



CAUTION

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

Roundup®

Herbicide by Monsanto

ACTIVE CONSTITUENT: 360 g/L GLYPHOSATE (present as the isopropylamine salt)

GROUP **M** HERBICIDE

Water soluble herbicide for non-selective control of many annual and perennial weeds in certain situations.

READ COMPLETE DIRECTIONS FOR USE BEFORE USING THIS PRODUCT.

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APVMA Approval No.: 31393/ 52085

DIRECTIONS FOR USE

GENERAL WEED CONTROL ALL STATES	
SITUATION	CRITICAL COMMENTS Read Application Checklist before using
For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations. For specific weeds, brush and woody weeds or unwanted trees, refer to the appropriate Weeds Controlled table.	For the control of many grasses and broadleaf weeds. RATE: 10mL 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 Read Application Checklist before using
NON-AGRICULTURAL AREAS Around buildings, Commercial and Industrial areas, Domestic and Public Service areas, Right-of-ways.	Roundup does not provide residual weed control. For residual control of annual weeds, Roundup may be tank mixed with certain residual herbicides. See Tank Mixtures/Compatibility.
AGRICULTURAL AREAS	Roundup 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.
AQUATIC AREAS Dry drains and channels, dry margins of dams, lakes and stream 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.
FORESTS	Roundup may be used prior to establishment of nurseries, for site preparation prior to planting and amongst established trees using a directed or shielded spray, or using selective wiper equipment. DO NOT allow wiper surface to contact any part of the tree. DO NOT allow spray or spray drift to contact foliage or green bark of desirable trees, since severe injury may result.
PEANUTS, COTTON, SOYBEANS, SUGARCANE, NAVY BEANS and CHICKPEAS Application using selective equipment QLD, NSW only	Wiper Equipment Apply Roundup to weeds growing between crop rows or to weeds growing at least 15 cm above the crop. DO NOT allow wiper to contact crop and ensure operating conditions do not allow solution to drip from applicator since severe injury may result. Refer to Wiper Equipment in the Application section of the label. Shielded Sprayers (Cotton only) Apply Roundup to weeds growing between crop rows using a shielded sprayer. Refer to the Weeds Controlled tables for rates of application. DO NOT apply in crops less than 20cm high. DO NOT allow spray or spray drift to contact any part of the cotton plant as severe injury or destruction may result.

USE SITUATIONS	ALL STATES (except where noted) For rates of application and weeds controlled, see Weeds Controlled tables
SITUATION	CRITICAL COMMENTS Read Application Checklist before using
TREE AND VINE 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 shielded spray or using wiper equipment. DO NOT apply as a spray near trees or vines less than 3 years old unless they are effectively shielded from spray and spray drift. DO NOT allow wiper surface to contact any part of the tree, vine or palm. Avoid painting out stumps with this product as injury resulting from root grafting may occur in adjacent trees. 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 fruit. Tea Apply a maximum of 4L/ha by shielded boom or directed off-centre nozzle or 0.5L/100L by directed handgun or knapsack to avoid application to the crop. All other crops DO NOT allow spray or 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, Roundup may be tank mixed with compatible herbicides which are labelled for use in the above crops. See Tank Mixtures/Compatibility for directions.
SUGARCANE RATOON SPRAYOUT For control of sugar cane, ratoon regrowth NSW and QLD only	Apply under good growing conditions only to actively growing ratoons 60-120cm tall. DO NOT apply if plants are under stress from low moisture or waterlogging. RATE 4-9L/ha Use the lower rate for suppression or where cultivation is to follow. Use the higher rate for control.
PASTURE	DIRECTED (SPOT) APPLICATION Roundup 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. SELECTIVE APPLICATION See Wiper Equipment . BOOM APPLICATION Roundup may be used to suppress or kill existing pasture species prior to re-seeding or establishment of other crops. Where spot application (spray or wiper) 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 Roundup at 1-3L/ha post-sowing and at least 7 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 15cm tall) and for suppression of perennial weeds.
COTTON PRE-HARVEST For control of Bathurst Burr, Nogoora burr, Winter annual weeds including Sowthistle, Milk thistle and seasonal suppression of Nutgrass NSW and QLD only	DO NOT APPLY TO CROPS INTENDED FOR SEED PRODUCTION. 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. Where a leafy crop 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 or Nogoora 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 label directions for the tank mix products. RATE: Apply 2.5L/ha for Nutgrass control and 1.25-2.5L/ha for the other weeds. Use the lower rate on light infestations of small weeds, when 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.

ANNUAL WEEDS	Non-Cultivated situations	
WEEDS CONTROLLED (All States)	RATE	CRITICAL COMMENTS Read Application Checklist before using
Amaranth, Barley grass, Barnyard grass, Brome grass, Caltrop, Canary grass, (Annual phalaris), Capeweed, Cereals, Chickweed, Cobbler's pegs, Deadnettle, Doublegee, Fumitory, Ground cherry, Hedge mustard, Lesser Swinecress, Liverseed grass, Mintweed, Noogoora burr, Paradoxa grass, Paterson's Curse, Pigweed, Potato weed, Ryegrass, Saffron thistle, Silver grass, Sowthistle, Spear thistle, Spiny burgrass, Spurge, Sub. Clover, Thornapple, Wild mustard, Wild oats, Wild turnip, Winter grass	BOOM: 2-3L/ha HANDGUN: 500-700mL/100L KNAPSACK: 75-100mL/15L WIPER EQUIPMENT and CONTROLLED DROPLET APPLICATORS: See APPLICATION section	Annual weeds may be sprayed anytime they are actively growing. Use the lower rate on weeds up to 15cm tall; increase to the higher rate where weeds are over 15cm tall. Visible symptoms develop in 3-7 days but complete desiccation may take 20-30 days under cool conditions. Roundup does not provide residual weed control. Repeat treatments may be necessary to control later germinating weeds. For residual control of annual weeds, Roundup may be tank mixed with certain residual herbicides. See Tank Mixtures/Compatibility for directions. For aquatic weeds refer to critical comments for aquatic areas to minimise the entry of spray into water.

PERENNIAL WEEDS			
WEEDS CONTROLLED	Boom	Handgun/ Knapsack	CRITICAL COMMENTS Read Application Checklist before using
Bamboo	-	10mL/1L	Apply to actively growing foliage and/or regrowth which is between 1m and 2m tall. Cut Stump: Dilute 1:6 ie. mix 1 part Roundup plus 6 parts water. Cut stems back to 20cm high, pour mixture down hollow stem or wet the cut.
Bent grass	2.5L/ha	5mL/1L	Apply to actively growing plants in late Spring when they have some seedhead development, but before Summer moisture stress. Follow-up management is required. Full disturbance with a tined implement should follow 10-21 days after spraying. Then follow with a Summer crop and/or re-seeded pasture or crop in the following Autumn. VIC and TAS only
Blady grass	9L/ha	13mL/1L	Apply to actively growing plants at the early head stage. Qld and NSW only

PERENNIAL WEEDS			
WEEDS CONTROLLED	Boom	Handgun/ Knapsack	CRITICAL COMMENTS Read Application Checklist before using
Bracken	9L/ha	15mL/1L	For boom application, always add PULSE®, (200mL/100L spray) otherwise reduced results will occur. Addition of PULSE® (200mL/100L spray) may improve control with handgun application. Wiper application is recommended, see Wiper Equipment . Double pass application is required for pipewick equipment. Bracken should be slashed in Winter/Spring prior to treatment. Apply Roundup in March/May 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.
Brown beetle grass	3L/ha	5mL/1L	Apply to actively growing plants. DO NOT apply to partially submerged plants. NSW only
Carpet grass	3L/ha	5mL/1L	Apply to actively growing plants at the early head stage.
Cocksfoot	3L/ha	7mL/1L	Apply to actively growing plants at the early head stage.
Couch	9L/ha	13mL/1L	Apply to actively growing plants when most have reached the early head stage. In SA and WA apply to active plants during Oct/Nov for best results.
Cumbungi	9L/ha	13mL/1L	Apply to actively growing plants at the early head to full head stage (Summer/Autumn). Re-treatment may be required to restrict seedling re-establishment. Wiper application is recommended (not in Tasmania) See Wiper Equipment .
Flatweed (Cat's ear)	3L/ha	7mL/1L	Apply to fully developed rosettes at the early flower stage
Glyceria	6L/ha	10mL/1L	Apply to actively growing plants at the mature head stage in late Summer/Autumn. Add a non-ionic surfactant (50-60% ai) at 200-250mL/100L. Tas only
Guinea grass	9L/ha	13mL/1L	Apply to actively growing plants at the early head stage. For wiper application, see Wiper Equipment .
Hoary cress	1.5/ha	5mL/1L	For maximum long term reduction, apply from late July to September when plants are in late rosette to flowering stage. Plants should be actively growing and not under stress of drought, frost or waterlogging. Application may be integrated with long fallow. Cultivation may start 7 days after spraying. Wiper application may be used where sufficient stem elongation occurs, see Wiper Equipment . In Tasmania addition of a non-ionic surfactant (50-60%ai) at 200-250mL/100L spray, is recommended. NSW, Vic and Tas only
Johnson grass Kangaroo grass Kikuyu grass	6L/ha	10mL/1L	Apply to actively growing plants at the early head stage. For wiper application on Johnson grass, off-type and volunteer sorghum, see Wiper Equipment .
Lovegrass, African	6L/ha	10mL/1L	Apply to actively growing plants. Re-treatment and/or pasture improvement is recommended to restrict seedling re-establishment. NSW, Vic and WA only
Nutgrass <i>Cyperus rotundus</i>	6L/ha	10mL/1L	Non cultivated Situations: Apply to actively growing plants in late Summer/Autumn (Feb/Apr) when at least 20% have reached the head stage.
Does not refer to other Cyperus Species which may be locally known as nutgrass	3L/ha + 3L/ha	7mL/1L + 7mL/1L	Arable Land: Make first application to actively growing plants when at least 20% have reached the head stage (normally about Feb.). After allowing maximum re-emergence to occur (normally in 6-8 weeks) it is essential to make a second application. NOTE In arable land Nutgrass may rapidly regenerate from isolated nuts. Follow-up treatments should be made as part of a Nutgrass control program.
Pampas grass	-	10mL/1L or 13mL/1L	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, large plants may be cut or burnt prior to spraying, but first allow re-growth to reach 1m. Use the higher rate on plants over 1m high. Low Volume Application Use 1:9 (10%) mixture of Roundup: Water. Apply 2 x 2mL per 0.5m height. Ensure spray contacts all foliage.
Paragrass	9L/ha	13mL/1L	Apply to actively growing plants at the early head stage.
Paspalum	6L/ha	10mL/1L	Apply to actively growing plants at the early head stage.
Pellitory	-	10mL/1L	Apply to actively growing plants prior to seeding. Repeat applications may be necessary to control seedlings and/or re-growth. NSW only
Phalaris	3-6L/ha	5-10mL/1L	Apply to actively growing plants during Winter-Spring. Use the lower rate where only knockdown is required eg. prior to burning of firebreaks. Burning can usually start 14-21 days after spraying. For long term control increase to the higher rate. NSW, Vic and SA only
Phragmites, Common Reed	9L/ha	13mL/1L	Apply to actively growing, fully developed plants approaching the early head stage. Visible symptoms of control may be slow to develop and may not be fully apparent until the next season. For wiper application, see Wiper Equipment .
Plantains	3L/ha	7mL/1L	Apply to actively growing plants at the early head stage. Symptoms may be slow to develop.
Prairie grass Qld Blue grass Red-leg grass Rhodes grass	6L/ha	10mL/1L	Apply to actively growing plants at the early head stage.
Rope Twitch	6L/ha	10mL/1L	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 until the time of spraying. Vic and Tas only
Rushes	-	-	Apply by wiper equipment to actively growing plants. Where there is a large proportion of dead foliage, pre-slashing is recommended. Allow adequate re-growth before treatment. See Wiper Equipment
Sedge, tall	2 or 4L/ha	5-10mL/1L	Apply to actively growing plants in flowering to post-flowering period (Oct/April). Use the lower rate only if the stand has been slashed prior to treatment. Re-treatment may be necessary. Visible symptoms may not be fully apparent for up to 3 months. Use of CDA equipment is not recommended. NSW, Vic and Tas only
Silverleaf nightshade	-	20mL/1L	Use ONLY under good soil moisture conditions. Apply to actively growing plants at the late flowering to berry stage. Repeat spraying will be necessary to restrict re-growth and seedling re-establishment. NSW only
Sorrel	6L/ha	10mL/1L	Apply to actively growing plants when most have reached the early bud stage.

PERENNIAL WEEDS			
WEEDS CONTROLLED	Boom	Handgun/ Knapsack	CRITICAL COMMENTS Read Application Checklist before using
Soursob	1.5L/ha	5mL/1L	For maximum long term reduction apply from late July to early September but before natural plant yellowing (senescence) occurs. Soursob should be actively growing and not under stress of drought or waterlogging. If heavy frosting has occurred, allow recovery before spraying. If heavy grazing has occurred, allow recovery of foliage to at least 5cm before spraying. NSW, Vic, SA, Tas and WA only
St John's Wort	3L/ha	5mL/1L	Apply to actively growing plants in the flowering to post-flowering, procumbent stem stage (generally November/May). Re-treatment, or oversowing with improved pasture species may be necessary to restrict seedling re-establishment.
Thistle, Artichoke	3L/ha	5mL/1L	Apply at the rosette-early head stage. Vic and SA only
Thistle, Californian	3L/ha	10mL/1L	Apply to actively growing plants at the flowering stage. To ensure maximum shoot emergence the area should NOT be cultivated prior to spraying. Re-treatment and/or pasture improvement may be necessary to restrict seedling re-establishment. Vic and Tas only
Water Couch	9L/ha	13mL/1L	Apply to actively growing plants in late Summer-Autumn (Feb/Mar). DO NOT treat after March because of the onset of Winter dormancy. Full results may not be visible until the following spring.
Yorkshire Fog	3L/ha	7mL/1L	Apply to actively growing plants at the early head stage.

UNWANTED TREES Roundup may be used for control of many tree species. Ensure trees are actively growing at time of treatment and not under stress of drought, waterlogging or cold. Qld, NSW, Vic, WA, Tas and NT only.				
METHOD	UNWANTED TREES	TREE SIZE	Mixture product : water	CRITICAL COMMENTS
Cut Stump	Jarraah, Longleaf box, Marri, Messmate stringybark, Narrowleaf peppermint	0-10cm basal dia.	1:15	Dilute Roundup with water in the recommended ratio. Cut tree close to ground and immediately wet stump surface thoroughly using splatter gun, spray, swab or brush. Remove any branches on the stump and treat cut surface.
	Privet, Rhus	0-30cm basal dia.	1:1	
Foliar Application: Low Volume (Gas gun or Splatter gun)	Bullich, Marri, Jarraah	0-1.5m height	1:15 Add PULSE® at 200mL/100L spray mixture	Dilute Roundup in the recommended ratio. Calibrate splatter gun to apply 5mL of Roundup solution per dose, as a fine spray. Apply 5mL per 0.5m tree height. Ensure spray contacts all foliage.
	Eucalyptus spp.	0-1.5m height	1:5 Add PULSE at 200mL/100L spray mixture	
Foliar Application: High Volume (Knapsack or Handgun)	Eucalyptus spp., Willows	0-2.0m height	1.0-1.3L/100L For Eucalyptus Add PULSE at 200mL/100L spray mixture	Spray to wet all foliage. Use the higher rate for trees 1.0 to 2.0m high.
Stem Injection	Flooded gum, Ghost gum, Gum topped bloodwood, Messmate stringybark, Narrowleaf ironbark, Pink bloodwood, Poplar box, Privet, Rhus, Silverleaf ironbark, Silvertop ash [Ironbark], Spotted gum, Swamp mahogany, White mahogany, Willows	Basal dia. 0-25cm	Undiluted 1mL/cut	Use an applicator calibrated to deliver 1 or 2mL per cut. Make 5cm cuts at an oblique angle to penetrate the sapwood beneath the bark. Space cuts at 13cm centres around tree circumference below any branching, otherwise remove or treat all branches below cuts. On multiple trunk trees ensure each trunk is treated.
		Basal dia. 25-60cm	Undiluted 2mL/cut	
	Camphor laurel	Basal dia. 0-25cm Basal dia. over 25cm to 60cm	Mixture 1:1 2mL/cut Undiluted 2mL/cut	

BRUSH AND WOODY WEEDS			
WEEDS CONTROLLED	Handgun or Knapsack	Low Volume Product : Water	CRITICAL COMMENTS Read Application Checklist before using
Bitou bush Boneseed	5 or 10mL/L	1: 29 or 1:19	Apply to actively growing plants. Spray to wet all foliage. Best results are achieved when treated at peak flowering during Winter. DO NOT apply during periods of drought stress. Use the higher rate on bushes over 1.5m. Further treatment may be necessary to restrict seedling re-establishment. Low Volume Application (eg. Gas gun and Splatter gun). Ensure spray contacts all foliage. Use the higher rate (1:19) on bushes over 1.5m high. Qld, NSW, Vic and Tas only
Boxthorn, African	7-10mL/L	-	Use the lower rate for young bushes; increase to the higher rate for large, mature bushes. Spray to wet all foliage. DO NOT spray during hot, dry Summer periods. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. Use of CDA equipment is not recommended.
Blackberry	10-13mL/L	-	Apply from flowering to leaf fall (generally Jan-May). Plants should not be under stress of high temperature, drought or frost. Spray to wet all foliage. Use the higher rate on old, dense infestations over 2m high. Visible symptoms may not be fully apparent until the next season. Burning (after complete brownout) pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. Use of CDA equipment is not recommended. In Tasmania, DO NOT treat bushes bearing mature fruit.
Crofton weed	5mL/L	-	Apply to actively growing plants with full foliage. Spray to wet all foliage. Further treatment and/or pasture improvement are recommended to restrict seedling re-establishment. Qld, and NSW only

BRUSH AND WOODY WEEDS			
WEEDS CONTROLLED	Handgun or Knapsack	Low Volume Product : Water	CRITICAL COMMENTS Read Application Checklist before using
Gorse (Furze)	10mL/L plus PULSE 2mL/L	-	Apply all year round, but only to actively growing plants. Always add PULSE, otherwise reduced results will occur. 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	7-10mL/L	1:9	Apply to actively growing plants. DO NOT apply during Winter, nor during periods of Summer drought stress. Use the higher rate on bushes over 2m tall. Spray to wet all foliage. Further treatment and/or pasture improvement are recommended to control seedlings and/or regrowth. Low Volume Application (eg. Splatter Gun and Gas Gun): Use 1:9 (10%) mixture of Roundup: water. Apply 2 x 2mL dose per 0.5m bush height. Ensure spray contacts all foliage. Use of CDA equipment is not recommended. Qld and NSW only
Hawthorn	10-13mL/L	1:9	Apply to actively growing plants from flowering to leaf fall. Spray to wet all foliage. Use the higher rate on bushes over 2m tall. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. Low Volume Application (eg. Splatter Gun and Gas Gun): Use 1:9 (10%) mixture of Roundup: water. Apply 2 x 5mL dose per 0.5m bush height. Ensure spray contacts all foliage. NSW, Vic, SA, WA and Tas only
Lantana	10mL/L	1:9	Apply to actively growing plants with full foliage. Ensure complete treatment of 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. Addition of PULSE (200mL/100L) may improve control. Low Volume Application (eg. Splatter Gun and Gas Gun): Apply 2 x 2mL dose per 0.5m bush height. Ensure spray contacts all foliage. Sprinkler Sprayer Apply 6mL of a 1:9 (10%) solution to every square metre of treated area. Use of CDA equipment is not recommended. Qld, NSW and NT only
Mistflower	5mL/L	1:9	Apply to actively growing plants with full foliage. Spray to wet all foliage. Further treatment and/or pasture improvement are recommended to restrict seedling re-establishment. Sprinkler Sprayer Apply 3mL of a 1:9 (10%) solution to every square metre of treated area. Qld and NSW only
Sifton bush / Chinese scrub	10 or 13mL/L	1:9	Apply when actively growing. Ensure complete coverage of the bush. Pasture improvement and/or re-treatment is recommended to control seedlings and/or regrowth. High Volume Use the higher rate on bushes over 1m. Low Volume Apply 40mL per 0.5m height. Wiper Application Double pass application is required. Application is best made to small (less than 1m) green bushes. Qld and NSW only
Sweet Briar	15-20mL/L	1:9	Apply to actively growing plants from late flowering to leaf fall. Spray to wet all foliage. Use the higher rate on bushes over 1.5m high. Burning (after complete brownout), pasture improvement and/or further treatment are recommended to control seedlings and/or regrowth. Low Volume Application (eg. Splatter Gun and Gas Gun): Apply 2 x 5mL dose per 0.5m bush height. Ensure spray contacts all foliage. NSW, Vic, SA, WA and Tas only

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

GENERAL INSTRUCTIONS

Roundup is a non-volatile, water soluble liquid product with non-selective herbicidal activity against many annual and perennial broadleaf weeds and grasses. Roundup may be used for weed control in agricultural land prior to sowing any edible or non-edible crop, but not prior to transplanting tomato seedlings.

Roundup is absorbed by plant foliage and green stems. It is inactivated immediately in the soil and does not provide residual weed control.

Roundup moves through the plant from the point of contact to and into the root system. Visible effects on annual weeds take 3-7 days but on perennial weeds may not be obvious for 2-3 weeks or longer in some cases. Visible effects of control may be delayed by cool or cloudy weather at and following treatment. Visible effects are a gradual yellowing and wilting of the plant which advances to complete browning of above ground growth and deterioration of underground plant parts. Delay application until vegetation has emerged to the stages described in the Weeds Controlled tables. Unemerged parts rising from unattached underground rhizomes or rootstock of perennials will not be affected by spray and will continue to grow. For this reason best control of most perennial weeds is obtained at late growth stages approaching maturity.

RESISTANT WEEDS WARNING

GROUP	M	HERBICIDE
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Roundup is a member of the Glycines group of herbicides. Roundup has the inhibition of EPSP synthase mode of action. For weed resistance management Roundup is a Group M herbicide. Some naturally occurring weed biotypes resistant to Roundup and other inhibitors of EPSP synthase mode of action 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 Roundup or other inhibitors of EPSP synthase herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Monsanto accepts no liability for any losses that may result from the failure of Roundup to control resistant weeds.

MIXING

Roundup mixes readily with water. Note: Reduced results may occur if water containing soil is used, eg. 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. Ensure the spray tank is free of any residue or previous spray materials.

Use spray solutions promptly and certainly within 5 days, since a gradual loss of activity will occur. Fill the spray tank with one half the required amount of clean water and add the proper amount of Roundup. Mix well before adding the remaining portion of water. Placing the filling hose below

the surface of the spray solution will prevent excessive foaming. Removing hose from tank immediately after filling will prevent back siphoning into water source. DO NOT use mechanical agitators as these may cause excessive foaming, Spray tanks, pumps, lines and nozzles should be thoroughly rinsed with clean water following application to prevent corrosion.

TANK MIXTURES/COMPATIBILITY

Roundup may be tank-mixed with the following herbicides, insecticides and additives. Read and follow all label directions, restraints, plantback 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. Where crystalline ammonium sulphate is recommended, wash 2% w/v (2kg/100L spray solution) through a top mesh-screen into the tank and mix thoroughly.
3. Add recommended herbicide/insecticide/additive to the spray tank and mix thoroughly.
4. Add Roundup and the remaining water. Mix thoroughly.
5. Add surfactant, if required, near the end of the filling process to minimise foaming.
6. Always maintain adequate agitation during application and use the tank mix promptly.

TANK MIXTURES – HERBICIDES

Atrazine flowable^Ψ (Agricultural uses only DO NOT apply the tank mix for Barnyard grass control.), 2,4-D ester, dicamba, Glean*, Simazine flowable^Ψ, Oust*, Yield*, Stomp® 330, Ally*, Logran* 750G, Flandor* 500, LVE MCPA, and Striker®.

The addition of Striker at 75 mL/ha to recommended rates of Roundup prior to planting wheat or barley will improve knockdown and increase the speed at which treated weeds develop visible signs of phytotoxicity.

^ΨAdd crystalline ammonium sulphate as per directions below.

TANK MIXTURES - ADDITIVES

Crystalline Ammonium Sulphate.

RATE: 2% w/v (2kg/100L spray solution). (DO NOT apply the tank mix for Barnyard grass control). The addition of crystalline ammonium sulphate to Roundup, when used to control ANNUAL weeds, MAY improve the performance of Roundup under adverse environmental conditions such as cool, cloudy weather, and assist in minimising the antagonism in tank mixes of Roundup and flowable triazine herbicides. Use only crystalline ammonium sulphate, NOT prilled or granulated forms. To test quality, dissolve 2 teaspoons in 2 litres of water. Swirl gently for 2 minutes. If undissolved particles remain, it is advisable to pre-dissolve prior to adding to spray tank through a screen. Ammonium sulphate may be corrosive to metal parts of the sprayer. Thoroughly flush tanks, pumps and nozzles with water after use.

Pulse® Penetrant

RATE: 200mL/100L spray solution. Add when treating bracken (boom application), Gorse, Eucalypt suckers and Lantana.

Wetter TX Surfactant

RATE: 200mL/100L spray solution. Add when treating Annual ryegrass in Spring (from beginning August to end October). Wetter TX is not a general purpose surfactant and should be used only where recommended.

Tank Mixtures - Insecticides

This product is compatible with the following insecticides: Dimethoate, Folithion 1000, Imidan*, Le-Mat*, Lorsban* 500, Perfekthion* EC400, Sumithion ULV, and emulsifiable concentrates of dimethoate and fenitrothion. Other insecticides have not been tested.

APPLICATION

Roundup 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

Use recommended rates of Roundup in 25 to 200 litres of clean water per hectare. When using Roundup at 500mL-1.5L/ha spray volumes in the range 25-100L/ha are preferred. Fan nozzle equipment is recommended, using pressures in the range 240-280 kPa. Boom height must be set to ensure double over lap of nozzle patterns at the top of the weed canopy.

High Volume Application

(eg. Knapsack/Handgun Equipment) The dilution rate is given as vol/1 litre eg: 10mL Roundup per litre of water. This is equal to 150mL Roundup per 15 litres of water or 1 litre per 100 litres 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 400-700kPa are recommended.

Low Volume Application

(eg. Gas Gun or Splatter Gun) Apply as an even spray to cover all foliage. Refer to Weeds Controlled for the dilution and volume of mixture to be applied. The dilution is specified as "Low volume mixture, Roundup: Water". For example, a 1:9 mixture equals one part Roundup plus 9 parts water.

WIPER EQUIPMENT

Wiper Equipment (eg. ropewick, canvas, felt or carpet applicators) may be used to apply Roundup onto weeds growing in oilseed crops, sugarcane, cotton, seed and pod vegetables, tree and vine crops specified in this label, pasture and non-crop areas. Avoid contact with desirable vegetation. Operate wiper equipment a minimum of 10cm above the crop or pasture. Weeds should be at least 15cm above the crop or pasture at time of application. Speed of travel should be no greater than 8km/h. 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 dense infestations or clumps, some plants may not be contacted by the herbicide solution. In these cases repeat treatment may be necessary. Mix only enough herbicide solution for immediate requirements. DO NOT store mixed solution for more than a few days. Flush out equipment with water after use.

RATE

Mix 1 litre Roundup with 2 litres clean water to prepare 33% solution. Roundup may be used according to the above directions for suppression or control of many annual and perennial weeds. See Weeds Controlled tables for specific use recommendations.

CONTROLLED DROPLET APPLICATION EQUIPMENT (CDA)

Use the following table as a guide for achieving the correct application rates using the Micron Herbi or similar equipment. See **Weeds Controlled** tables for specific rates and use recommendations. For hand held equipment a walking speed of approximately 1m/sec (4km/h) is recommended.

Rate of Roundup delivered at 1m/sec	3L/ha	6L/ha	9L/ha
Mixture (by volume) Roundup:water	1:3	1:1	2:1
Micron Herbi*, nozzle	Blue	Blue	Yellow

DO NOT add oils to Roundup/water mixture, otherwise difficulty in application and reduced weed control may occur.

CAUTION: CDA equipment produces a fine spray pattern which is not easily visible. Ensure spray pattern or drift does not contact foliage or any other green tissue of desirable plants, since severe injury or destruction may result.

AERIAL EQUIPMENT

Aerial equipment may be used to apply Roundup only in pasture or fallow situations prior to establishment of field crops, fodder crops, or new pasture, and for preharvest application to cotton and sorghum crops. DO NOT use in intensive horticultural cropping areas. Use recommended rates of Roundup specified in this label up to a maximum limit of 4L/ha. For Micronair and boom equipment, apply in a minimum spray volume of at least 20L/ha. Droplets with an average size (or VMD) of 250-350 micron dia. are recommended. Swath width should be 15-17m. 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 30-80L/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 temperature reaches 25°C, increase water volume to at least 30L/ha, and increase droplet size to at least 300 micron VMD. DO NOT apply Roundup by aircraft when temperature is above 30°C.

AVOID DRIFT

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

APPLICATION CHECKLIST

- The addition of non-ionic surfactant is recommended at a rate of 100mL of a 600g/L product (or equivalent) per 100L spray solution.
- DO NOT treat weeds under poor growing or dormant 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, herbicide oils, or other materials except as specifically directed on this label.
- Rainfall occurring up to 6 hours after application may reduce effectiveness. Heavy rainfall within 2 hours after application may wash the chemical off the foliage and a repeat treatment may be required.
- 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 one day after treatment of annual weeds and 7 days for perennial weeds, to ensure herbicide absorption.
- 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.

PROTECTION OF CROPS, NATIVE AND OTHER NONTARGET PLANTS

Avoid contact with foliage, green stems, exposed non-woody roots 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, CRUSTACEA AND ENVIRONMENT

DO NOT contaminate dams, rivers or streams with the product or used container. When controlling weeds in aquatic situations, refer to label directions to minimise the entry of spray into the water.

STORAGE AND DISPOSAL**(15L)**

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. Triple or preferably pressure rinse inner bladder before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean packaging to recycler or designated collection point. If not recycling, deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available bury the empty packaging 500mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.

(5L, 20L)

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. DO NOT contaminate seed, feed or foodstuff. DO NOT re-use container for any purpose. 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, triple rinse, break, crush or puncture and deliver empty packaging for appropriate disposal at an approved waste management facility. If an approved waste management facility is not available bury the empty packaging 500mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. Empty containers and product must not be burnt.

Envirodrum 110L Mini Bulk Returnable Container

Store in the closed, original container in a cool well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

(1000L)

Store in the closed, original container in a cool well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Empty contents 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. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash contaminated clothing, gloves and face shield or goggles. When using controlled droplet applicator, wear protective waterproof clothing and impervious footwear.

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 the Material Safety Data Sheet (MSDS), which can be obtained from your supplier or from the Nufarm website – www.nufarm.com.au

In case of emergency: Phone 1800 033 498 Ask for shift supervisor. Toll free 24 hours.

CONDITIONS OF SALE

"Any provisions or rights under the Trade Practices Act 1974 or relevant state legislation which cannot be excluded by those statutes or by law are not intended to be excluded by these conditions of sale. Subject to the foregoing, all warranties, conditions, rights and remedies, expressed or implied under common law, statute or otherwise, in relation to the sale, supply, use or application of this product, are excluded. Nufarm Australia Limited and/or its affiliates ("Nufarm") shall not accept any liability whatsoever (including consequential loss), or howsoever arising (including negligence) for any damage, injury or death connected with the sale, supply, use or application of this product except for liability which cannot be excluded by statute."

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