

## **ROUNDUP® PRO BIACTIVE™**

### **DESCRIPTION**

A soluble concentrate formulation containing 360 g/l glyphosate present as 480g/l (41.1% w.w.) isopropylamine salt of glyphosate.

### **USES**

A foliar applied translocated herbicide for the control of emerged weeds in industrial and amenity situations, in forestry and in aquatic areas. Biodegrades in soil and water.

Roundup Pro Biactive is recommended for control of annual and perennial grasses and broad-leaved weeds in non-crop areas such as roadsides, paths, hard surfaces and along fences and walls. It is recommended for cleaning up weedy ground prior to planting or sowing, for total weed control on industrial sites and for aquatic weed control. Roundup Pro Biactive herbicide may also be used as a directed spray in ornamental plantings, and in forestry for site preparation and post planting treatments.

Roundup Pro Biactive is compatible with agitation with Chipman Diuron Flowable and is also compatible with adjuvant, Mixture B

### **MODE OF ACTION**

Roundup Pro Biactive herbicide is taken up by foliage and translocated to root systems.

### **ADVANTAGES**

- Versatile, all round weedkiller
- Can be applied through most applicators
- Controls most weeds and kills right down to the roots
- Non-irritant for improved operator safety

### **DIRECTIONS AND AREAS FOR USE**

#### **Time of spraying**

Roundup Pro Biactive 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 regrowth may occur and this will need re-treatment.

Apply Roundup Pro Biactive herbicide when there is full emergence of grasses and broad-leaved weeds and they have actively growing green leaves. All weeds should be treated when they are actively growing and before growth slows down or stops in the autumn.

**ROUNDUP® PRO BIACTIVE™**When to Apply

- Perennial grasses, including Couch - at least 4-5 leaves of length 10-15cm
- Perennial broad-leaved weeds - around flowering
- Annual grasses - 1 leaf or more
- Annual broad-leaved weeds - 2 leaves or more

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

**Application**

Application Rate  
5 litres/ha

**Application Guidance**

Roundup Pro Biactive can be applied using hydraulic sprayers at water volumes 80-400 l/ha.

		<b>MEDIUM VOLUME (200 l/ha) (2% spray solution)</b>		<b>LOW VOLUME (100 l/ha) (5 % spray solution)</b>	
<b>Hydraulic Sprayers</b>	<b>Amount of Roundup Pro Biactive</b>	<b>Volume of water</b>	<b>Area treated</b>	<b>Volume of water</b>	<b>Area treated</b>
Boom Sprayer	5 litres	250 litres	1.0 ha	100 litres	1.0 ha
Knapsack Sprayer	100 ml	5 litres	200m <sup>2</sup>	2 litres	200m <sup>2</sup>

5 litres = approximately 1 gallon, 2 litres = approximately ½ gallon

Roundup Pro Biactive can also be applied using rotary atomisers and weed wipers. See section Water Volumes and Spray Equipment.

**Forestry**

Roundup Pro Biactive can be used for site preparation and for weed control in planted out trees.

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Area of Use	Target Weeds/Usage	Weed Infestation	Application Rate l/ha	Water Volume	Application Details
Forestry - Pre-Planting	Arable land planting replanting & grassland areas	Arable weeds	4.0	Hydraulic sprayers 80-250 l/ha or Rotary Atomisers 40 l/ha	All tree species may be planted 7 days or more after treatment.
		Grassland weeds	5.0		
Forestry- Post-Planting (directed) in Conifers & Broad-leaved trees	Clean-up around trees with knapsack applications, conifer release trees	Annual/Perennial grasses and broad-leaves	4.0	Apply as a concentration of 1 part Roundup Pro Biactive: 50 parts water (2%)  or  Weedwiper Mini	It is essential to use a tree guard for all applications made in the growing season. Treat Bracken after frond tips are unfurled but before senescence.  Treat heather late August to end September. All other woody weeds are treated June-August, before leaf senescence (but after new growth of crop has hardened).
		Woody Weeds: Bracken/Beech Brush/Brambles Sycamore/Oak Hazel/Willow/Ash	3.0		
		Heather (peat soils)	4.0		
		Heather (mineral soils)	6.0		
		Rhododendron (*)	10.0		

(\*) For improved control of Rhododendron add Mixture B at a concentration of 2% final water volume to 8.0 ltr/ha (5.6 pts/ac) of Roundup Pro Biactive. Application using the Weedwiper is not suitable.

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Area of Use	Target Weeds/Usage	Weed Infestation	Application Rate l/ha	Water Volume	Application Details
Post-Planting (overall - dormant season in certain conifers)	Grass weeds	Lowland areas	1.5	Hydraulic sprayers 200-250 l/ha or hand-held equipment - see Water Volume and Spray Equipment section	DO NOT OVERALL SPRAY trees being grown for ORNAMENTAL PURPOSES, including CHRISTMAS TREES. Species safe to spray when fully dormant and leader growth has hardened: Corsican, Lodgepole and Scots Pines, Norway Spruce, Sitka Spruce, Lawson Cypress, Western Red Cedar. Douglas Fir and Noble Fir - safe to spray when fully dormant and leader growth has hardened but NOT in spring. If overall application takes place after the optimum timing the weed control may be reduced. It is advisable to spray a limited area of forest to test crop safety under local conditions before widespread overall application in subsequent years.  See caution below.
		Upland areas	2.0		
		Black Bent, Cocks-foot, Common Couch, Creeping-Soft grass, False Oat-grass, Fescues, Meadow grasses, Other Bent species, Purple Moor grass, Sweet Vernal grass, Tufted Hair-grass, Wavy hair-grass, Wood Small-reed (Bush grass)			
	Bracken Beech & Birch Brambles	All levels of all species	2.0 2.0 3.0		

These recommended application rates refer to forestry usage only. Inadequate control may result if used in other areas.

**Caution:** The timing of hardening of leader growth varies considerably between locations and between seasons, it may occur as early as the end of July or be delayed to October or later. To avoid damage to Lammas growth, sprays should be directed away from leaders.

**ROUNDUP® PRO BIACTIVE™****Aquatic**

Roundup Pro Biactive herbicide controls emergent and floating aquatic weeds including Common Reed, Reed Sweet-grass, Reed Canary-grass and Water-lily.

Target Weeds	Hydraulic Sprayer	Application Rate	Area Treated	Water Volume
Emergent weeds e.g. Reed, Grasses, Water Cress	Boom Sprayer	5.0 litres	1 ha	200-400 litres Optimum 250 litres
	Knapsack Sprayer	50 ml	100 m <sup>2</sup>	2.0 to 4.0 litres
Floating weeds e.g. Water-lilies	Boom Sprayer	6.0 litres	1 ha	100-200 litres
	Knapsack Sprayer	60 ml	100 m <sup>2</sup>	4.0 litres

5.0 litres = approximately 1 gallon. 2 litres = approximately ½ gallon

Treat when the weeds are actively growing with full emergence of green leaf, at flowering and before die back. Best results are obtained from applications in the periods from mid-July to mid-August on Water lilies and mid-August to mid-September on reeds.

On reeds and grasses, leaf symptoms usually appear within 14-21 days of spraying in the early autumn. Complete foliage desiccation usually occurs 30-40 days after spraying. At this stage, the reeds can be cut and removed. During cold conditions leaf symptoms may not appear before natural die back but no growth will occur in the season following spraying.

On Water lilies it is preferable to use a tractor or boat-mounted sprayer. During spraying, do not exceed a pressure of 2.0 Bars (30p.s.i.). When using a tractor mounted sprayer, do not exceed 8 kph (5 mph). With a boat-mounted sprayer, use a slow forward speed to cause minimum disturbance to the floating leaves of the weeds. The use of a boat may result in some leaves being disturbed before Roundup Pro Biactive herbicide can be absorbed. Applications made in flowing water should be sprayed against the directions of the flow.

Roundup Pro Biactive herbicide MAY BE USED for the control of aquatic weeds in the presence of fish if used in strict accordance with the recommendations in this section.

**USERS MUST CONSULT THE APPROPRIATE NRA REGIONAL OFFICE OR RIVER PURIFICATION BOARD BEFORE APPLYING ROUNDUP PRO BIACTIVE HERBICIDE IN RESERVOIRS, WATER COURSES AND WATERWAYS.**

**ROUNDUP® PRO BIACTIVE™****APPLICATION ADJACENT TO RESERVOIRS AND WATER COURSES**

Recommendations apply only to the use of this product 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 herbicide on weeds in or near water courses and lakes', obtainable from The Department of Agriculture of Agriculture, Fisheries and Food, Scottish Office Agriculture and Fisheries Department, Department of Agriculture for Northern Ireland, and the Welsh Office Agriculture Departments.

The Rivers (prevention of Pollution) Acts 1951 and 1961, The Rivers (Prevention of Pollution) (Scotland) Acts 1951 and 1965, the Northern Ireland Water Act 1972 and the Control of Pollution Act 1974, may apply to the act of applying this product for the control of weeds growing in or by reservoirs and water courses, e.g. rivers, streams, ditches, drains and ponds/lakes discharging into such water courses.

**Notes for guidance****SUBSEQUENT LAND USE**

Planting trees, shrubs etc, may take place 7 days after application. Grass may be sown 15 days after treatment. Roundup Pro Biactive can be used for site preparation and for weed control in planted out trees.

**SYMPTOMS ON THE 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.

**IMPORTANT:** To obtain optimum weed control, weeds must be left undisturbed with no further treatment or cultivation for 7 days after application. Allow 2-3 weeks for symptoms to develop then re-treat any unaffected plants using spot treatments.

**EFFECTS OF WEATHER**

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

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

Do not spray onto weeds suffering from drought, waterlogging, heat or frost, otherwise poor control may result.

**WEEDS CONTROLLED**

Roundup Pro Biactive herbicide controls most emerged grasses and broad-leaved weeds. It is important that all weeds are at the correct stage when treated, otherwise some regrowth may occur and this will need re-treatment.

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

Planting of trees, shrubs, etc. may take place 7 days after application. Grass may be shown 14 days after treatment.

**WATER VOLUMES AND SPRAY EQUIPMENT****1. Conventional Hydraulic Sprayers**

Knapsack sprayers and tractor mounted or powered sprayers may be used. These should be capable of applying accurately 80-400 l/ha within a pressure range of 1.5-2.5 bars (20-35 psi).

**Medium Volume Application**

Avoid high water volumes which may lead to run-off from the treated vegetation, resulting in reduced control. Nozzles producing a medium or coarse spray (BCPC definition) should be used to minimise the risk of drift:

e.g.	Knapsack	Lurmark AN 2.0, AN 4.0 Cooper Pegler Floodjet green, red
	Tractor	Lurmark 04-F110, 08-F110 Tee Jet 11004, 11008

**Low Volume Application**

Nozzles which produce a medium spray (BCPC definition) should be used to minimise the risk of drift.

e.g.	Knapsack	Cooper Pegler VLV 100 Lurmark AN 1.0
	Tractor	Lurmark Lo Drift

**ROUNDUP® PRO BIACTIVE™****Filling the Sprayer****Knapsack**

Stir the correct amount of Roundup Pro Biactive into at least 2 litres of clean water in a plastic bucket. Add this solution to a half filled sprayer and top up with water.

**Tractor Mounted**

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

**2. Rotary Atomisers**

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

- Hand held machines can be used to apply a spray volume of 10-20 l/ha, e.g. Herbi and Herbaflex.
- The Ulvaforest tractor-mounted boom sprayer is suitable for use in forest situations to apply a spray volume of 40 l/ha.
- Rotary Atomisers may be used for the control of aquatic weeds, the water volume must be 10-20 litres

**Filling the sprayer bottle - hand-held machines**

Stir the correct amount of Roundup Pro Biactive into the sprayer bottle half filled with clean water. Top up with water, close the top and shake gently to ensure good mixing.

**3. Overall Non-Selective Applications****Ulva and Mistblower**

These applicators are recommended for use in FORESTRY areas ONLY. The principle of application is to drift the herbicide onto target weeds taking care to avoid contact between this product and all desired species.

Apply in a total volume of spray liquid at 10-20 l/ha in the Ulva and 90-175 l/ha in the Mistblower using the correct dose of Roundup Biactive to control the particular target species.

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### **4. Hand Held Wipers**

Roundup Pro Biactive may be applied through the Weedwiper Mini. Use a concentration of 1 part Roundup Pro Biactive to 2 parts of water (a 1:2 ratio) and add a scarlet dye if required. Care should be taken to avoid dripping onto wanted vegetation.

The dye may be obtained from Hortichem Ltd, tel Salisbury (01722) 20133.

### **5. Cut Stump Application**

Enso attachment to rotary saws.

This technique is specific to scrub clearance in Forestry. The water soluble dye Methyl Violet Gurr may be added to Roundup Pro Biactive at a concentrate of 0.01% to help identify treated stumps. This is equivalent to the addition of 1ml of dye to 10 litres of spray liquid. the dye may be obtained from: BDH Chemicals Limited, Freshwater Road, Dagenham, Essex, RM18 1RZ. Tel. Poole (01202) 745520 - BDH Technical Services.

### **Calibration**

All sprayers should always be calibrated before use. This is essential when nozzles are changed or if a different dose of product is to be applied.

### **Sprayer Maintenance**

Ensure the sprayer is in good working order and replace damaged, worn or malfunctioning parts before use. Carry out maintenance according to the instructions of the manufacturer.

### **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

### **Caution**

1. Always wash out the sprayer thoroughly before and after use.
2. Do not mix or apply in galvanised or mild steel containers, such as old steel drums or galvanised watering cans.

**ROUNDUP® PRO BIACTIVE™****WARNING**

TAKE EXTREME CARE TO AVOID DRIFT.

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

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

**PRECAUTIONS**

- WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate.
- WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using hand-held rotary atomisers, weed wipers, a spot gun or when making cut stump applications.
- WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES, RUBBER BOOTS AND FACE PROTECTION (FACE SHIELD) when using the stem injection technique.
- WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES, RUBBER BOOTS AND FACE PROTECTION (FACE SHIELD WITH DISPOSABLE FILTERING FACE-PIECE) when using mistblowers and making 'drift' applications.
- DO NOT CONTAMINATE surface waters or ditches with chemical or used container.
- WASH HANDS AND EXPOSED SKIN before meals and after work.
- KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.
- KEEP OUT OF THE REACH OF CHILDREN.
- KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.
- WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank and dispose of safely.

This product is approved under the UK Control of Pesticides Regulations 1986 for use as directed.

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

**ALWAYS READ THE LABEL. USE PESTICIDES SAFELY.**

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The information contained on this leaflet supersedes all previous technical data issued