated weeds develop visible signs of phototoxicity prior to planting winter cereals, add Oxyfluorfen at the rate of 75mL/ha to the recommended rate of this product.

Triazines: For knockdown and residual control, Spectra Glyphosate 450 Herbicide may be tank mixed with Atrazine and Simazine, liquid and granular formulation. Addition of Ammonium Sulphate is required to overcome antagonism. Use crystalline Ammonium Sulfate at 2% w.v (2kg/100L). Liquid formulations are also available, follow label directions.

#### Surfactant:

The addition of a 100% non-ionic surfactant at label rate is recommended with Spectra Glyphosate 450 Herbicide in all situations where the ratio of this product vol/ha is 2% or less of the total spray volume L/ha.

#### Resistant Weeds Warning

**GROUP M HERBICIDE**

Spectra Glyphosate 450 Herbicide is a member of the glycines group of herbicides. Its mode of action is to inhibit the EPSP synthase. For weed resistance management Spectra Glyphosate 450 Herbicide is a group M Herbicide.

Some naturally occurring weed biotypes resistant to Spectra Glyphosate 450 Herbicide and other Group M herbicides may exist through normal genetic variability in any weed population. Resistant individuals may eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by this product or any other Group M Herbicide.

Since the occurrence of resistant weeds is difficult to detect prior to use, Spectra Pacific (Australia) Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant weeds.

#### APPLICATION

##### Boom Equipment:

Application of this product in low spray volumes (25-100L/ha) is recommended. Fan nozzle equipment is recommended, using pressures in the range of 240-280 kPa. Boom height must be set to ensure double overlap of nozzle patterns at the top of the weed canopy.

##### Aerial Equipment:

Aerial application should only be in pasture or fallow crop situations prior to establishment of field or fodder crops or new pasture and for pre harvest application for sorghum crops.

**DO NOT** use in intensive cropping situations.

Use registered rates up to a maximum of 3.2L/ha and for Micronair and boom equipment apply in a minimum spray volume of at least 15L/ha.

Average droplet size should be 250-350 micron diameter with a swath width of 15-17 metres.

##### Application on hilly terrain

Increase water volume to 30-80L/ha with droplet size to at least 300 micron VMD on hilly terrain.

#### Application under hot conditions

In high temperatures and/or dry conditions, evaporation of spray droplets can occur prior to reaching the target species. When applying in temperatures above 25°C, increase water volume to at least 30L/ha and droplet size to at least 300 micron VMD.

Do not apply this product by aircraft when the temperature is above 30°C.

#### Hundgun and Knapsack

Adjust equipment to achieve an even spray pattern. Apply to ensure complete and uniform wetting of all foliage. For handgun equipment, a D6 spray tip and an operating pressure of 400-700 kPa is recommended.

#### EQUIPMENT MAINTENANCE AND USAGE

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminium, brass, copper, fibreglass or plastic lined container. This product or spray solutions of this product, react with galvanised or unlined steel (except stainless steel) containers and tanks, to produce hydrogen gas, which may form a highly combustible gas mixture. This gas can explode if exposed to an ignition source. Thoroughly rinse spray tanks, pumps, lines and nozzles with clean water after application, to prevent corrosion. Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove herbicide residue.

#### PROTECTION OF CROP, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT apply under meteorological conditions or from spraying equipment that could be expected to cause spray drift onto nearby susceptible plants, adjacent crops, croplands or pastures.

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

DO NOT contaminate dams, rivers or streams with the product or used container. DO NOT apply to weeds growing in or over water. DO NOT spray across open bodies of water.

#### STORAGE AND DISPOSAL

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

DO NOT store the product in galvanised steel or unlined steel containers, as the product may react to produce hydrogen gas, which can form a combustible gas mixture that can be flashed by ignition sources.

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

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

Empty containers and product should not be burnt.

**For refillable container (100L only):** Empty containers fully into application 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 soap and water. After each days use, wash gloves, face shield or goggles and contaminated clothing.

#### FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre Phone Australia 131126.

#### MATERIAL SAFETY DATA SHEET (MSDS)

Additional information is listed in the Material Safety Data Sheet, which can be obtained from the supplier.

#### CONDITIONS OF SALE

The use of this product is beyond the control of the Spectra Pacific (Australia) Pty Ltd. No warranty is expressed or implied regarding the suitability or efficacy for any purpose for which it is used by the buyer. Spectra Pacific (Australia) Pty Ltd accepts no responsibility for any consequences resulting from the use of this product. Spectra Pacific (Australia) Pty Ltd will not be held liable for any loss, injury or damage arising from the sale, supply or use of this product, whether through negligence or otherwise. No responsibility will be accepted for any consequences whatsoever resulting from the use of this product.

**For specialist advice in an emergency dial  
1800 033 111  
24 hours Australia wide.**