Product Name: SUNPHOSATE 680 WG HERBICIDE

APVMA Approval No: 68767/118879

Label Name:	SUNPHOSATE 680 WG HERBICIDE

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

Constituent Statements:	680 g/kg GLYPHOSATE PRESENT AS THE MONO-AMMONIUM SALT Also contain: 80 g/kg ETHOXYLATED TALLOW AMINE

Mode of Action:	GROUP M HERBICIDE

Statement of Claims:	For the control of many annual and perennial weeds in certain situations as per the Directions of Use Table.

Net Contents:	#(20x500g) #10kg *(10x500g) *5kg ^(2x10kg) ^20kg 10kg 12kg 13kg 15kg 1kg 20kg 25kg 500g 5kg

Restraints:	

Directions for Use:	This section contains file attachment.

Other Limitations:	

Withholding Periods:	WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED

Trade Advice:	

General Instructions:	GENERAL INSTRUCTIONS Mode of Action Sunphosate 680 WG Herbicide is a non-volatile, water-soluble product with non-selective herbicidal activity against many annual and perennial broadleaf weeds and grasses. Sunphosate 680 WG Herbicide may be used for weed control on agricultural land prior to planting any edible or non-edible crop, but not prior to transplanting tomatoes. Sunphosate 680 WG Herbicide is absorbed by plant foliage and green stems. It is inactivated immediately in the soil and does not provide residual weed control. Sunphosate 680 WG Herbicide moves throughout the plant from the point of contact to and into the root system. Visible effects on annual weeds take 3 to 7 days but on perennial weeds may not be obvious for 2 to 3 weeks or longer in some cases. Visible effects of control may be delayed by cool or cloudy weather at and following treatment. Sunphosate 680 WG Herbicide will control emerged weeds only and provides no residual weed control. Apply treatments to weeds that have at least one true leaf (broadleaf weeds) or two leaves (grasses) to provide an adequate surface area for herbicide uptake. CROP ESTABLISHMENT Sunphosate 680 WG Herbicide is recommended for the control of 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 and where there is only 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 satisfactory 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 correct seeding depth and avoid use of pre-emergence herbicides for which label directions advise risk of retarded crop emergence. MIXING For boom application, water volumes should not be less than 6 L per 1 kg of Sunphosate 680 WG Herbicide. Reduced results may occur if water containing soil is used, e.g., water from ponds and unlined ditches, or if hard water containing calcium salts is used. Do not mix, store or apply this product or spray solutions of this product in galvanised steel or unlined steel containers or spray tanks, since a highly flammable gas mixture may be formed. Use stainless steel, aluminium, brass, copper, fibreglass, plastic or plastic lined containers or spray tanks. Spray tanks, pumps, lines and nozzles should be thoroughly cleaned with clean water following application to prevent corrosion. Ensure the spray tank is free of any residue of previous spray materials. Use spray solutions promptly and certainly within five days, since gradual loss of activity will occur. Good agitation is required,

particularly under cold conditions, to ensure all of the Sunphosate 680 WG Herbicide dissolves when first added to the tank.

Full Agitation In Pre-Filled Spray Tank

- Fill the tank with half the required amount of clean water and set the pump on full agitation.
- Add the required amount of Sunphosate 680 WG Herbicide slowly to ensure that it is well dispersed throughout the tank and none collects on the bottom. Suggested rate is 10 kg over 2 to 3 minutes.
- Continue water addition and fully agitate until all Sunphosate 680 WG Herbicide is completely dissolved.

SURFACTANT ADDITION

Additional surfactant is not required except where the rate of Sunphosate 680 WG Herbicide is less than 6 g/L when applied by boom.
Do not mix with spraying oils, agricultural chemicals or other materials except as directed on the label.

TANK MIXTURES

Sunphosate 680 WG Herbicide may be tank-mixed with the following herbicides, insecticides and additives. Read and follow all label directions, restraints, plant-back periods, withholding periods, regional use restrictions and safety directions for the tank-mix products.

Mixing Instructions for All Tank Mixtures :

1. Fill the spray tank 1/3 to 1/2 full with clean water and start agitation.
2. Add Sunphosate 680 WG Herbicide. Mix thoroughly and continue water addition.
3. Where use of crystalline ammonium sulphate is recommended, wash 2% w/v (2 kg /100 L spray solution) through a top mesh-screen into the tank and mix thoroughly.
4. Add recommended herbicide/insecticide/additive to the spray tank and mix thoroughly.
5. Add surfactant near the end of the filling process to minimise foaming.
6. Always maintain adequate agitation during application and use the tank mixture promptly.

Tank Mixtures - Herbicides

Atrazine* flowable or granular (Agricultural uses only. DO NOT apply the tank-mix for control of Barnyard grass or liverseed grass), 2,4-D ester, dicamba, tribenuron-methyl, triclopyr, chlorsulfuron, simazine*flowable or granular, sulfometuron, trifluralin, pendimethalin, metsulfuron, triasulfuron, LVE MCPA and oxyfluorfen.
*Ammonium sulphate may improve the performance of tank mixtures of Sunphosate 680 WG Herbicide and atrazine or simazine. See directions below. The addition of oxyfluorfen at 75 mL/ha to recommended rates of Sunphosate 680 WG Herbicide prior to planting wheat or barley will improve knockdown and increase the speed at which treated weeds develop visible symptoms of phytotoxicity.

Tank Mixtures – Additives

Ammonium sulphate (crystalline or liquid 500 g/L).
Rate: 2 L or 1 kg/100 L spray solution.
The addition of crystalline ammonium sulphate to Sunphosate 680 WG Herbicide, when used to control annual weeds, MAY improve the performance of Sunphosate 680 WG Herbicide under adverse environmental conditions, such as cool, cloudy weather. Ammonium sulphate may also improve the performance of tank mixtures of Sunphosate 680 WG Herbicide and atrazine or simazine. Use only crystalline or liquid (500 g/L) ammonium sulphate, NOT prilled or granular forms. Ammonium sulphate may be corrosive to metal parts of the sprayer. Thoroughly flush tanks, pumps and nozzles with water after use.

Adjuvant: Non-ionic Organosilicone
Rate: 20 mL/10 L spray solution
Add when treating bracken (boom application).

Adjuvant: Non-ionic Surfactant

Rate: 20 mL/10 L spray solution.
Add when treating Annual ryegrass in spring (from the beginning of August to the end of October), Silver grass and perennial grasses – see Critical Comments section.

Tank Mixtures - Insecticides
This product is compatible with the following insecticides − dimethoate, phosmet, omethoate, chlorpyrifos, fenvalerate and emulsifiable concentrates of dimethoate and fenitrothion. Other insecticides have not been tested.

APPLICATION
Sunphosate 680 WG Herbicide is a non-selective translocated herbicide. Direct spray contact, or even slight drift, may cause severe injury or destruction of any growing crop or other desirable plants, including trees. Clean all equipment after use by thoroughly washing with water.

Boom Equipment
For broadacre application, a spray volume of 60 L/ha or less is recommended for optimum performance. Fan nozzle equipment is recommended using pressures in the range 240 − 280 kPa. Boom height must be set to ensure double overlap of nozzle patterns at the top of the weed canopy.

High Volume Application
(e.g. Knapsack/Handgun Equipment) The dilution rate is given in g/L, i.e., 5 g Sunphosate 680 WG Herbicide per 1 L of water. This is equal to 75 g Sunphosate 680 WG Herbicide per 15 L of water or 500 g per 100 L of water. 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 (Spraying Systems Australia P/L) or equivalent and an operating pressure of 400 − 700 kPa are recommended.
Aerial Equipment
Aerial equipment may be used to apply Sunphosate 680 WG Herbicide only in pasture or fallow situations prior to establishment of field crops, fodder crops or new pastures and for pre-harvest application to sorghum and cotton crops.
DO NOT use in intensive horticultural cropping areas. Use recommended rates of Sunphosate 680 WG Herbicide specified in this label up to a maximum limit of 2.1 kg/ha. For Micronair and boom equipment, apply in a minimum spray volume of at least 20 L/ha. Droplets with an average diameter size (VMD) of 250 − 350 micron diameter are recommended. Swath width should be 15 − 17 m. Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove herbicide residues.

Application on hilly terrain
As spraying height may vary, to maximise target contact, increase water volume to 30 − 80 L/ha and increase droplet size to at least 300 micron VMD.

Application under summer conditions
High temperatures and/or low relative humidity cause excessive evaporation of spray droplets, which may reduce results. When ambient temperature reaches 25 ºC, increase water volume to at least 30 L/ha and increase droplet size to at least 300 micron VMD. DO NOT apply Sunphosate 680 WG Herbicide by aircraft when ambient temperature is above 30 ºC.

AVOID DRIFT
DO NOT use with spraying equipment or under meteorological conditions that could be expected to cause spray drift onto nearby susceptible plants, adjacent crops, crop lands or pastures. Equipment settings which produce fine droplets (150 micron or less), winds over 8 km/h, inversion conditions, still air and hot dry days all contribute to drift.

APPLICATION CHECK LIST
- Do not treat weeds under poor or dormant growing conditions (such as occur in drought, waterlogging, disease, insect damage or following frosts) as reduced weed control may result. Reduced efficacy may also occur when treating weeds heavily covered with dust or silt.

	- Do not add additional surfactant or mix with any other agricultural chemicals, herbicides, oils or other materials except as specifically directed on this label. - Sunphosate 680 WG Herbicide is absorbed by plant foliage and green stems. Rainfall soon after application may wash the herbicide off the weeds, particularly if the weeds are not actively growing, under stress or conditions of low light intensity or darkness. - Delay treatment of plants wet with dew or rain if water droplets run off when plants are disturbed. - Do not disturb treated weeds by cultivation, sowing or grazing for 1 day after treatment of annual weeds and 7 days for perennial weeds to ensure herbicide absorption except where noted. - A withholding period for grazing stock is not required. However, it is recommended that grazing of treated plants be delayed (as recommended above) to ensure herbicide absorption. Certain plants such as Soursob, St John's Wort and Bracken, may be naturally toxic to stock. Where known toxic plants are present, grazing should be delayed until complete browning of treated plants has occurred.

Resistance Warning:	RESISTANT WEEDS WARNING GROUP M HERBICIDE Sunphosate 680 WG Herbicide is a member of the Glycines group of herbicides. Sunphosate 680 WG Herbicide has the inhibition of EPSP synthase mode of action. For weed resistance management. Sunphosate 680 WG Herbicide is a Group M herbicide. Some naturally occurring weed biotypes resistant to Sunphosate 680 WG 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 Sunphosate 680 WG Herbicide or other Group M herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Wynca Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant weeds.

Precautions:	

Protections:	PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS Avoid contact with foliage, green stems or fruit of crops, desirable plants and trees, since severe injury or destruction may result. DO NOT apply under weather conditions or from spraying equipment that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures. PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT DO NOT contaminate dams, rivers or streams with the product or used bags. DO NOT apply to weeds growing in or over water. DO NOT spray across open bodies of water.

Storage and Disposal:	STORAGE AND DISPOSAL Store in the closed, original bag in a dry, cool, well-ventilated area out of direct sunlight. Single-rinse or shake remainder into spray tank. Do not dispose of undiluted chemicals on site. Puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.

Safety Directions:	SAFETY DIRECTIONS Harmful if swallowed. Will damage eyes and will irritate the skin. Avoid contact with eyes and skin. When opening the bag and preparing the product for use, wear elbow-length PVC gloves and goggles. If product in eyes, wash it out immediately with water. After use and

	before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each days use, wash gloves, goggles and contaminated clothing.

First Aid Instructions:	FIRST AID If poisoning occurs, contact a doctor or the Poisons Information Centre. Phone Australia 13 11 26. If skin contact occurs, remove contaminated clothing and wash skin thoroughly. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

First Aid Warnings:	

DIRECTIONS FOR USE
For specific rates of application and complete directions for use, read this booklet.

GENERAL WEED CONTROL (All States)

SITUATION	**CRITICAL COMMENTS** READ APPLICATION CHECKLIST BEFORE USING
For general weed control in Domestic areas (Home garden), Commercial, Industrial and Public service areas, Agricultural buildings and other farm situations. For specific weeds refer to the appropriate Weeds Controlled tables.	■ For the control of many grasses and broadleaf weeds. **RATE: 5 g per litre of water** ■ Apply when weeds are actively growing. ■ Apply to ensure complete and uniform wetting of foliage. ■ Visible symptoms may take from 3 to 7 days to develop.

USE SITUATIONS (All States – except where noted)
For rates of application and weeds controlled, see **Weeds Controlled** tables.

SITUATION	**CRITICAL COMMENTS**
NON-AGRICULTURAL AREAS Around buildings, Commercial and Industrial areas, Domestic and Public service areas, Right-of-ways	Sunphosate 680 WG Herbicide does not provide residual weed control. For residual control of annual weeds, Sunphosate 680 WG Herbicide may be tank-mixed with certain residual herbicides. See **Tank Mixtures/Herbicides.**
AGRICULTURAL AREAS	Sunphosate 680 WG 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 (etc)	DO NOT apply to weeds growing in or over water. DO NOT spray across open bodies of water and DO NOT allow spray to enter water. DO NOT allow water to return to dry channels and drains within 4 days of application.
FORESTS	Sunphosate 680 WG Herbicide may be used prior to the establishment of nurseries, for site preparation prior to planting and amongst established trees using a directed or shielded spray. DO NOT allow spray or spray drift to contact foliage or green bark of desirable trees since severe injury may result.
COTTON *Shielded Sprayers* Qld and NSW only	**SHIELDED SPRAYERS:** Apply Sunphosate 680 WG Herbicide to weeds growing between crop rows using a shielded sprayer. Refer to the **Weeds Controlled** tables for rates of application. DO NOT apply to crops less than 20 cm high. DO NOT allow spray or spray drift to contact any part of the cotton plant as severe injury or destruction may result.

SITUATION	CRITICAL COMMENTS
TREE AND VINES CROPS Avocado, Banana, Blueberries, Citrus Fruit, Custard Apples, Duboisia, Figs-dessert, Guava, Kiwifruit, Litchi, Mango, Monstera – fruit, Nuts (including Almond, Pecan, Macadamia, Pistachio and Walnut), Olives, Pawpaw, Persimmons, Pome Fruit, Raspberries, Stone Fruit, Tea, Vineyards	Apply as a directed or as shielded spray. DO NOT apply as a spray near trees or vines less than three years old unless they are effectively shielded from spray and spray drift. **Citrus Fruit, Nuts, Olives, Pome Fruit & Vineyards:** DO NOT allow spray or spray drift to contact green bark or stems, canes, laterals, suckers, fresh wounds, foliage or fruits. **Tea:** Apply a maximum of 2 kg/ha by shielded boom or directed off-centre nozzle or 3 g/L by directed handgun or knapsack to avoid application to the crop. **All other crops:** DO NOT allow spray drift to contact any part of the plant including the trunk. **CAUTION:** Where split bark on kiwifruit and green stems on pawpaw occur, extreme care is required. For residual control of annual weeds, Sunphosate 680 WG Herbicide may be tank-mixed with compatible herbicides that are labelled for use in the above crops. See the **Tank Mixture/Herbicides** section for directions.
PASTURE	**DIRECTED (SPOT) APPLICATION:** Sunphosate 680 WG Herbicide is non-selective and may damage or kill any plant in the sprayed area. Re-treatment and/or pasture improvement may be necessary to restrict seedling re-establishment. **BOOM APPLICATION:** Sunphosate 680 WG Herbicide may be used to suppress or kill existing pasture species prior to re-seeding or establishment of other crops. Where spot application is undertaken, grazing stock need not be removed. **CAUTION:** Certain plants may be naturally toxic to stock. Where known toxic plants are present, DO NOT allow stock to graze until complete browning of treated plants has occurred.
ONIONS *Post-plant, pre-emergence application* Tas only	For control of annual weeds and suppression of perennial weeds, including rope twitch, apply Sunphosate 680 WG Herbicide at 530 g/ha – 1.6 kg/ha post-sowing and at least seven days before crop is due to emerge. DO NOT apply to emerging onion plants as severe injury will result. Use the lower rate on small, actively growing annual weeds. Increase to the higher rate for larger annual weeds (over 15 cm tall) and for suppression of perennial weeds.

ANNUAL WEEDS (Registration in all states/territories unless otherwise specified)

WEEDS CONTROLLED	BOOM (rate/ha)	HANDGUN/KNAPSACK	CRITICAL COMMENTS
Annual Ryegrass, Amaranth, Barley Grass, Barnyard Grass, Bent Grass [cd] Brome Grass, Caltrop, Canary Grass, Capeweed, Cereals, Chickweed, Cobbler's Peg, Deadnettle, Doublegee, Fumitory, Ground Cherry, Hedge Mustard, Hoary Cress [bcd] Lesser Swinecress, Liverseed Grass, Mintweed, Noogoora Burr [ab] Paradoxa Grass, Paterson's Curse, Pigweed, Potato Weed, Saffron Thistle, Silver Grass, Sowthistle Spear Thistle, Spiny Burrgrass, Spurge, Thornapple, Wild Oats, Wild Turnip, Winter Grass, Variegated Thistle	1 - 1.6 kg	3 - 5 g/L	Apply to weeds whenever they are not subject to stress due to drought or frost. Use higher rate on weeds over 15 cm in height or diameter or where dense weed cover limits spray coverage. Use higher spot spraying rate when applying less than 5 L of spray per 100 sqm. Sunphosate 680 WG Herbicide does not provide residual weed control. Repeat treatments may be necessary to control later-germinating weeds. For residual control of annual weeds, Sunphosate 680 WG Herbicide may be tank-mixed with certain residual herbicides. See **Tank Mixtures** section for directions.

PERENNIAL WEEDS (Registration in all states/territories unless otherwise specified)

WEEDS CONTROLLED	BOOM (rate/ha)	HANDGUN/KNAPSACK	CRITICAL COMMENTS
Artichoke Thistle [ce] African Lovegrass [bcf] Carpet Grass, Cocksfoot, Flatweed, Johnson Grass, Kikuyu, Nutgrass, Paspalum [bce] Phalaris, Plantain, Prairie Grass, Rhodes Grass, Rope Twitch [cd] *Tall Sedge [bcd] Yorkshire Fog	**1.5 kg – 3 kg**	**5 kg/L**	Control of established perennials is best obtained when plants are at the seedhead stage (early flower flatweed). In general, the best control of winter-growing perennials is obtained with application during winter−spring. The best control of summer-growing perennials is obtained with application late summer and autumn. For nutgrass in cultivated situations, apply sequential treatments when nutgrass has a minimum of 6 to 8 leaves. Use the higher rate in uncultivated situations. For Rhodes grass and rope twitch, use the higher boom rate only.
Blady Grass, [ab] Bracken, Couch, *Cumbungi, *Glyceria,[d] Guinea Grass, *Paragrass * See Dry Drains and Channel Use situation	4.5 kg	7 g/L	For bracken add 200 mL of 1000 g/L organosilicone adjuvant per100 L spray mix. The best control of couch in WA and SA is obtained with spring treatment. The most effective control of couch in the eastern states is obtained with summer and autumn treatments. In cultivated situations use sequential treatments of 2 − 4.5 L/ha for control.

WOODY WEEDS (Registration in all states/territories unless otherwise specified)

WEEDS CONTROLLED	HANDGUN/KNAPSACK	CRITICAL COMMENTS
Bamboo, Bitou Bush, [abcd] Boxthorn, Gorse, Groundsel Bush, [ab] Lantana[ab]	5 g/L	For gorse, add 200 mL of 1000 g/L organosilicone adjuvant per 100 L spray mix.
Blackberry, *Eucalyptus* spp. (seedlings < 2 m) [abcdf] Hawthorn, [bcdef] Pampas Grass, Sifton Bush,[ab] Willow (< 2 m) [abcdf]	5 - 7 g/L	For *Eucalyptus* spp., add 200 mL of 1000 g/L organosilicone adjuvant per100 L spray mix.

STATE REGISTRATION CODE	
a - Queensland	d - Tasmania
b – New South Wales	e – South Australia
c - Victoria	f – Western Australia

CONSERVATION TILLAGE

RESTRAINTS: To ensure herbicide absorption, 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.

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
SOUTHERN AUSTRALIA *Prior to sowing a crop or pasture with full soil disturbance by cultivation or sowing with a tyned implement* WA, SA, Vic and NSW only	Barley Grass, Brome Grass, Wild Oats, Volunteer Cereals	265 − 530 g pre-tillering 530 − 660 g post tillering	Treat only actively growing weeds not under stress from low moisture, frost, cold, disease or waterlogging. If heavy grazing has occurred, allow re-growth to 6 – 8 cm before spraying and use the higher rate. **Rate Selection:** Increase to higher rates late in season or when treating under cold/overcast conditions.
	Annual Phalaris (Canary Grass), Annual Ryegrass, Silver Grass, Winter Grass	530 − 660 g pre-tillering 660 − 790 g post tillering	

CONSERVATION TILLAGE *continued*

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
SOUTHERN AUSTRALIA *Prior to sowing a crop or pasture with full soil disturbance by cultivation or sowing with a tyned implement* WA, SA, Vic and NSW only	Calomba Daisy, Capeweed, Doublegee/Spiny Emex	265 − 530 g less than 8 cm diam/height 530 − 790 g greater than 8 cm diam/height	Full disturbance with cultivation or sowing with a tyned implement may start 1 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 diam/height), cultivation or sowing may start 6 hours after treatment and should occur within 21 days. **Crop Establishment:** Sowing should not proceed until conditions allow the formation of a satisfactory seedbed. See **Crop Establishment** section for directions. **Annual Ryegrass, Silver Grass and Perennial Grasses:** Addition of a non-ionic surfactant, 200 mL/100L spray solution, may improve control. When treating dense infestation of silver grass, use low volume nozzles (e.g., SS11001, Hardi. No.10); a spray volume of 70 mL/ha or more is recommended to improve plant spray coverage. **Tank Mixtures:** For improved control of clover, add dicamba. Read and follow all label directions, restraints, plant-back periods, withholding periods, regional use restrictions and safety directions for the tank-mix products. See **Tank Mixtures** for directions. **Perennial Weeds:** For perennial phalaris, soursob, skeleton weed and sorrel, Sunphosate 680 WG Herbicide will provide knockdown, seasonal suppression and reduction in treated plant numbers.
	Amsinckia, Fumitory, Paterson's Curse, Saffron Thistle, Scotch Thistle, Spear Thistle, Variegated Thistle, Volunteer Lupins, Wild Turnip	530 − 660 g less than 12 cm diam/height 660 − 790 g greater than 12 cm diam/height	
	Dock (seedling)	530 − 790 g	
	Perennial Phalaris, Sorrel, Sub Clover, Soursob	790 g	
	Skeleton Weed *fully emerged rosettes* NSW only		
	All the above weeds TAS only	790 g − 1.6 kg	**Tasmania** Use 790 g/ha on annual weeds. Increase to 1.6 kg/ha where perennial weeds are being treated. To control white clover and improve control of sorrel and dock, add 1 L/ha dicamba (200 g/L). Observe label directions and plant-back periods

CONSERVATION TILLAGE *continued*

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
SOUTHERN AUSTRALIA *To commence a fallow* NSW, Vic, SA, WA only	Barley Grass, Volunteer Cereals, Wild Oats	530 – 790 g	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:** Use the lower rate on young weeds or where cultivation is to follow within 21 days. Increase to the higher rate where grasses reach full tillering or where broadleaf weeds commence stem elongation/budding. **Annual Ryegrass, Silver Grass and Perennial Grasses:** Addition of a non-ionic surfactant, 200 mL/100 L spray solution, may improve control. When treating dense infestation of silver grass, use low volume nozzles (e.g., SS11001, Hardi. No. 10); a spray volume of 70 mL/ha or more is recommended to improve plant spray coverage. **Hoary Cress:** Treat from late rosette to early flowering. **Soursob:** Treat at tuber exhaustion. **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 full control. For improved control, use in conjuction with cultivation. **Tank Mixtures:** For improved control of clover, add dicamba. Read and follow all label directions, restrains, plant-back periods, withholding periods, regional use restrictions and safety directions for the tank-mix products. See **Tank Mixtures** section for directions.
	Annual Ryegrass, Brome Grass, Capeweed, Paterson's Curse, Saffron Thistle, Scotch Thistle, Silver Grass, Spear Thistle, Wild Mustard, Wild Radish, Wild Turnip	790 g – 1 kg	
	Hoary Cress, Soursob	790 g	
	Couch	790 g – 1.6 kg	
	All the above weeds TAS only	790 g – 1.6 kg	**Tasmania:** Use 790 g/ha on annual weeds. Increase to 1.6 kg/ha where perennial weeds are being treated. To control white clover and improve control of sorrel and dock, add 1 L/ha dicamba (200 g/L). Observe label directions and plant-back periods.

CONSERVATION TILLAGE *(continued)*

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
Pasture topping *for Annual Grass, Capeweed and Calomba Daisy seed set reduction*	Barley Grass, Brome Grass, Capeweed, Silver Grass	160 – 240 g	Remove stock prior to treatment to allow even regrowth. Apply to capeweed and annual ryegrass at the FLOWERING stage. For other grasses, apply from HEAD to MILKY DOUGH stages. Use higher rate for dense infestations or where annual ryegrass is present. Apply before signs of plants 'haying off'. Reduction in pasture legume population may occur as a result of treatment. DO NOT apply to clover or medic crops intended for seed or hay.
	Annual Ryegrass, Calomba Daisy	240 g	
Seed-head suppression of Perennial Grasses	Bent Grass	200 – 330 g	**Timing:** Treat from late October to late November. Apply before seed heads have emerged. Use the higher rate where growth is excessive and renovation is intended the following autumn. **Follow up management:** Graze hard after spraying.
Poa Tussock infested pasture *For reduction of ground cover allowing pasture renovation*	Most annual weeds and suppression of Poa Tussock	1.6 – 2.1 kg	**Timing:** Graze heavily, then remove at least 14 days before spraying to allow fresh regrowth. Apply to actively growing plants after the autumn break but before heavy frosts (March – May). **Application:** Increasing to the higher rate may give more effective reductions. If aerial spraying, see the **Aerial Equipment** section. **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.

CONSERVATION TILLAGE *(continued)*

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
NORTHERN AUSTRALIA *In fallow or prior to planting a crop.* Qld, NSW only	Annual Phalaris (Canary Grass), Barley Grass, Volunteer Cereals, Wild Oats	265 – 530 g	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 cm – 8 cm before spraying and use the higher rate. Note that under summer (hot) conditions, dense infestations of Barnyard grass and Liverseed grass may require follow up treatment for complete control. Enhanced control 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 rates on young weeds; increase to the higher rate where grasses reach full tillering or where broadleaf weeds reach stem elongation/budding. At more advanced stages of growth certain broadleaf weeds require a higher rate range or addition of 2,4-D ester. **Crop Establishment:** Sowing should not proceed until conditions allow the formation of a satisfactory seedbed. See Crop Establishment for directions. **Tank Mixtures:** Read and follow all label directions, restraints plant back and withholding periods, regional use restrictions for the tank mix products. DO NOT tank mix with atrazine when spraying Barnyard grass or Liverseed grass. **Aerial Application:** For instructions on aerial application under hot conditions see Aerial Equipment. DO NOT apply by aircraft when ambient temperature is above 30ºC.
	Barnyard Grass, Button Grass, Columbus Grass (seedling), Liverseed Grass, Native Millet, Stinkgrass (Lovegrass), Volunteer Sorghum	530 g – 1 kg	
	Australian Bluebell (Qld only), Cudweed, Fumitory, Mexican Poppy, New Zealand Spinach, Saffron Thistle, Spear Thistle, Spurge, Stinking Goosefoot	530 – 790 g	
	Black (giant) Pigweed, Boggabri Weed, Caltrop (Yellow Vine), Indian Hedge Mustard, Mintweed, Summer Grass	265 − 530 g *up to 5 true leaves or 3 cm diam/height* 530 − 790 g *greater than 5 true leaves or 3 cm diam/height*	
	African Turnip Weed, Deadnettle, Sweet Summer Grass, Variegated Thistle, Volunteer Sunflower	400 − 530 g *up to 5 true leaves or 3 cm diam/height* 530 g − 1 kg *greater than 5 true leaves or 3 cm diam/height*	

CONSERVATION TILLAGE *(continued)*

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
NORTHERN AUSTRALIA *In fallow or prior to planting a crop.* Qld, NSW only	Annual Ground Cherry (Gooseberry), Bladder Ketmia, Camel Melon, False Castor Oil Plant (Thornapple), Noogoora Burr, Turnip Weed, Wild Lettuce, Wild Turnip, Wireweed	530 – 790 g *prior to stem elongation/budding, afterwards use* 265 – 790 g plus 500 – 700 mL 2,4-D ester (800 g/L) or 790 g – 1 kg	*Continued from above*
	Pigweed	530 g – 1 kg	Use higher rates on larger weeds. Control of pigweed over a wide range of growth stages can be obtained by the addition of metsulfuron methyl (600 g/kg). Observe re-cropping intervals.
	Sowthistle, Milkthistle	400 – 530 g *rosettes up to 3 cm dia* 530 g – 1 kg *greater than 3 cm dia*	Previously grazed plants may be difficult to control without allowing full recovery.
	Couch	790 g − 1.6 kg	Use the higher rate for dense infestations. Apply sequential treatment during summer and autumn, with autumn being most effective. Repeat applications will be required for full control. For improved control use in conjunction with cultivation.
	Johnson Grass	1 − 1.6 kg	Use the higher rate on plants approaching seedhead stage. Apply to plants with a minimum of 30 cm new growth. Sequential treatments will be required for long-term control.
	Nutgrass	1.6 kg + 1.6 kg	Make first application to actively growing plants when at least 20% have reached the head stage (normally about February). After allowing maximum re-emergence 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 program.

CONSERVATION TILLAGE *(continued)*

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
SORGHUM CONTROL *(pre-harvest)* Qld, NSW only	Sorghum *(grain-sorghum)* DO NOT apply to varieties intended for seed production or varieties prone to lodging	790 g – 1 kg	Apply when grain moisture is less than 25%. Pre-harvest treatments may increase the likelihood of crop lodging. Apply treatments to previously slashed/grazed stubble when at least 20cm of new growth has occurred. **Caution:** Sorghum may be naturally toxic to stock.
SORGHUM CONTROL *(post-harvest)* Qld, NSW only	Sorghum stubble *(grain-sorghum)*	530 – 790 g *for fresh regrowth from slashed stubble.* 790 g – 1 kg *for standing stubble if sufficiently green and for fresh spring regrowth.*	
SUGARCANE *Ratoon Spray out* Qld, NSW only	Sugarcane ratoon regrowth	2.1 − 4.8 kg	APPLY UNDER GOOD GROWING CONDITIONS ONLY to actively growing rations 60 − 120 cm tall. DO NOT apply if plants are under stress from low moisture or waterlogging. Use the lower rate for suppression or where cultivation is to follow. Use the higher rate for control.
RICE *Direct drilling* NSW only	Annual Phalaris (Canary Grass), Annual Ryegrass, Barley Grass, Burr Medic, Sub Clover, Winter Grass	530 – 660 g	Sunphosate 680 WG Herbicide is less effective in drought-stressed plants. Under drought conditions, a pre-watering prior to spraying is recommended. In grazed situations, if heavy grazing has occurred allow regrowth to 6 − 8 cm before spraying. **Annual Ryegrass:** Add a non-ionic surfactant at 200 mL/100 L of spray solution and where dominant, use the higher rate. **Sowing:** Direct drilling may take place 1−14 days after spraying. Sunphosate 680 WG Herbicide does not provide residual weed control. Permanent water and approved selective herbicides should be used to provide continuing control of weeds

CONSERVATION TILLAGE *(continued)*

SITUATION	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
COTTON *(pre-harvest)* Do not use on crops intended for seed production Qld, NSW only	Bathurst Burr, Noogoora Burr, Winter Annual Weeds including Sowthistle/Milkthistle	660 g − 1.3 kg	Use the lower rate on light infestations of small weeds, in which 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. Apply alone or in tank mixtures with thidiazuron or dimethipin (600 g/L). Apply when at least 60% of bolls are open and immature bolls cannot be easily cut with a knife. When a leafy canopy limits spray coverage, reduced weed control can be expected. For best results under these conditions, delay application until canopy re-opens following initial conditioning treatment. Where control of nutgrass and Noogoora burr is required, treatments should be applied prior to the onset of frosts. When tank-mixed with defoliants, 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.
	Nutgrass seasonal suppression only	1.3 kg	