

FRONT LABEL

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# Roundup<sup>®</sup> Metro

A foliar applied translocated herbicide for the control of annual and perennial grass and broad-leaved weeds before sowing or planting all crops.

For use pre-emergence and pre-harvest in cereals and certain other crops and for destruction of grassland.

For the control of emerged weeds in set-aside, stubbles and orchards.

Degraded by micro-organisms/microbes in the soil.

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

A soluble concentrate containing 360 g/l glyphosate, present as 441 g/l (35.4% w/w) of the potassium salt of glyphosate

Contents **e** 20 litres

MAPP Number 14842

PROTECT FROM FROST  
Store in a cool dry place  
Imported

© Monsanto 2013 (MdB)  
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.*

## Roundup® Metro

This product contains a soluble concentrate containing 360 g/l glyphosate, present as 441g/l (35.4% w/w) of the potassium salt of glyphosate

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



### **Warning**

**Very toxic to aquatic organisms with long lasting effects.**

Avoid release to the environment

Collect Spillage

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

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

**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.**

## IMPORTANT INFORMATION

FOR PROFESSIONAL USE ONLY AS AN AGRICULTURAL/HORTICULTURAL HERBICIDE

### Crops/situations:

Wheat (including Durum wheat), barley, oats, combining peas, vining peas, field beans.

Post planting and pre-emergence of wheat, barley, oats, oilseed rape, potatoes, peas, field beans, mustard, linseed, sugar beet, swede, turnip, onion and leek;

Asparagus;

Oilseed rape, mustard, linseed.

Sugar beet, swedes, turnips, bulb onions, leeks

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

Grassland.

Apples, pears; plums, cherries, damsons.

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

Green cover on land not being used for crop production;

**Maximum individual dose:**

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**Maximum number of treatments:**

}

Full details are given in

**Latest time of application:**

}

(Crop Specific Information – marked #)

**Other specific restrictions:**

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## SAFETY PRECAUTIONS

### Operator protection

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

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

OPERATORS MUST WEAR SUITABLE PROTECTIVE CLOTHING (COVERALL), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using hand-held sprayers, hand-held rotary atomisers, weed wiper equipment or spot gun equipment.

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

WHEN USING DO NOT EAT, DRINK OR SMOKE.

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

## 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*].

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5m of the top of the bank of a static or flowing water body, unless a Local Environmental Risk Assessment for Pesticides(LERAP) permits a narrower buffer zone, or within 1m of the top of a ditch which is dry at the time of application.

DO NOT ALLOW DIRECT SPRAY from hand held sprayers to fall within 1m of the top of the bank of a static or flowing water body. Aim spray away from water.

This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years.



## Storage and disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

KEEP OUT OF REACH OF CHILDREN.

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

RINSE CONTAINER THOROUGHLY by using an integrated pressure-rinsing device or manually rinse three times. Add washings to sprayer at time of filling and dispose of safely. Triple rinsed containers may 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 Metro in galvanised or unlined steel containers or spray tanks.**

**Do not leave spray mixtures in the tank for long periods and make sure tanks are well vented.**

### **Restrictions**

A period without rain of at least 6 hours, and preferably 24 hours, must follow application of Roundup Metro herbicide.

Do not spray on weeds where growth is impaired by natural senescence, drought, high temperature, a covering of dust, flooding or severe/prolonged frost at, or immediately after application, otherwise poor control may result.

Do not spray in windy conditions as drift onto desired plants or crops or vegetation can severely damage or destroy them.

### **Weeds controlled**

Roundup Metro herbicide controls most emerged grasses and broad-leaved weeds. 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.

Apply Roundup Metro herbicide once grasses and broad-leaved weeds have emerged and they have ACTIVELY GROWING green leaves

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

### **Following crops**

Upon soil adsorption the herbicidal properties of Roundup Metro are lost permitting the drilling of crops 48 hours after application.

## Crop specific information#

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL HERBICIDE			
Crops/situations:	Maximum individual dose (litres product/hectare):	Maximum total dose (litres product/hectare)	Latest time of application:
Harvest management of wheat (including Durum wheat), barley, oats, combining peas, field beans	4.0	4.0 l/ha/crop	7 days before harvest
Post planting and pre-emergence of listed cereals, oilseed rape, potatoes, combining peas, vining peas, field beans, mustard, linseed, sugar beet, swedes, turnips, bulb onions and leeks	1.5	1.5 l/ha/crop	pre-emergence
Asparagus	5.0	5.0 l/ha/crop	pre-emergence
Harvest management of oilseed rape and linseed	4.0	4.0 l/ha/crop	14 days before harvest
Harvest management of mustard	4.0	4.0 l/ha/crop	8 days before harvest.
Stubbles (of all crops)	5.0	5.0 l/ha/year	5 days before drilling or planting the following crop.
	or 1.5	1.5 l/ha/year	2 days before the drilling or planting of the following crop or 24 hours before cultivating
Grassland	6.0	6.0l/ha/year	5 days before harvest, grazing or drilling
Apple and pear orchards	5.0	5.0 l/ha/year	After harvest (post leaf-fall) but before green cluster stage
Cherry, plum and damson orchards	5.0	5.0 l/ha/year	After harvest (post leaf-fall) but before white bud stage
All edible and non-edible crops (destruction before sowing/planting)	5.0	5.0 l/ha/year	-
Green cover on land not being used for crop production (e.g. set aside)	6.0	6.0 l/ha/year	24 hours before cultivating
<p><b>Other Specific Restrictions:</b></p> <p>When applying through conventional rotary atomisers, the spray droplet spectra produced must be of a minimum Volume Median Diameter (VMD) of 200 microns.</p> <p>Weed wipers may be used in any recommended crop where the wiper or chemical does not touch the growing crop.</p> <p>For weed wiper applications, the maximum concentrations must not exceed the following:</p> <p>(a) weed wiper mini - 1:2 dilution with water            (b) other wipers - 1:1 dilution with water</p>			

## RECOMMENDATION TABLES

AREA OF USE	TARGET WEEDS/ USAGE	CROP	WEED INFESTATION	APPLICATION RATE L/HA	WATER VOLUME	APPLICATION TIMING AND GUIDANCE								
PRE-HARVEST ARABLE CROPS	Common Couch	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS	1-25 shoots/m <sup>2</sup>	2.0 <sup>+</sup>	80-250 l/ha*	<p>Grain/seed moisture must not exceed 30% at spraying.</p> <p>Harvest intervals:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">CEREALS, PEAS, BEANS</td> <td style="text-align: right;">7+ days</td> </tr> <tr> <td>OILSEED RAPE</td> <td style="text-align: right;">14-21 days</td> </tr> <tr> <td>LINSEED</td> <td style="text-align: right;">14-28 days</td> </tr> <tr> <td>MUSTARDS</td> <td style="text-align: right;">8-10 days</td> </tr> </table> <p>Use high clearance, narrow wheeled tractors, wide booms and crop dividers. DO NOT TREAT CROPS GROWN FOR SEED 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. Treated straw must not be used as a horticultural mulch.</p> <p>Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.</p> <p>(+) For optimum results use Frigate as an adjuvant at 0.5% spray solution as described in 'Compatibility' section.</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													
Up to 75 shoots/m <sup>2</sup>	3.0													
Over 75 shoots/m <sup>2</sup>	4.0													
OILSEED RAPE MUSTARDS	Up to 75 shoots/m <sup>2</sup>	3.0	100-250 l/ha #											
	Over 75 shoots/m <sup>2</sup>	4.0												
COMBINING PEAS FIELD BEANS	Up to 75 shoots/m <sup>2</sup>	3.0	80-250 l/ha*											
				Over 75 shoots/m <sup>2</sup>	4.0									
LINSEED	Up to 75 shoots/m <sup>2</sup>	3.0	80-250 l/ha*											
				Over 75 shoots/m <sup>2</sup>	4.0									

AREA OF USE	TARGET WEEDS/USAGE	CROP	WEED INFESTATION	APPLICATION RATE L/HA	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
PRE-HARVEST ARABLE CROPS (continued)	Perennial broad-leaved weeds and other perennial grasses	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS	All levels/species	4.0	80-250 l/ha*	# Use higher volumes for dense canopies.        (+) For optimum results use Frigate as an adjuvant at 0.5% spray solution as described in 'Compatibility' section.
		OILSEED RAPE MUSTARDS	All levels/species	4.0	100-250 l/ha #	
		COMBINING PEAS FIELD BEANS	All levels/species	4.0	80-250 l/ha*	
		LINSEED	All levels/species	4.0	80-250 l/ha	
	Harvest management	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS	Annual grasses, crop stems and leaves	1.0+	80-250 l/ha*	
			Annual broad-leaved weeds	1.5+		
	Crop desiccation and annual weeds, prior to direct combining	OILSEED RAPE MUSTARDS	All levels/species	3.0	100-250 l/ha #	
			LINSEED	All levels/species	3.0	



AREA OF USE	CROP/SITUATION	TARGET WEEDS/USAGE	WEED INFESTATION	APPLICATION RATE L/HA	WATER VOLUME	APPLICATION TIMING AND GUIDANCE				
STUBBLES, PRE-SOWING and PRE-PLANTING.	BEFORE ALL CROPS EXCEPT ORCHARDS	Common Couch	Up to 75 shoots/m <sup>2</sup>	3.0	80-250 l/ha*	Do not cultivate immediately before spraying.  For PERENNIAL weed control, allow: - 21+ days growth before spraying in spring - VOLUNTEER POTATOES to make ample top growth - 5 days before cultivating or drilling  For ANNUAL weed control, allow: - 24 hours before cultivating - 48 hours before direct drilling  Allow 7 days before planting trees  * Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.				
			Over 75 shoots/m <sup>2</sup>	4.0						
		Other perennial grasses; volunteer potatoes (autumn only)	All levels/species	4.0						
		Volunteer cereals and annual weeds	All levels/species	1.5+						
	Perennial broad leaved weeds	All levels/species	5.0							
BEFORE ORCHARD PLANTING	Perennial grasses and broad-leaved weeds	Arable weeds	4.0	5.0						
POST SOWING/ PLANTING, PRE-EMERGENCE OF THE CROP	LISTED CEREALS OILSEED RAPE, POTATOES, MUSTARD, LINSEED, PEAS, FIELD BEANS, SUGAR BEET, SWEDE, TURNIP, BULB ONION and LEEK	Volunteer cereals and annual weeds	All levels/species	1.5+	80-250 l/ha*	CAUTION - Ensure that spraying precedes ANY crop emergence.  * Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.				
							ASPARAGUS	Annual weeds	All levels/species	1.5+
								Perennial grasses		4.0
	Perennial broad-leaved weeds		5.0							
ALL EDIBLE AND NON-EDIBLE CROPS (DESTRUCTION, BFORE SOWING/ PLANTING)	VEGETATION MANAGEMENT	-	Annual weeds	1.5+	80-250 l/ha* or hand-held equipment (p. XX)	*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.				
	Perennial grasses	4.0								
	Perennial broadleaved weeds	5.0								

AREA OF USE	CROP/SITUATION	TARGET WEEDS/ USAGE	WEED INFESTATION	APPLICATION RATE L/HA	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
GREEN COVER ON LAND NOT BEING USED FOR CROP PRODUCTION EG 'SET ASIDE'	BEFORE or DURING REMOVAL FROM PRODUCTION  e.g. prior to growing a set-aside mixture	Common Couch	Up to 75 shoots/m <sup>2</sup>	3.0	80-250 l/ha*	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: - 24 hours before cultivating.  Do not direct drill after set-aside.  * Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.  Avoid applications during stem elongation as reduced control and re-spray is likely. Best control of annual grasses is achieved between full ear emergence and senescence.  (+) For optimum results use Frigate as an adjuvant at 0.5% spray solution as described in 'Compatibility' section.
			Over 75 shoots/m <sup>2</sup>	4.0	or  Hand-held equipment	
		Perennial broad- leaved weeds and other perennial grasses	All levels/species	4.0	or	
		Annual weeds:  - early autumn/ spring  - late spring/ summer	All levels/species  All levels/species	1.5+  3.0	Tractor mounted weed wiper	

AREA OF USE	CROP/SITUATION	TARGET WEEDS/ USAGE	WEED INFESTATION	APPLICATION RATE L/HA	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
GREEN COVER ON LAND NOT BEING USED FOR CROP PRODUCTION EG 'SET ASIDE' (continued)	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 listed below	3.0  4.0  5.0  6.0 <sup>++</sup>	150-250 l/ha*	<sup>++</sup> Only for weeds listed as per grassland destruction application rate table below.
GRASSLAND - DESTRUCTION	GRASS	Short rotation Ryegrass, longer leys and permanent pasture	Short rotation Ryegrass with annual weeds  Leys 2-4 years old with perennial grass weeds  Long leys 4-7 years old with perennial broad- leaved weeds  Permanent pasture  See weed table below	3.0  4.0  5.0  6.0	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.  Select the application rate which controls/destroys the least susceptible weed and grass species present in the sward.  Grass may be conserved or grazed by cattle, dairy cows or sheep 5+days after spraying. REMOVE POISONOUS PLANTS BEFORE GRAZING/MOWING.  ONLY direct drill grass and clover EITHER into 1-2 year leys without mat, 5+ days after spraying, OR long leys with some mat, in the spring following autumn application.  * Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.

**APPLICATION RATE FOR SPECIFIC WEED CONTROL IN GRASSLAND DESTRUCTION SITUATIONS**

3.0 L/HA	4.0 L/HA	5.0 L/HA	6.0 L/HA
Annual Meadow-grass Common Chickweed Common Mouse-ear Dock seedlings Italian Rye-grass Mayweed species Meadow Fescue Meadow Foxtail Rough Meadow-grass Speedwell species Timothy	Black Bent Broad-leaved Dock Cock's Foot Common Bent Common Couch Creeping Bent Creeping Soft-grass Curled Dock Perennial Rye-grass Plantains Soft Brome Yorkshire Fog	Bracken** Common Sorrel Common Nettle Creeping Buttercup Creeping Thistle Daisy Dwarf Thistle Perennial Sow-thistle Red Clover Sedges Sheep's Sorrel Soft Rush Spear Thistle Tufted Hair-grass Yarrow	Common Ragwort Hard Rush Heath Rush Jointed Rush Molinia (Purple Moor-grass) Nardus (Mat grass) Red Fescue White Clover* Yellow Rattle Sheep's Fescue

\* 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 L/HA	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
ORCHARDS	APPLE, PEAR, PLUM, CHERRY, DAMSON	Perennial grasses, broad-leaved weeds	All levels of most species	5.0	200-400 l/ha	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	-	5.0		

<p>IN-CROP (TRACTOR- MOUNTED WEED WIPER APPLICATION)</p>	<p>ARABLE CROPS AND GRASSLAND, SET-ASIDE</p>	<p>Bolters, weed beet, other weeds</p>	<p>All levels</p>	<p>1:1 dilution with water for wick-type weed wipers</p> <p>OR</p> <p>1:2 dilution with water in hot, dry conditions.</p> <p>For 'new generation' wipers consult the manufacturer for guidance.</p>	<p>Weeds must be 10+ cm taller, and wiper 5+ cm higher, than desired vegetation.</p> <p>Wipe dense populations twice, in opposite directions. BOLTING BEET requires three applications, 2 weeks apart, from early July to early August.</p> <p>Contact Monsanto or your distributor for specific recommended weed wiper applicators.</p> <p>Treated POISONOUS WEEDS must be removed or allowed to completely degenerate before grazing or conserving.</p>
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## Mixing and spraying

Roundup Metro mixes readily with water and can be applied in spray volumes ranging from 80-400 l/ha using tractor mounted, knapsack, rotary atomisers and hand-held sprayers. Specialised application equipment such as weed wipers and spot gun applicators may be used where indicated.

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

### a) Tractor mounted and powered sprayers

These should be capable of applying accurately 80-400 l/ha within a pressure range of 1.5-2.5 bars (20-35 psi).

Half fill the spray tank with clean water, start gentle agitation, and then add the correct amount of Roundup Metro. Top up the tank with water to the required level. To avoid foaming do not use top tank agitation. Use of a defoamer may be necessary.

#### *Medium Volume application (150-300 l/ha)*

Avoid high water volumes (>300 l/ha) which may lead to run-off from the treated vegetation, resulting in reduced control. Low drift nozzles such as air induction and pre-orifice types producing a medium or coarse spray (BCPC definition) should be used to minimise the risk of drift.

#### *Low Volume Application (minimum 80 l/ha)*

Low volume application can be achieved by reducing pressure and appropriate nozzle selection. Low drift nozzles which produce a medium spray quality (BCPC definition) should be used to minimise the risk of drift.

### b) Knapsack sprayers

Recommended delivery range is 80 - 300 l/ha. Half fill the spray tank with clean water, add the correct amount of Roundup Metro and top up with water. Fill according to best practice as given on the CPA's Voluntary Initiative website ([www.voluntaryinitiative.org.uk](http://www.voluntaryinitiative.org.uk))

When used at a walking speed of 1 m/sec to apply a swath of 1 metre width, most knapsack sprayers fitted with a Hypro AN 2.0 or similar nozzle deliver approximately 200 l/ha spray volume (or 10 litres per 500 m<sup>2</sup>). To apply 4.0 l/ha of Roundup Metro, therefore, use a 2% solution, i.e. 200ml Roundup Metro made up to 10 litres. Similarly, knapsack sprayers fitted with low volume nozzles such as Hypro AN 1.0 typically deliver approximately 100 l/ha spray volume. To apply 4.0 l/ha Roundup Metro in this case use 4% solution.

### c) Rotary Atomisers

Hand-held machines e.g. Herbi and Herbaflex or tractor mounted rotary atomisers can be used to apply a spray volume of 10-40 l/ha,

When rotary atomisers are used to apply Roundup Metro ensure that the droplet diameter falls within the range 200-300 microns for all uses.

Stir the correct amount of Roundup Metro to control the particular target species into the sprayer bottle half filled with clean water. Top up with water, close the top and shake gently to ensure good mixing

d) Weed Wipers

For ropewick applicators use a concentration of 1 part Roundup Metro to 2 parts of water and add a water-soluble dye if required. Care should be taken to avoid dripping onto wanted vegetation.

For new generation weed wipers, use 1 part Roundup Metro to 10 or 20 parts of water or as directed by manufacturer's instructions. A list of machines is included in the Company Advisory section at the end of this label.

e) Spot Gun Applicators

Spot gun applicators are for the treatment of individual weeds. Apply 5 ml of spray to target weed, using a narrow cone TG-3 or TG-5 nozzle.

Spot Diameter (metres)	Amount of Roundup Metro (ml) per 5 litres of spray solution for target dosages of:		
	3.0 l/ha	4.0 l/ha	5.0 l/ha
0.3	20	28	35
0.6	85	110	140

## Compatibility

Roundup Metro may be tank-mixed with an authorised adjuvant eg Frigate Adj 0325—only for specific areas of use as directed by Monsanto. Use 0.5 litres of Frigate per 100 litres of spray solution.

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

Do not tank-mix Roundup Metro when using rotary atomiser sprayers.

For hydraulic sprayers: maintain continuous agitation when using Roundup Metro in tank mixture.

For knapsack sprayers: mix thoroughly and use immediately when using Roundup Metro 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 Metro herbicide is an advanced formulation containing the potassium salt of glyphosate. Roundup Metro is taken up by foliage and translocated to underground roots, rhizomes and stolons, providing control of both annual and perennial grasses and broad-leaved weeds. Roundup Metro 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. Until degraded, the active ingredient in Roundup Metro, glyphosate, is practically immobile in soils and is, therefore, unlikely to contaminate groundwater.

### **Symptoms on weeds**

Symptoms of treatment are generally first seen 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 of nettles is slow.

### **Effects of weather**

See Directions for Use (Restrictions).

Roundup Metro 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.

Reduced control is likely where weed growth is impaired by natural senescence, drought, high temperature, a covering of dust, flooding or severe/prolonged frost at, or immediately after application.

### **Weed resistance strategy**

There is low risk for the development of weed resistance to Roundup Metro. There are no known cases of weed resistance to glyphosate in UK.

Strains of some annual weeds (e.g. Black-grass, Wild oats and Italian Ryegrass) have developed resistance to herbicides which may lead to poor control. A strategy for preventing and managing such resistant grass-weeds should be adopted. Guidelines have been produced by the Weed Resistance Action Group. 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)

### **Agronomic Advice**

Applied pre-harvest of specified crops, Roundup Metro provides, in addition to weed control, a diverse range of harvest management benefits accruing from uniform ripening of the crop. It is recommended for cleaning up weedy ground prior to planting or sowing.

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

### **General Cautions**

Take extreme care to avoid drift, particularly when using near or alongside hedgerows. The use of low drift nozzles such as 'air induction' and 'pre-orifice' nozzles are recommended.

After application, large concentrations of decaying foliage, stolons, roots or rhizomes should be dispersed or buried by thorough cultivation before crop drilling.

### **New generation weedwipers**

Logic Contact 2000  
Carrier Rollmaster  
Allman Ecowipe  
Rotowiper (UK) Ltd  
C-Dax™ Eliminator  
Weedswiper™

### **Disposal**

Follow the guidance on the disposal of surplus spray solution, tank washings, concentrate and containers as given in the DEFRA/HSC/NAW publication "Code of Practice for Using Plant Protection Products" of January 2006.

## Sprayer hygiene

It is essential to thoroughly clean-out spray tanks, pumps and pipelines and nozzle or disc assemblies, with a recommended detergent cleaner, between applying this product and other pesticides to avoid contamination from pesticide residues.

## Environmental Information Sheet

An Environmental Information Sheet for this product is available from the CPA's Voluntary Initiative website ([www.voluntaryinitiative.org.uk](http://www.voluntaryinitiative.org.uk))

## Metric Conversion Tables

Rate l/ha	Approximate area treated by this pack	
	Hectares	Acres
1.0	10	24.7
1.5	6.6	16.3
2.0	5.0	12.4
3.0	3.3	8.2
4.0	2.5	6.2

## Trade Mark References

Metro™ is a trademark of Monsanto Technology LLC.

Roundup®, Monsanto® and the Vine symbol are registered trademarks of Monsanto Technology LLC.

All other brand names used are trademarks of other manufacturers in which proprietary rights may apply.

Monsanto does not warrant that the purchase or use of equipment mentioned in this document will not infringe any patent or trademark registration.

Following the instructions on this Product Label for the specified uses should ensure that the product is used safely and efficaciously for those uses.

A Safety Data Sheet is available on request (telephone Monsanto Technical Helpline 01954 717575) or can be downloaded from the Monsanto website: [www.monsanto-ag.co.uk](http://www.monsanto-ag.co.uk)