



- Herbicide

ROUNDUP POWERMAX

A foliar applied herbicide for the control of annual and perennial grass and broad-leaved weeds, before sowing or planting all crops, pre-emergence and pre-harvest in cereals and certain other crops, for destruction of grassland, and set-aside and for use in stubbles, orchards, vineyards, aquatic and non-crop areas.

This product is a water soluble granule containing 72% w/w glyphosate present as 79.2% w/w as the ammonium salt

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work

Contents e10kg

MAPP Number 16373

PROTECT FROM FROST

Store in a cool, dry place.

Imported

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Not for reformulation or repackaging.
No licence is granted under any patent.

Lot number/production date:



The Voluntary Initiative

*This label has been produced according to the
Crop Protection Association Voluntary Initiative (VI) guidance.*

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**In case of emergency day or night, telephone National Chemical Emergency Centre:
(01865) 407333**

To avoid risks to human health and the environment, comply with the instructions for use

Keep only in original container

Do not contaminate water with the product or its container

IMPORTANT INFORMATION AREA

FOR PROFESSIONAL USE ONLY, AS AN OUTDOOR AGRICULTURAL/HORTICULTURAL/
AQUATIC HERBICIDE

Crops/situations:

Wheat (winter), barley (winter), oats (winter), wheat (spring), barley (spring), oats (spring),
durum wheat, oilseed rape, combining and vining peas, field beans, mustard, linseed,
sugar beet, potatoes, swedes, turnip, bulb and salad onions, leeks.

Asparagus.

Grassland.

All edible crops (stubble), all non-edible crops (stubble).

Green cover on land not being used for crop production.

All edible and non-edible crops (destruction, before sowing/planting).

Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil,

Hard surfaces.

Apple, pear, plum, cherry, damson orchards.

Vineyards (Table and wine grapes)

Aquatic (enclosed waters, land immediately adjacent to aquatic areas)

Maximum individual dose: }

Maximum number of treatments: } Full details are given in Crop Specific
Information on the attached leaflet

Latest time of application: }

Other specific restrictions: }

Users must consult the appropriate water regulatory body (Environment Agency/Scottish Environmental Protection Agency) before using the product near water and must obtain their agreement before using this product to control aquatic weeds. Users must apply to the appropriate water regulatory body to determine the maximum allowable 'concentration in based on local conditions before using 'ROUNDUP POWERMAX'.

When applying to land not being used for crop production the maximum total dose must not exceed 3.0 kg/hectare/year.

Weed wipers may be used in any recommended crop where the wiper or chemical does not touch the growing crop. For weed wiper applications the maximum concentrations must not exceed the following:

- a) Weed wiper mini: 1 kg: 5.5 litres dilution with water
- b) Other wipers 1 kg: 3.8 litres dilution with water

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS
INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF
PRACTICE FOR USING PLANT PROTECTION PRODUCTS**

SAFETY PRECAUTIONS

Operator protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate and contaminated surfaces.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using hand-held equipment

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

WHEN USING DO NOT EAT OR DRINK OR SMOKE.

WASH DUST/GRANULES FROM skin or eyes immediately.

DO NOT BREATHE SPRAY.

WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.

Contains polyethoxylated tall oil fatty acid amidoamines. – May produce an allergic reaction.

Contains sodium sulphite. May cause an allergic reaction.

Environmental protection

Do not contaminate water with the product or its container (do not clean application equipment near surface water/avoid contamination via drains from farmyards and roads). It is essential that when this product is used to control weeds on hard surfaces that the directions for use are strictly adhered to.

Recommendations apply to the use of this herbicide for the control of weeds growing in or by water and must be read in conjunction with the Official Code of Practice entitled "Guidelines for the Use of Herbicides on Weeds in or near Watercourses and Lakes" obtainable from Department of Environment and Rural Affairs (DEFRA publications tel: 08459 556000), Scottish Executive, Environment and Rural Affairs Department, Department of Agriculture and Rural Development for Northern Ireland and the National Assembly for Wales Agriculture Department.

The Water Act, 1989, The Water Resources Act 1991, the Control of Pollution Act 1974, The Northern Ireland Water Resources Act 1992 and the Control of Pollution and Local Government (Northern Ireland) Order 1978, may apply to the act of applying ROUNDUP POWERMAX for the control of weeds growing in or by reservoirs and water courses, eg rivers, streams, ditches, drains and ponds/lakes discharging into such water courses.

Storage and disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS.

KEEP OUT OF REACH OF CHILDREN.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

EMPTY CONTAINER COMPLETELY and dispose of safely.

Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site, except for empty clean containers which can be disposed of as non-hazardous waste.

Medical advice

Medical guidance is available on a 24 hour basis by telephoning the National Chemical Emergency Centre on 01865 407333 or for doctors, from the National Poisons Information Service on 08448920111.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

Warnings

EXTREME CARE SHOULD BE TAKEN TO AVOID SPRAY DRIFT AS THIS CAN SEVERELY DAMAGE NEIGHBOURING CROPS OR PLANTS.

DO NOT MIX, STORE OR APPLY ROUNDUP POWERMAX IN GALVANISED OR UNLINED STEEL CONTAINERS OR SPRAY TANKS.

DO NOT leave spray mixtures in tank for long periods and make sure tanks are WELL VENTED.

Restrictions

Rain within 6 hours may reduce efficacy.

TREATED POISONOUS PLANT SPECIES MUST BE REMOVED BEFORE REGRAZING OR CONSERVING. Where Ragwort is present users should consult the Code of Practice on How to Prevent the Spread of Ragwort. Ragwort plants sprayed with this herbicide are more palatable and contain higher levels of toxins. Animals should be excluded from treated areas until any ragwort has completely recovered or died and there is no visible sign of the dead weed. Do not include treated Ragwort in hay or silage crops.

Applications of lime, fertiliser, farmyard manure and pesticides should be delayed until 5 days after application of ROUNDUP POWERMAX.

Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area, particularly when using near or alongside hedgerows.

Do not spray on to weeds suffering from drought, water-logging, a covering of dust, heat or frost, otherwise poor control may result.

Do not tank mix ROUNDUP POWERMAX with adjuvants, pesticides or fertilisers except as specified under Directions for Use – Compatibility.

This product is only for use on outdoor crops and situations.

Weeds controlled

All target weeds must be actively growing at spraying. It is important that all weeds are at the correct growth stage when treated, otherwise some re-growth may occur and this will need re-treatment.

PERENNIAL GRASSES must have full emergence of healthy, green leaf. (Common Couch, for example, becomes susceptible at the onset of tillering and new rhizome growth, which usually occurs when plants have 4-5 leaves, each with 10-15 cm of new growth).

PERENNIAL BROAD-LEAVED WEEDS are most susceptible around the flowering stage.

Where long-term PERENNIAL WEED control is sought it is important that perennial weeds are not disturbed prior to treatment so cultivation should not be carried out before spraying.

ANNUAL GRASSES AND BROAD-LEAVED WEEDS should have at least 5 cm of leaf, or 2 expanded true leaves, respectively. In set-aside, annual grasses are best treated at full ear emergence, or before stem elongation. Application during stem extension phase of annual grasses e.g. Black-grass and Brome species on set-aside between the end of April and end of May, may result in poor control and require re-treatment.

BRACKEN should be treated after frond tips are unfurled, but pre-senescence.

OTHER SPECIES - recommendations for specific areas of use are given in the Recommendation Tables. See booklet attached.

This product will not give an acceptable level of control of Horsetails (*Equisetum arvense*) – repeat treatment will be necessary.

Weed resistance strategy

There is a low risk for the development of weed resistance to ROUNDUP POWERMAX. Strains of some annual weeds (e.g. Black-grass, Wild oats and Italian Ryegrass) have developed resistance to certain herbicides which may lead to poor control using those products. A strategy for preventing and managing such resistance should be adopted. This should include integrating herbicides with a programme of cultural control measures. Guidelines have been produced by the Weed Resistance Action Group and copies are available from the HGCA, CPA, your distributor, crop adviser or product manufacturer (Monsanto).

Growers are encouraged to implement a weed resistance strategy based on (a) good agricultural practices and (b) good plant protection practices by:

- Following label recommendations
- The adoption of complimentary weed control practices
- Minimising the risk of spreading weed infestations
- The implementation of good spraying practice to maintain effective weed control
- Using the correct nozzles to maximise coverage
- Application only under appropriate weather conditions
- Monitoring performance and reporting any unexpected results to Monsanto UK Ltd (Tel: 01954 717575)

Crop specific information

Crops/situations	Maximum individual dose (kg product/hectare):	Maximum total dose (kg product/hectare/crop):	Latest time of application:
Winter wheat, winter barley, winter oats, spring wheat, spring barley, spring oats, durum wheat, combining peas, field beans <i>Pre-harvest</i>	2.0	2.0	7 days before harvest
Oilseed rape and linseed <i>Pre-harvest</i>	2.0	2.0	14 days before harvest
Mustard <i>Pre-harvest</i>	2.0	2.0	8 days before harvest
Winter wheat, winter barley, winter oats, spring wheat, spring barley, spring oats, durum wheat, oilseed rape, potatoes, vining and combining peas, field beans, mustard, linseed, sugar beet, swedes, turnips, bulb and salad onions, leeks. <i>Post plant pre-emergence</i>	0.75	0.75	Pre-emergence
Asparagus <i>Post plant pre-emergence</i>	2.5	2.5	Pre-emergence
All edible crops (stubble) All non-edible crops (stubble) <i>Stubbles and pre-plant</i>	2.5 or 0.75	2.5 or 1.5	For perennials: 5 days before drilling or planting of the following crop. For annuals: 2 days before drilling or planting or 6 hours before cultivating

Crops/situations	Maximum individual dose (kg product/hectare):	Maximum total dose (kg product/hectare/crop):	Latest time of application:
All edible and non-edible crops <i>Destruction, before sowing/planting</i>	2.5	-	-
Green cover on land not being used for crop production.	3.0	3.0	24 hours before cultivating.
Grassland destruction	3.0	3.0	5 days before harvest drilling or grazing
Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil.	2.5	-	-
Hard surfaces	2.5	-	-
Apple and pear orchards	2.5	2.5	After harvest (post leaf fall) but before green cluster stage
Cherry, plum and damson orchards	2.5	2.5	After harvest (post leaf fall) but before white bud stage.
Vineyards (table and wine grapes)	2.5	2.5	28 days before harvest
Aquatic (Enclosed waters and land immediately adjacent to aquatic areas)	3.0	3.0	

RECOMMENDATION TABLES

AREA OF USE	CROP/SITUATION	TARGET WEEDS/ USAGE	WEED INFESTATION	APPLICATION RATE kg/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE								
PRE-HARVEST ARABLE CROPS	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS	Common Couch	1-25 shoots/m ²	1.0	80-250 l/ha	<p>Grain/seed moisture must not exceed 30% at spraying.</p> <p>Harvest intervals:</p> <table border="0"> <tr> <td>CEREALS, PEAS, BEANS</td> <td>7+ days</td> </tr> <tr> <td>OILSEED RAPE</td> <td>14-21 days</td> </tr> <tr> <td>LINSEED</td> <td>14-28 days</td> </tr> <tr> <td>MUSTARDS</td> <td>8-10 days</td> </tr> </table> <p>Use high clearance, narrow wheeled tractors, wide booms and crop dividers.</p> <p>DO NOT TREAT CROPS GROWN FOR SEED</p> <p>Where desiccating crops, check susceptibility of any weeds present.</p> <p>Do not attempt to desiccate OILSEED RAPE or MUSTARD crops with significant secondary growth, uneven maturity, disease or stress.</p> <p>Desiccate LINSEED when seeds are light brown and capsules brown; stems/leaves may be yellow/green.</p> <p>Effects on brewing and baking have not been tested. Consult grain merchant or processor before use.</p> <p>At harvest management rates, ANNUAL NETTLE, VOLUNTEER POTATO, ROSEBAY WILLOW HERB and POLYGONUM WEEDS will not be susceptible. WHEAT crops, WHEAT VOLUNTEERS and BROAD-LEAVED WEEDS may require up to 14 days before harvest.</p> <p>Treated straw must not be used as an horticultural mulch.</p> <p># Use higher volumes for dense canopies.</p>	CEREALS, PEAS, BEANS	7+ days	OILSEED RAPE	14-21 days	LINSEED	14-28 days	MUSTARDS	8-10 days
	CEREALS, PEAS, BEANS		7+ days											
	OILSEED RAPE		14-21 days											
	LINSEED	14-28 days												
	MUSTARDS	8-10 days												
	OILSEED RAPE, MUSTARDS	Up to 75 shoots/m ²	1.5	100-250 l/ha#										
		Over 75 shoots/m ²	2.0											
	COMBINING PEAS FIELD BEANS LINSEED	Perennial broad- leaved weeds and other perennial grasses	Up to 75 shoots/m ²	1.5	80-250 l/ha									
	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS		Over 75 shoots/m ²	2.0										
			OILSEED RAPE MUSTARDS	All levels/species			2.0	100-250 l/ha#						
COMBINING PEAS FIELD BEANS LINSEED	Harvest management	All levels/species	2.0	80-250 l/ha										
WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS		Annual grasses, crop stems and leaves	0.5	80-250 l/ha										
OILSEED RAPE MUSTARDS	Annual broad- leaved weeds	0.75												
	LINSEED	Crop desiccation and annual weeds prior to direct combining	All levels/species	1.5	100-250 l/ha#									
		All levels/species	1.5	80-250 l/ha										

AREA OF USE	CROP/ SITUATION	TARGET WEEDS/ USAGE	WEED INFESTATION	APPLICATION RATE kg/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
STUBBLES, PRE-SOWING and PRE-PLANTING.	BEFORE ALL CROPS (edible and non- edible)EXCEPT ORCHARDS	Common Couch	Up to 75 shoots/m ² Over 75 shoots/m ²	1.5 2.0	80-250 l/ha	Do not cultivate immediately before spraying. For PERENNIAL weed control, allow: - 21+ days growth before spraying in spring 21+ days growth before spraying in spring 21+ days growth before spraying in spring - VOLUNTEER POTATOES to make ample top growth VOLUNTEER POTATOES to make ample top growth - 5 days before cultivating or drilling For ANNUAL weed control, allow: - 6 hours before cultivating. Where applications are made to larger weeds in stubble in the spring (Feb/Mar) it is recommended to wait 24 hours before cultivating. - 48 hours before direct drilling Allow 7 days before planting trees Refer to 'Weeds Controlled' section and 'Company Advisory Information' for guidance on weather and growing conditions of target weeds at time of application
		Other perennial grasses; volunteer potatoes (autumn only)	All levels/species	2.0		
		Perennial broad-leaved weeds	All levels/species	2.5		
		Volunteer cereals and annual weeds at small sizes – before growth stage 26 (BBCH scale)	All levels/species	0.75		
		Volunteer cereals and annual weeds at large sizes – after growth stage 26 (BBCH scale)	All levels/species	1.0		
	BEFORE ORCHARD PLANTING	Perennial grasses and broad-leaved weeds	Arable Weeds Pasture Weeds	2.0 2.5		
POST SOWING/ PLANTING, PRE-EMERGENCE OF THE CROP	LISTED CEREALS, OILSEED RAPE, POTATOES, MUSTARD, LINSEED, PEAS, FIELD BEANS, SUGAR BEET, SWEDE, TURNIP, ONION and LEEK	Volunteer cereals and annual weeds	All levels/species	0.75	80-250 l/ha	CAUTION - Ensure that spraying precedes ANY crop emergence.
	ASPARAGUS	Annual weeds Perennial grasses Perennial broad-leaved weeds	All levels/species	0.75 2.0 2.5	80-250l/ha	CAUTION - Ensure that spraying precedes ANY new spear emergence

AREA OF USE	CROP/ SITUATION	TARGET WEEDS/ USAGE	WEED INFESTATION	APPLICATION RATE kg/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE	
ALL EDIBLE AND NON-EDIBLE CROPS (DESTRUCTION, BEFORE SOWING/ PLANTING)	VEGETATION MANAGEMENT	-	Annual weeds Perennial grasses Perennial broadleaved weeds	0.75 2.0 2.5	80-250 l/ha* or hand-held equipment (p. 15)	*Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns Do not use under polythene or glass. Do not use in or alongside hedgerows.	
GREEN COVER ON LAND NOT BEING USED FOR CROP PRODUCTION e.g. SET-ASIDE	BEFORE or DURING REMOVAL FROM PRODUCTION	Common Couch	Up to 75 shoots/m ² Over 75 shoots/m ²	1.5 2.0	80-250 l/ha or Hand-held equipment or tractor mounted weed wiper (see Mixing & Spraying Section)	Before using on land taken out of production as part of a grant aided scheme, ensure compliance with the management rules of that scheme. Do not 'top' or cultivate immediately before application. For PERENNIAL weed control, allow: - 21+ days growth before spraying in spring - 5 days before cultivating or drilling. For ANNUAL weed control, allow: - 6 hours before cultivating.	
		Perennial broad-leaved weeds and other perennial grasses	All levels/species	2.0			
		Annual weeds: - autumn/spring of year 1 only - summer of year 1 and thereafter	All levels/species All levels/species	0.75 1.5			
	AFTER SHORT ROTATION or LONG TERM REMOVAL FROM PRODUCTION	Natural regeneration and cover crop destruction	Annual weeds only Perennial grasses Perennial broad-leaved weeds Perennial broad-leaved weeds as follows; Common ragwort, Nardus (matgrass), Hard rush, Heath rush, Jointed rush, Molinia (purple moor-grass), Sheep's fescue, Red fescue, White Clover (best cut in June and sprayed one month later and Yellow rattle	1.5 2.0 2.5 3.0	150-250 l/ha		Do not direct drill after set-aside.

AREA OF USE	CROP/ SITUATION	TARGET WEEDS/ USAGE	WEED INFESTATION	APPLICATION RATE kg/ha & WATER VOLUME		APPLICATION TIMING AND GUIDANCE
IN-CROP (TRACTOR-MOUNTED WICK-TYPE WEED WIPER APPLICATION)	ARABLE CROPS GRASSLAND SET ASIDE	Bolters, weed beet, other weeds	All levels	265g product per 1 litre water (26% solution) OR 360g product per 2 litres water in hot, dry conditions. (18% solution) For 'new generation' wipers consult the manufacturer for guidance		Weeds must be 10+ cm taller, and wiper 5+ cm higher, than desired vegetation. Wipe dense populations twice, in opposite directions. BOLTING BEET requires three applications, 2 weeks apart, from early July to early August. Contact Monsanto or your Distributor for specific recommended weed wiper applicators. IN GRASSLAND SITUATIONS REMOVE POISONOUS PLANTS BEFORE GRAZING/MOWING. If Ragwort is present, the guidance in the 'DIRECTIONS FOR USE' must be followed.
ORCHARDS (Hydraulic sprayers or hand held weed wipers)	APPLE, PEAR, PLUM, CHERRY, DAMSON	Perennial grasses, broad-leaved weeds	All levels of most species	2.5 18% solution of the product for hand held weed wipers	200-400 l/ha See Mixing & Spraying section for spot applications	Spray AFTER autumn leaf-fall and BEFORE: Apples, pears - green cluster stage Stone fruit - white bud stage Treat root suckers in late spring only. Trees must have been established 2+ years. Avoid contact with tree 30+ cm above ground.
		Root Suckers	-	2.5 18% solution of the product for hand held weed wipers		

ROTATIONAL GRASS, PERMANENT GRASSLAND - DESTRUCTION	GRASS	SHORT ROTATION RYEGRASS, LONGER LEYS AND PERMANENT PASTURE	Short rotation Ryegrass with annual weeds	1.5	150-250 l/ha	Treat EITHER before grazing/mowing in June-Oct, when growth is 30-60 cm, not dense and lacking mature seeds, OR regrowth after grazing/mowing.
			Leys 2-4 years old with perennial grass weeds	2.0		Select the application rate which controls/destroys the least susceptible weed and grass species present in the sward.
			Long leys 4-7 years old with perennial broad-leaved weeds	2.5		Grass may be conserved or grazed by cattle, dairy cows or sheep 5+ days after spraying. REMOVE POISONOUS PLANTS BEFORE GRAZING/MOWING.
			Permanent pasture	3.0		If Ragwort is present, the guidance in the 'DIRECTIONS FOR USE' must be followed
			See Weed Table on side of bag			ONLY direct drill grass and clover EITHER into 1-2 year leys without mat, all surface trash should be removed before direct drilling, 5+ days after spraying, OR long leys with some mat, in the spring following autumn application.

APPLICATION RATE FOR GRASSLAND DESTRUCTION

1.5 kg/ha		2.0 kg/ha		2.5 kg/ha		3.0 kg/ha	
Annual Meadow-grass	Meadow Fescue	Black-bent	Creeping Soft-grass	Bracken**	Red Clover	Common Ragwort	Nardus (Mat grass)
Common Chickweed	Meadow Foxtail	Broad-leaved Dock	Curled Dock	Common Sorrel	Sedges	Hard Rush	Red Fescue
Common Mouse-ear	Rough Meadow-grass	Cock's-foot	Perennial Rye-grass	Common Nettle	Sheep's Sorrel	Heath Rush	White Clover*
Dock seedlings	Speedwell species	Common Bent	Plantains	Creeping Buttercup	Soft Rush	Jointed Rush	Yellow Rattle
Italian Rye-grass	Timothy	Common Couch	Soft Brome	Creeping Thistle	Spear Thistle	Molinia (Purple Moor-grass)	
Mayweed species		Creeping Bent	Yorkshire Fog	Daisy	Tufted Hairgrass	Sheep's Fescue	
				Dwarf Thistle	Yarrow		
				Perennial Sow-thistle			

* White Clover is best cut in June and sprayed one month later.

** At full frond expansion

AREA OF USE	CROP/ SITUATION	TARGET WEEDS/ USAGE	WEED INFESTATION	APPLICATION RATE kg/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
VINEYARDS (Table and wine grapes)	TABLE GRAPES WINE GRAPES (inter row)	Perennial grasses and broadleaved weeds	All levels	2.5	200-400 l/ha	Latest application date 28 days before harvest. Do not apply in vines <4 years old and avoid foliage of the vines
AQUATIC	Enclosed waters and land immediately adjacent to aquatic areas	Emerged weeds: reeds, rushes, sedges, grasses and watercress. Floating weeds: white lilies; yellow lilies.	All stages.	2.5 3.0	200-400 l/ha	Apply to floating weeds between mid June and mid August. Apply to reeds between mid August and mid - September
NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION, PERMEABLE SURFACES OVERLYING SOIL, ALL SITUATIONS.	Vegetation management	Including farmyards and roadsides, paths and along fences	Annual weeds Perennial grasses and broad-leaved weeds	0.75 2.0-2.5	Hydraulic sprayers (boom and knapsack) at water volumes 80-400 l/ha See Mixing & Spraying section for spot applications.	Do not use under polythene or glass.
HARD SURFACES,	Vegetation management	Including non-porous farm yards roads, paths and alongside walls	Annual weeds Perennial grasses and broad-leaved weeds	0.75 2.0-2.5	Hydraulic sprayers (boom and knapsack) at water volumes 80-400 l/ha See Mixing & Spraying section for spot applications.	Apply this product carefully. Ensure spraying takes place only when weeds are actively growing (normally March to October) and is confined only to visible weeds including those in the 30cm swath covering the kerb edge and road gulley – do not overspray drains. Do not use under polythene or glass.

Application guide for hydraulic sprayers

EQUIPMENT	AMOUNT OF ROUNDUP POWERMAX	AREA TREATED	MEDIUM VOLUME Amount of Water	LOW VOLUME Amount of Water
Boom Sprayer	2.5 kg	1.0 ha	200 litres	100 litres
Knapsack sprayer*	12.5g	50m ² per litre	1 litre	0.5 litres

* Knapsack sprayer calibrated to deliver 200 litres/ha (medium volume) or 100 litres/ha (low volume).

Following Crops

Upon adsorption, the herbicidal properties of ROUNDUP POWERMAX are lost, permitting drilling of crops within 48 hours of application.

Mixing and spraying

ROUNDUP POWERMAX is a water-soluble granular formulation. The free-flowing, dust-free granules dissolve rapidly and completely in water and can be applied in spray volumes ranging from 80-400 l/ha using tractor-mounted and knapsack sprayers. Specialised spraying equipment such as weed wiper applicators may be used where indicated.

Correctly calibrate all sprayers under field or use conditions prior to application.

USAGE INSTRUCTIONS

Standard sprayer:

1. Fill the spray tank with 2/3 of the required quantity of water.
2. Switch on the agitation and re-circulation.
3. Add the granules "progressively" and when completed add the remaining water.
Continue agitation for a minimum of 5 minutes.

(Alternatively, a re-circulation washed sieve on top of the tank may be used if available. First fill the tank with required volume of water and slowly add granules to the sieve as they dissolve).

Induction hopper:

Follow Stages 1 and 2.

3. Half fill the bowl with water.
4. Add product until within 2 cm of the water's surface.
- 5 + 6. Open the valve to empty the bowl into the main tank and close when all the contents have emptied. Do not leave the induction valve permanently open or excessive air entrapment will occur. Repeat until the required amount of product has been introduced.

Spray Quality

A MEDIUM or COARSE quality spray (BCPC definition) should be applied for optimum results and to reduce the risk of drift. Conventional hydraulic sprayers with a pressure range 1.5-2.5 bar is suitable.

Filling the Sprayer

Half fill the spray tank with water and, on tractor-mounted sprayers, start agitation. Add the appropriate quantity of ROUNDUP POWERMAX. Top up the tank to the level required.

When using a chemical induction bowl or hopper, half fill the bowl with water and add ROUNDUP POWERMAX until within 2 cm (1 inch) of the surface of the water. With the rinsing system on, open the valve to empty the bowl into the main tank. Repeat until the required amount of ROUNDUP POWERMAX has been introduced.

Knapsack Sprayer Applicators – use in non-crop areas, aquatic situations and orchards.

When used at a walking speed of 1 m/sec to apply a swath of 1 m width, most knapsack sprayers deliver 200 l/ha spray volume (or 10 litres per 500 m²). To apply 2.0 kg/ha of ROUNDUP POWERMAX, therefore, use 20g product for each 2 litres of spray liquid required.

When used as above, knapsack sprayers fitted with low volume nozzles typically deliver 100 l/ha spray volume (or 10 litres per 1000 m²). To apply 2.0 kg/ha ROUNDUP POWERMAX in this case, use 40g product for each 2 litres of spray liquid required.

Hand-held Weed Wiper Applicator (e.g. Weed Wiper Mini) – use in non-crop, and orchards.

Apply a solution of 180g ROUNDUP POWERMAX per 1 litre of water adding a water-based dye if required. Care should be taken to avoid dripping onto wanted vegetation.

A suitable dye may be obtained from Certis, telephone (01980) 676500.

Spot Gun Applicators - treatment of individual weeds in orchards and non-crop situations. Apply 5 ml of spray to target weed, using a narrow cone TG-3 or TG-5 nozzle.

Spot diameter (metres)	Amount of ROUNDUP POWERMAX (g) per 5 litres spray solution			
	1.5 kg/ha	2.0 kg/ha	2.5 kg/ha	8.6 kg/ha
0.3	12	16	19	37
0.6	43	62	74	149

Boat mounted sprayers

For use in aquatic situations. Prepare sprayer as for knapsack sprayers. Calibrate and spray at the lowest speed possible. Always apply against the direction of any current.

Compatibility

Do not tank mix ROUNDUP POWERMAX with adjuvants, pesticides or fertilisers except as advised by Monsanto. For up to date information on compatible products contact Monsanto UK Limited (tel: 01954 717575).

For hydraulic sprayers: maintain continuous agitation when using ROUNDUP POWERMAX in tank mixture. For knapsack sprayers: mix thoroughly and use immediately when using ROUNDUP POWERMAX in tank mixture.

COMPANY ADVISORY INFORMATION

This section is not part of the Product Label under the Plant Protection Products Regulations 1995 and provides additional advice on the product.

General Information

ROUNDUP POWERMAX is a foliar-acting herbicide with broad-spectrum activity. It is translocated from treated green growth to underground roots, rhizomes and stolons, providing control of both annual and perennial weeds. ROUNDUP POWERMAX is rapidly adsorbed onto particulate matter in soils and water and is quickly degraded by the micro-organisms present in soil and aquatic bottom sediments. When used as directed any water subjected to ROUNDUP POWERMAX spray drift may be used immediately for irrigation purposes. Until degraded, the active ingredient in ROUNDUP POWERMAX, glyphosate, is practically immobile in soils and is, therefore, unlikely to contaminate groundwater. All edible and non-edible crops may be sown or planted at specified intervals following the use of this product.

Extensions of Authorisation

These extensions of the authorised use provide for the use of 'Roundup Powermax' in respect of crops and situations other than those included on the product label (above). Neither the efficacy nor the phytotoxicity of the product for which these Extensions of authorisation have been granted have been assessed and, as such, the user bears the risk in respect of failures concerning its efficacy and phytotoxicity.

Roundup PowerMax has the following Extensions of Authorisation for minor use.

Users must have a copy which can be downloaded from www.secure.pesticides.gov.uk/offlabellist before use.

Pre harvest: Buckwheat, Canary Seed, Millet, Sorghum (20141313), Hemp and Quinoa (20141321) grown for bird seed; Lupins, (20141306) and Rye, (20141307);

Outdoor Rhubarb, (20141320).

Inter-row: Bilberry, Blueberry, Blackcurrant, Cranberry, Gooseberry Redcurrant and Whitecurrant, (20141316); Chestnut, Hazlenut, Kentish Cob, Walnut, (20141317);

Outdoor crops of Beetroot, Carrot, Garlic, Horseradish, Leek, Onion, Parsley root, Parsnip, Salad Onion, Salsify, Shallot, Swede and Turnip, (20141305)

Non-food crops: Miscanthus, Game cover, Hemp, Woad, non-fruiting hops, soft fruit and top fruit, (20141320)

Agronomic advice

Applied pre-harvest of specified crops, ROUNDUP POWERMAX provides, in addition to weed control, a diverse range of harvest management benefits accruing from the removal of green material from the crop.

After application, large concentrations of decaying foliage, stolons, roots or rhizomes should be dispersed or buried by thorough cultivation before crop drilling. Direct drilling into such a mat of decaying material may occasionally cause a slight check to crop growth.

To maximise the safety of ROUNDUP POWERMAX to operator, consumer and environment, the label recommendations and the DEFRA/HSE/NAW publication "Code of practice for using plant protection products" of January 2006 should be adhered to.

Effects of weather

See Directions for Use (Restrictions).

ROUNDUP POWERMAX will remain efficacious at low but not freezing temperatures however, the onset of symptoms will be delayed.

A covering of dew may reduce efficacy where run off occurs.

Symptoms of weeds

Symptoms of treatment are generally seen first 7-10 days, or longer (if growth is slow), after spraying. These take the form of leaf reddening followed by yellowing and are usually quicker to appear on grasses than on broad-leaved weeds. Reaction to nettles is slow.

Sprayer Hygiene

It is essential to thoroughly clean out the entire sprayer system, using a recommended cleaner, between applying ROUNDUP POWERMAX and other pesticides.

Disposal

Follow the guidance on the disposal of surplus spray solution, tank washings, concentrate and containers as given in Section 5 of the DEFRA/HSE/NAW publication "Code of practice for using plant protection products" of January 2006.

Material Safety Data Sheet

A material safety data sheet for this product is available on request (telephone 01954 717575) or can be downloaded from the Monsanto website:

www.monsanto-ag.co.uk

Trade Mark References

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All other brand names referred to are trade marks of other manufacturers in which proprietary rights may exist.

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