***FRONT LABEL***

H - Herbicide

# ROUNDUP PROVANTAGE

- Improved performance
- 480 g/L glyphosate
- Rainfast from 1 hour
- Low drift formulation

For the control of annual and perennial grass and broad-leaved weeds.

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

**GROUP 9 HERBICIDES**

UFI: WYU1-T0P0-D002-AADX

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.

This product contains a soluble concentrate containing 480 g/l glyphosate, present as 588 g/l (43.8% w.w.) of the potassium salt of glyphosate.

Contents e XX

MAPP Number 15534

PROTECT FROM FROST

Batch/lot number:

***BOOKLET AND BASE LABEL 12734732***

H

- Herbicide

# ROUNDUP PROVANTAGE

A soluble concentrate containing 480 g/l glyphosate, present as 588 g/l (43.8% w/w) of the potassium salt of glyphosate.

**MONSANTO (UK) LIMITED**
230 Cambridge Science Park, Milton Road, Cambridge, CB4 0WB, UK.
Telephone: 01223 226500; https://cropscience.bayer.co.uk/

**For 24-hour emergency information contact Bayer CropScience Ltd.**
**Tel: 00800 1020 3333**

**ROUNDUP PROVANTAGE**
Contains 480 g/l glyphosate, present as 588 g/l (43.8% w/w) of the potassium salt of glyphosate.



Toxic to aquatic life with long lasting effects.
Wear protective gloves/protective clothing/eye protection/face protection.
Collect spillage.
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.
To avoid risks to human health and the environment, comply with the instructions for use.

**IMPORTANT INFORMATION**

FOR PROFESSIONAL USE ONLY AS AN AGRICULTURAL / HORTICULTURAL / INDUSTRIAL / FORESTRY / AQUATIC HERBICIDE

**Crops/situations:**

All edible and non-edible crops (destruction, before sowing/planting).
Grassland.
Natural surfaces not intended to bear vegetation; permeable surfaces overlaying soil; hard surfaces.
Enclosed waters, open waters, land immediately adjacent to aquatic areas.
Forest, forest nursery (weed control, stump application and chemical thinning).
Apples, pears; plums, cherries, damsons.
Amenity vegetation.

| | |
|---|---|
| Maximum individual dose: | } |
| Maximum number of treatments: | } Full details are given in |
| Latest time of application: | } the attached leaflet |
| Other specific restrictions: | } (Crop Specific Information – marked #) |

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 when handling contaminated surfaces.*

** WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using hand-held sprayers, hand-held rotary atomisers, weed wiper equipment or spot gun equipment or when making cut stump treatments OR WHEN USING STEM INJECTION EQUIPMENT.*

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

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

### Environmental protection

Do not contaminate water with the product or its container except when used as directed. Do not clean application equipment near surface water.
Avoid contamination via drains from farmyards and roads.

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 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 ProVantage 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.

**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.
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.

## 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 ProVantage 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**
A period without rain of at least 6 hours and preferably 24 hours must follow application of Roundup ProVantage.

Do not spray onto weeds which are naturally senescent, or where growth is impaired by drought, high temperature, a covering of dust, flooding or frost at, or immediately after application, otherwise poor control may result.

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

Do not tank-mix Roundup ProVantage with adjuvants, pesticides or fertilisers, except as specified in the Compatibility section.

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

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

Keep stock out of treated areas for at least 5 days. 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.

**Weeds controlled**

Roundup ProVantage herbicide controls most emerged grasses and broadleaved 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 ProVantage 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 the 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.

Aquatic

Roundup ProVantage herbicide controls emerged and floating aquatic weeds including Common Reed, Reed Sweet-grass, Reed Canary-grass and Water- lily.

Treat when the weeds are actively growing with full emergence of green leaf, at flowering and before dieback. 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.

**Following crops** (*Subsequent land use following application of Roundup ProVantage*)

Upon soil adsorption the herbicidal properties of Roundup ProVantage are lost permitting the drilling of crops 48 hrs after application. Planting of trees, shrubs, etc. may take place 7 days after application.

**Crop specific information**

| Crops/situations | Maximum individual dose (kg product/ hectare): | Maximum total dose (kg product/ hectare/crop): | Latest time of application: |
|---|---|---|---|
| Permanent grassland (destruction), rotational grassland (destruction). | 4.5 | 4.5 l/ha/year | 5 days before harvest, grazing or drilling |
| Apple and pear orchards. | 3.75 | 3.75 l/ha/year | After harvest (post leaf-fall) |

| | | | |
|---|---|---|---|
| | | | but before green cluster stage |
| Cherry, plum and damson orchards. | 3.75 | 3.75 l/ha/year | After harvest (post leaf-fall) but before white bud stage |
| All edible and non-edible crops (destruction before sowing/planting) | 3.75 | 3.75 l/ha/year | - |
| Natural surfaces not intended to bear vegetation, permeable surfaces overlaying soil, hard surfaces | 3.75 litres/hectare | - | - |
| Enclosed waters, open waters, land immediately adjacent to aquatic area. | 4.5 litres/hectare | - | - |
| Forestry: Weed control<br><br>Stump application<br><br>Chemical thinning (by injection) | 7.5 litres/hectare<br><br>150ml/litre of water (15% solution of product in water)<br><br>1.5 ml per 10cm diameter (or less) of tree | -<br><br>-<br><br>- | -<br><br>-<br><br>- |
| Amenity vegetation | 3.75 litres/hectare | - | - |

**Other Specific Restrictions:**
Users must consult the appropriate water regulatory body (Environment Agency/Scottish Environmental Protection Agency/Natural Resources Wales) before using the product near water and must obtain their agreement before using this product to control aquatic weeds. The maximum concentration of active substance in treated water should not exceed 0.2 ppm.

When applying through rotary atomisers, the spray droplet spectra produced must be of a minimum Volume Median Diameter (VMD) of 200 microns.

Weed wipers may be used in any recommended crop where the wiper or chemical does not touch the growing crop.

When using weed wipers, the maximum concentrations used must not exceed the following:

| | |
|---|---|
| Weed wiper Mini | 1:3 dilution with water |
| Other Wipers | 1:2 dilution with water |

For stump application the maximum concentration must not exceed 150ml product per 1.0 litre water.

## AMENITY, INDUSTRIAL AND GENERAL WEED CONTROL

### Exclusion Times

**People, pets and wildlife need not be kept out of treated areas. It is best not to walk in areas where the spray is still wet as transfer to other vegetation may lead to unwanted damage to other foliage. Once the spray is dry this cannot occur.**

### Area of Use

Roundup ProVantage is recommended for control of annual and perennial grasses and broad-leaved weeds in non-crop areas, for cleaning up weedy ground prior to planting or sowing and for aquatic weed control. Roundup ProVantage may also be used as a directed spray in ornamental plantings, orchards and for spot treating in grassland. Roundup ProVantage must be targeted only at weed growth on hard surfaces such as roadsides and paths, (see recommendation table for details).

### Application Rate

**1.0 to 7.5 litres/ha – refer to Recommendation Tables pages 9-15**

**Application Guidance**
Use the following guidance when spraying at a rate of 3.75 l/ha.
For more details of suitable nozzles see 'Mixing and spraying section.'

| | **Spraying with 3.75 l/ha** | |
|---|---|---|
| **HYDRAULIC SPRAYERS** | **Standard volume (200 l/ha)** | **Low volume (100 l/ha)** |
| Boom sprayer | 3.75 litres in 200 litres water covers 1 ha | 3.75 litres in 100 litres water covers 1 ha |
| Knapsack /handheld sprayer* | 188ml in 10 litres water covers 500 $m^2$ | 375 ml in 10 litres water covers 1000 $m^2$ |
| * Walking speed of 1m/second and 1m swath | | |

Roundup ProVantage can also be applied using rotary atomisers and weed wipers. See 'Mixing and Spraying' section

## RECOMMENDATION TABLES

| AREA OF USE | CROP/ SITUATION | TARGET WEEDS/ USAGE | WEED INFESTATION | APPLICATION RATE l/ha | WATER VOLUME | APPLICATION TIMING AND GUIDANCE |
|---|---|---|---|---|---|---|
| ALL EDIBLE AND NON-EDIBLE CROPS (DESTRUCTION, BEFORE SOWING/PLANTING) | Vegetation management | - | Annual weeds<br>Perennial grasses<br>Perennial broad- leaved weeds | 1.0<br>3.0<br>3.75 | 80-250 l/ha*<br>or hand-held equipment section | *Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns<br>Do not use in or alongside hedgerows |
| GRASSLAND - DESTRUCTION | GRASS | Short rotation Ryegrass, longer leys and permanent pasture | Short rotation Ryegrass with annual weeds<br>Leys 2-4 years old with perennial grass weeds<br>Long leys 4-7 years old with perennial broad-leaved weeds<br>Permanent pasture<br>See Weed Table below | 2.25<br>3.0<br>3.75<br>4.5 | 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.<br>Select the application rate which controls/destroys the least susceptible weed and grass species present in the sward.<br>Grass may be conserved or grazed by cattle, dairy cows or sheep 5+ days after spraying. REMOVE POISONOUS PLANTS BEFORE GRAZING/MOWING. If Ragwort is present, the guidance in the DIRECTIONS FOR USE must be followed.<br>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. |

### APPLICATION RATE FOR GRASSLAND DESTRUCTION

| 2.25 l/ha | | 3.0 l/ha | | 3.75 l/ha | | 4.5 l/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) | Sheep's Fescue |
| Mayweed species | | Creeping Bent | Yorkshire Fog | Daisy | Tufted Hair-grass | | |
| | | | | Dwarf Thistle | Yarrow | | |
| | | | | Perennial Sow-thistle | | | |

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

** At full frond expansion

## Japanese Knotweed control

Japanese Knotweed is an invasive alien species reducing biodiversity in areas where it become established and propagating from tiny fragments of root, often spreading along watercourses. It is scheduled under the Wildlife and Countryside Act 1981 and all parts of the plant must be treated as Controlled Waste under the Environmental Protection Act 1990.
Roundup ProVantage can be used alone as part of an eradication programme or as part of an integrated programme in conjunction with soil disturbance or removal. Dormant rhizomes will not be controlled by Roundup ProVantage, but may be stimulated to grow by soil disturbance and then sprayed. It is particularly suitable for use near water. Sites must be monitored for at least three years and re-treated as necessary.

| **Area of Use** | **Target Weed** | **Method** | **Application Rate**<br>**Water Volume** | **Application Guidance** | |
|---|---|---|---|---|---|
| Amenity vegetation; Forestry;<br>Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces;<br>Enclosed waters, open waters, land immediately adjacent to aquatic area | Japanese Knotweed | Foliar application | 3.75l/ha<br><br>Hydraulic sprayers 80-250 l/ha<br>or hand-held equipment | For best results apply after the onset of flowering (usually August/September) but before dieback. Use specialist extending hand lances for stands 2-3m tall. Good coverage is essential; spray the underside as well as the upper surface of the leaves.<br>Or<br>Only as part of an integrated programme, spray when stems are 1-1.5m high (Usually at end of May) and repeat once re-growth reaches 1-1.5m again later in same season or the following year. (More re-growth will occur from this timing.) | |
| | | Stem filling technique | 10 ml of 15% solution per stem | See National Trust Methodology for full details*.<br>Cut stems approx. 200mm above base of cane & 40mm above node. Rupture the central stem tissue with a screwdriver and use a spot gun to insert Roundup ProVantage into the hollow stem within 15 minutes of cutting. | Use where overall spraying is not desirable, especially near watercourses or among desirable plants.<br>Timing: After mid-August but before leaf fall.<br>Stems must be >8mm diameter |
| | | Stem injection technique | 1.5 ml of neat solution per stem | Using specialist stem injection equipment, inject directly into individual stems. | |
| | | Hand-held weed wiper | 1 part Roundup ProVantage to 3 parts water | Use where overall spraying is not desirable or target plants are small or unsuitable for stem filling, (< 8mm) e.g. in re-treatment following foliar spraying. | |

| AREA OF USE | CROP/ SITUATION | TARGET WEEDS/ USAGE | WEED INFESTATION | APPLICATION RATE l/ha | WATER VOLUME | APPLICATION TIMING AND GUIDANCE |
|---|---|---|---|---|---|---|
| NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION, PERMEABLE SURFACES OVERLYING SOIL, RAILWAY BALLAST | Vegetation management | Including roadsides, paths and along fences | Annual weeds | 1.0 | Hydraulic sprayers (boom and knapsack) at water volumes 80-250 l/ha or Rotary atomisers* or hand-held equipment. See Mixing & Spraying section. | Do not use under polythene or glass. |
| | | | Perennial grasses and broad-leaved weeds | 3.75 | | |
| HARD SURFACES (EXCLUDING RAILWAY BALLAST) | Vegetation management | including roadsides, paths, concrete and alongside walls | Annual weeds | 1.0 | Hydraulic sprayers (boom and knapsack) at water volumes 80-250 l/ha or Rotary atomisers* or hand-held equipment. See Mixing & Spraying section. | 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 |
| | | | Perennial grasses and broad-leaved weeds | 3.75 | | |
| AMENITY VEGETATION | Vegetation management | Ornamental areas | Annual weeds | 1.0 | Hydraulic sprayers (boom and knapsack) at water volumes 80-400 l/ha or Rotary atomisers*at water volumes 10-40 l/ha or hand-held equipment. See Mixing & Spraying section. | Do not use under polythene or glass. |
| | | | Perennial grasses and broad-leaved weeds | 3.75 | | |

*Rotary atomisers may be used at a water volume of 10- 40 l/ha. Ensure droplet diameter falls within the range 200-300 microns

| AREA OF USE | CROP | 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 | 3.75 | 200-400 l/ha | Spray AFTER autumn leaf-fall and BEFORE:<br>Apples, pears - green cluster stage<br>Stone fruit - white bud stage<br><br>Treat root suckers in late spring only.<br><br>Trees must have been established 2+ years.<br>Avoid contact with tree 30+ cm above ground. |
| | | Root suckers | - | 3.75 | | |
| ENCLOSED WATERS, OPEN WATERS, LAND IMMEDIATELY ADJACENT TO AQUATIC AREAS | - | Emerged Weeds<br>- Reeds, Rushes, Sedges, Grasses and Watercress | All levels/species | 3.75 | 200-400 l/ha Optimum 250l/ha or hand-held equipment (p.8) | Consult appropriate Environment Agency regional office before use.<br>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 (30 p.s.i.). When using a tractor mounted sprayer do not exceed 8 kph (5mph).<br>Use boat-mounted sprayers at slowest practical speed. Always apply against direction of any current. When disturbed by wash, WATER-LILIES may require re-treatment. |
| | | Floating Weeds<br>- White water-lily<br>- Yellow water-lily | All levels | 4.5 | 100-200 l/ha or hand-held equipment (p.8) | |
| GRASSLAND,<br>PLANT FREE AREAS, ORNAMENTAL PLANTINGS,<br>AMENITY VEGETATION | - | Individual weeds | All levels | 1:3 dilution with water for wick-type weed wipers<br>OR<br>1:2 dilution with water in hot, dry conditions.<br>For 'new generation' wipers consult the manufacturer for guidance. | | Weeds must be 10+ cm taller, and wiper 5+ cm higher, than desired vegetation.<br>Contact Monsanto or your distributor for specific recommended weed wiper applicators.<br>Treated POISONOUS WEEDS must be removed or allowed to completely degenerate before grazing or conserving. If Ragwort is present, the guidance in the 'DIRECTIONS FOR USE must be followed. |

## Forestry weed control

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

| AREA OF USE | TARGET WEEDS/USAGE | WEED INFESTATION | APPLICATION RATE L/HA. | WATER VOLUME | APPLICATION GUIDANCE |
|---|---|---|---|---|---|
| Forestry:<br>- Pre-planting | Arable land, planting, replanting, & grassland areas | Arable weeds<br><br>Grassland weeds | 3.0<br><br>3.75 | Hydraulic sprayers: 80-250 l/ha<br>or<br>rotary atomizers: 40 l/ha* | All tree species may be planted 7 days or more after treatment<br>*Where rotary atomisers are used their droplet diameter must fall within the range 200-300µm. |
| Forestry:<br>- Post-planting (directed) in conifers & broad-leaved trees | Clean-up around trees with knapsack applications. | Annual/perennial grasses and broad-leaves | 3.0 | Knapsack sprayers: 200-250 l/ha<br>or<br>Weed wiper mini:<br>1 part ROUNDUP PROVANTAGE to 3 parts water | It is ESSENTIAL to use a TREE GUARD for all applications made in the growing season.<br>Treat bracken after frond tips are unfurled but before senescence.<br>Treat heather late August to end September.<br>All other woody weeds are treated June-August, before leaf senescence (but after new growth of crop has hardened). |
| | | Woody weeds:<br><br>Bracken/Beech<br>Brush/Brambles<br>Sycamore/Oak<br>Hazel/Willow/Ash | 2.25 | | |
| | | Heather (peat soils)<br><br>Heather (mineral soils) | 3.0<br><br>4.5 | | |
| | | Rhododendron (*) | 7.5 | 250l/ha | Cut back and treat regrowth when at least 1 metre in height throughout the entire coppice. |
| (*) For improved control of Rhododendron add Mixture B (ADJ AO570) at a concentration of 2% final water volume to 6.0 l/ha of Roundup ProVantage. Application using the weed wiper is not suitable. | | | | | |

| AREA OF USE | TARGET WEEDS/USAGE | WEED INFESTATION | APPLICATION RATE L/HA. | WATER VOLUME | APPLICATION GUIDANCE |
|---|---|---|---|---|---|
| Forestry:<br>- Post-planting (overall dormant season in certain conifers – conifer release) | Grass weeds<br>- Lowland areas<br>- Upland areas<br><br><br><br><br><br><br><br>Bracken<br>Beech & Birch<br>Brambles | <br>Black Bent, Cock's-foot, Common Couch, Creeping Soft-grass,<br>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)<br><br><br><br><br><br><br>All levels of all species<br>All levels of all species<br>All levels of all species | <br>1.0<br>1.5<br><br><br><br><br><br><br>1.5<br>1.5<br>2.25 | Hydraulic sprayers:<br>200-250 l/ha<br><br>or<br><br>Hand-held equipment - see 'Mixing and Spraying' section | <br>Species safe to spray when fully dormant and leader growth has hardened:<br>Corsican, Lodgepole and Scots Pines, Norway Spruce, Sitka Spruce, Lawson Cypress, Western Red Cedar.<br>Douglas Fir and Noble Fir - safe to spray when fully dormant and leader growth has hardened but NOT in spring.<br>If overall application takes place after the optimum timing 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.<br>These recommended application rates refer to forestry usage only.<br>Inadequate control may result if used in other areas.<br>See Caution below |
| 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. | | | | | |

| AREA OF USE | TARGET WEEDS/USAGE | WEED INFESTATION | APPLICATION RATE L/HA. | WATER VOLUME | APPLICATION GUIDANCE |
|---|---|---|---|---|---|
| Forestry:<br>- Stump application for chemical thinning | Deciduous trees | All species | 7.5% solution of Roundup ProVantage in water | | Apply the solution to saturate the rim of the newly cut surface, with a suitable adapted clearing saw, spot gun or paintbrush. Treat as soon as possible after felling, in the period November to March/April. Do not apply in the period of active sap flow in the spring/early summer. Do not cut trenches or drill holes and fill with the solution or use undiluted product.<br>Note: for ease of identification of treated areas a suitable, commercially available, water-soluble dye may be added to the prepared spray solution. |
| | Coniferous trees | All species | 15% solution of Roundup ProVantage in water | | |
| Forestry:<br>- Chemical thinning by injection of tree stems | Coniferous and deciduous species | - | 1.5 ml neat Roundup ProVantage per cut per 10 cm diameter (or less) tree | | Use a hatchet to cut one notch in trees up to 10cm diameter and apply 1.5 ml of the solution to each cut. Use two or three notches in trees over 10cm diameter. Do not treat in the period of active sap flow in the spring/early summer. |

**Mixing and spraying**
Roundup ProVantage mixes readily with water and can be applied in spray volumes ranging from 10 - 400 l/ha using tractor mounted, knapsack, rotary atomisers and hand-held sprayers. Specialised application equipment such as weed wipers, stem injection 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 hydraulic 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 ProVantage. 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 the 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 - 250 l/ha.
Half fill the spray tank with clean water, add the correct amount of Roundup ProVantage and top up with water.
When used at a walking speed of 1 metre/second to apply a swath of 1 metre width, most knapsack sprayers fitted with a Hypro AN 1.2 or similar nozzle deliver approximately 200 l/ha spray volume (or 10 l per 500 m2). To apply 3.75 l/ha of
Roundup ProVantage, therefore, use a 1.9% solution, i.e. 190ml Roundup ProVantage made up to 10 litres. Similarly, knapsack sprayers fitted with low volume nozzles such as Hypro DT 1.5 typically deliver approximately 100 l/ha spray volume. To apply 3.75 l/ha Roundup ProVantage in this case use 3.75% solution.

c) Rotary Atomisers
Hand-held machines can be used to apply a spray volume of 10-40 l/ha, e.g. Herbi and Herbaflex.
Tractor-mounted rotary atomiser boom sprayers are suitable for use in amenity, industrial, forestry,
orchards and aquatic areas situations to apply a spray volume of 10-40 l/ha.
When conventional rotary atomisers are used to apply Roundup ProVantage ensure that the droplet diameter falls within the range 200-300

microns for all uses.
Roundup ProVantage may be applied neat through specialised ULV applicators which have drift reducing systems or at a spray volume of 10-40 l/ha through conventional rotary atomisers.

d) Weed Wipers
For ropewick applicators use a concentration of 1 part Roundup ProVantage to 3 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 1part Roundup ProVantage 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) Cut Stump Applicators
For cut stump treatment an Enso attachment to rotary saws may be used. This technique is specific to scrub clearance in forestry. A suitable water soluble dye may be used.

f) Stem injection
Use a hatchet to cut one notch in trees up to 10cm diameter and two to three notches in trees above 10cm diameter. Use 1.5 ml of undiluted Roundup ProVantage per notch. Specialist stem injection equipment can be used to inject 1.5 mls Roundup ProVantage into hollow stems such as Japanese Knotweed and Giant Hogweed.

g) 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 ProVantage (ml) per 5 litres spray solution for targeted dosages of: | | |
|---|---|---|---|
| | 2.25 l/ha | 3.0 l/ha | 3.75 l/ha |
| 0.3<br>0.6 | 16<br>64 | 21<br>85 | 27<br>107 |

When used in paddocks keep livestock out of treated area until treated Ragwort or other poisonous weeds have either been removed or died down completely.

Boat mounted sprayers
For use in aquatic situations. Prepare sprayer as for knapsack sprayers (Section b above). Calibrate and spray at the lowest speed possible.
Always apply against the direction of any current.

**Compatibility**

Roundup ProVantage is physically compatible with some other pesticides. For up to date information on compatible products contact Monsanto
UK Limited (Telephone: 01223 226500

or visit https://cropscience.bayer.co.uk/

Roundup ProVantage is compatible with Mixture B NF (ADJ 0570). Where conventional hydraulic sprayers are being used Mixture B NF may be added to the spray tank solution, at a rate of 2% of the final water volume, for all pre-plant and post-plant directed sprays only.

DO NOT APPLY WITH MIXTURE B NF TO EDIBLE CROPS, GRASSLAND OR AQUATIC WEEDS.

Do not tank-mix Roundup ProVantage when using rotary atomiser sprayers.
N.B. Maintain continuous agitation when using Roundup ProVantage in a tank-mixture.

For knapsack sprayers: mix thoroughly and use immediately when using Roundup ProVantage in tank mixture.

Always consult manufacturers' recommendations before use.

## 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 ProVantage herbicide is an advanced formulation containing glyphosate. Roundup ProVantage 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 ProVantage 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 ProVantage, glyphosate, is practically immobile in soils and is, therefore, unlikely to contaminate groundwater.

Roundup ProVantage is a glyphosate formulation which, having no hazard classification, offers a high standard of operator safety. To maximise the intrinsic safety of Roundup ProVantage to operator, consumer and environment, the label recommendations and the DEFRA/HSC/NAW publication "Code of Practice for the Using Plant Protection Products" of January 2006, should be adhered to.

**Symptoms on the weeds**
Symptoms of treatment are generally first seen 7 - 14 days, or longer, if growth is slow after spraying. Leaf symptoms take the form of a reddening then yellowing of the foliage and are first seen on the grass weeds but take longer to appear on broadleaved weeds. Reaction of nettle is slow.

For aquatic weed control, 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 dieback but no growth will occur in the season following spraying.

**Effects of weather**
See Directions for Use (Restrictions).

Roundup ProVantage 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**
Glyphosate, the active ingredient in Roundup ProVantage is a Group G herbicide based on the mode of action classification system of the Herbicide Resistance Action Committee.

Under Best Practice there is a low risk for the development of weed resistance to Roundup ProVantage. There are no known cases of weed resistance to glyphosate in UK.

Strains of some annual weeds have developed resistance to glyphosate in some parts of the world leading to poor control. A strategy for preventing and managing such resistance should be adopted. This should include integrating herbicides with a programme of cultural control measures and /or active ingredients with a different mode of action.

Users are encouraged to implement a weed resistance strategy based on (a) Good Agricultural Practices and (b) Good Plant Protection Practices by:

- Following label recommendations on rates and timing.
- The adoption of Integrated Weed Management 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 (Telephone: 00 800 1214 9451).

**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.

**New generation weedwipers**

Logic Contact 2000
Carier 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 Section 5 of the DEFRA/HSC/NAW publication "Code of Practice for Using Plant Protection Products", 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.

**Trademark References**

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Monsanto® and the Vine symbol are registered trademarks of Monsanto Technology LLC.
All other brand names referred to are trademarks of other manufacturers in which proprietary rights may exist.

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

**Material Safety Data Sheet**
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 Material Safety Data Sheet is available on request (Telephone: 01223 226500) or can be downloaded from the Monsanto website:

https://cropscience.bayer.co.uk/our-products/amenity