

# Barbarian®

Contains 360 g/l (30.7% w/w) glyphosate and ethoxylated amine.

MAPP No. 12714

**A systemic herbicide, as a soluble concentrate, for the control of most broad-leaved and grass weeds, especially common couch, in pre-emergence of drilled crops, wheat, barley, oats, Durum wheat, oilseed rape, peas (combining), field beans, stubbles of all edible and non-edible crops, grassland, natural surfaces not intended to bear vegetation permeable surfaces overlying soil, hard surfaces, apple, pear, forest, enclosed water, land immediately adjacent to aquatic areas, open waters, green cover on land not being used for crop production.**

**RISK OF SERIOUS DAMAGE TO EYES**

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**PROTECT FROM FROST**

**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 AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using hand-held sprayers and hand-held rotary atomisers.

WEAR SUITABLE PROTECTIVE CLOTHING ( COVERALLS ), SUITABLE PROTECTIVE GLOVES, FACE PROTECTION (FACESHIELD) AND RUBBER BOOTS when using weed-wiping equipment, making cut stump treatments or 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.

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves. WHEN USING DO NOT EAT DRINK OR SMOKE. DO NOT BREATHE SPRAY.

WASH CONCENTRATE from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals 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 from farmyards and roads) \*except when used as directed.

The maximum concentration of glyphosate in the water must not exceed 0.2 ppm or such lower concentration as the appropriate regulatory body may require.

**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.

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank and dispose of safely.

To avoid risks to man and the environment comply with the instruction for use

Safety Data Sheet available for professional users on request.

This product is approved under The Plant Protection Products Regulations (as amended).

THE CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS (COSHH) MAY APPLY TO THE USE OF THE PRODUCT AT WORK.



**IMPORTANT INFORMATION**

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

See Statutory Area on attached leaflet for the following:

Crop or situation, Maximum individual dose of product, Maximum number of treatments, Latest time of application, Other Specific Restrictions

**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.**

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Contact details as above.

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**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.

**IMPORTANT INFORMATION**

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL/INDUSTRIAL/FORESTRY/AQUATIC HERBICIDE			
<u>Crops/situations</u>	<u>Maximum individual dose of product</u>	<u>Maximum number of treatments</u>	<u>Latest time of application</u>
Wheat, barley, oats, durum wheat, oilseed rape, linseed, mustard, combining peas, field beans, sugar beet, swede, turnip, onion and leek.	1.5 l/ha	One per crop	Pre-emergence of the crop
Wheat, barley, oats, durum wheat	4 l/ha	One per crop	7 days before harvest
Oilseed rape, linseed	4 l/ha	One per crop	14 days before harvest
Peas (combining), field beans	4 l/ha	One per crop	7 days before harvest
Stubbles of all edible and non-edible crops	1.5 l/ha	One per situation	2 days before drilling or planting of the following crop
Stubbles of all edible and non-edible crops	4 l/ha	One per situation	5 days before drilling or planting of the following crop
Grassland	6 l/ha	One per crop	5 days before harvest, grazing or drilling
Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces.	6 l/ha	-	-
Apple, pear	5 l/ha	One per year	In Spring, before green cluster stage
Forest	5 l/ha	see Other specific restrictions	-
Enclosed water, land immediately adjacent to aquatic areas, open waters.	6 l/ha	see Other specific restrictions	-
Green cover on land not being used for crop production	6 l/ha	see Other specific restrictions	24 hours before cultivating
<b>Other specific restrictions</b>			
<ol style="list-style-type: none"> <li>Users must consult the appropriate water regulatory body (Environment Agency/Scottish Environment Protection Agency) before using the product near water and must obtain their agreement before using this product to control aquatic weeds.</li> <li>When applying through rotary atomisers, the spray droplet spectra produced must be of minimum Volume Median Diameter (VMD) of 200 microns.</li> <li>Weed-wipers may be used in any crop where the wiper does not touch the growing crop. The maximum concentrations used must not exceed the following (a) Weedwiper Mini - 1:2 dilution with water (b) Other wipers - 1:1 dilution with water.</li> <li>For stump application, the maximum concentration must not exceed that produced by 200 ml product made up to 1 litre with water (20 % v/v).</li> <li>The total dose applied to green cover on land not being used for crop production must not exceed 6 litres of product per ha per year</li> </ol>			
<b>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.</b>			

**GENERAL INFORMATION**

Barbarian is a foliar acting herbicide that controls annual and perennial grasses and most broad-leaved weeds when used as directed. It is translocated from treated vegetative growth to underground roots, rhizomes or stolons. Leaf symptoms, being a reddening then yellowing of the foliage, are first seen on grass weeds but take longer to appear on broad-leaved weeds.

It is *particularly important* that the weeds have sufficient leaf growth and are actively growing when treated.

Perennial grass weeds must have produced fresh leaves, which are green and vigorous. Common couch is most susceptible to Barbarian when it is tillering and when new rhizomes have begun to grow. This is usually when the plants have about 5-6 leaves, each with approximately 12-15cm of new growth.

The majority of perennial broad-leaved weeds are most susceptible if treated when they are actively growing and are at or near flowering stage.

Annual weeds should be actively growing with grasses having at least 5cm of leaf and broad-leaved weeds at least two expanded true leaves when sprayed.

Couch grasses and other grass and broad-leaved weeds are *less susceptible* to Barbarian when growth is restricted by drought, waterlogging, frost, very high temperatures or natural dieback. Efficacy will be reduced if such conditions occur at or immediately after spraying.

Occasionally a slight check to crop growth may occur, particularly after direct drilling when crop seeds germinate amongst a mass of decaying foliage, stolons, rhizomes or roots. Thorough cultivations are necessary to disperse or bury decaying organic matter. Consolidate loose soils and ensure crops are adequately fertilised and appropriate measures are taken to prevent insect and fungal damage to the following crop, especially where following grassland.

DO NOT apply lime, fertiliser, farmyard manure, pesticides or similar materials until at least 5 days AFTER an application of Barbarian. Note: Barbarian does not give acceptable control of horsetail, *Equisetum arvense*.

**WEATHER CONDITIONS**

A period of at least 6 hours and preferably 24 hours free of rain must follow spraying. Do not spray onto weeds suffering from drought stress as reduced control may occur. Do not spray in windy conditions as drift onto other crops or vegetation can cause severe injury or

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**PRE-EMERGENCE OF DRILLED CROPS - ANNUAL WEEDS/VOLUNTEERS**

**Weeds Controlled:** Annual grasses and broad-leaved weeds.  
Volunteer cereals.

Seed must be drilled and drills firmly closed with a minimum 15mm (½") of settled soil above the seed.

Annual weeds must be small when treated following direct drilling.

DO NOT ALLOW SPRAY TO CONTACT THE LEAVES OF ANY CROP

CAUTION: Ensure that spraying precedes ANY crop emergence.

**Crop**

Drilled crops of:  
Wheat, barley, oats, durum wheat.

**Time and method**

Spray after drilling but not later than 72 hours before crop emergence.

**Dose rate**

1.5 l/ha

.....  
Oilseed rape, linseed, mustard,  
combining peas, field beans, sugar  
beet, swede, turnip, onion and leek.

Spray up to 48 hours after drilling.

Apply in 80-125 l/ha water

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**WEED CONTROL IN STANDING CEREAL CROPS (PRE-HARVEST)**

**Weeds Controlled:** Common couch (*Elymus repens*) Black bent (*Agrostis gigantea*)  
 Creeping bent (*Agrostis stolonifera*) Perennial broad-leaved weeds

**Crops:** Wheat including durum wheat, and oats destined for milling or feed.  
 Barley destined for malting or feed.  
 (Consult purchasers of crops grown on contract and prospective purchasers of malting grade barley before treatment)  
**DO NOT TREAT CROPS INTENDED FOR SEED.**  
**DO NOT TREAT UNDERSOWN CROPS.**

**Time**  
 Spray when the moisture content of the grain measures less than 30%.

Target weeds must be green, actively growing and accessible to the spray.

**Method**  
 Spray the crop and weeds overall. Use high clearance tractors with narrow wheels and crop dividers. Adjust boom height to maximise spray retention on the target weeds.

**After spraying:**  
 Wait at least 7 days before harvesting. Treated straw must be chopped and incorporated or removed, after which normal cultivations may be resumed. Treated straw may be used for feed and litter, but must not be used for horticultural purposes.

**Dose rate**  
**Low-medium couch-grass infestations, up to 75 shoots/m<sup>2</sup>:** 3 l/ha

**Medium-high couch-grass infestations, over 75 shoots/m<sup>2</sup>:** 4 l/ha

**Perennial broad-leaved weeds; other perennial grasses:** 4 l/ha

Apply in 150-250 l/ha water.

**WEED CONTROL AND DESICCATION IN STANDING OILSEED RAPE AND LINSEED (PRE-HARVEST)**

**Weeds Controlled:** Common couch (*Elymus repens*) Black bent (*Agrostis gigantea*)  
 Creeping bent (*Agrostis stolonifera*) Perennial broad-leaved weeds.

**Crops:** Oilseed rape, winter or spring.  
 Linseed, winter or spring

The treatment is suitable only for uniform, evenly maturing crops proceeding to harvest in prime condition.  
**DO NOT TREAT CROPS INTENDED FOR SEED.**

**Time**  
**Weed control/crop desiccation:**  
 Spray 2-3 weeks before harvest when the natural ripening of the seed is progressing and the moisture content of the seed measures less than 30%. Target weeds must be green, actively growing and accessible to the spray.

**Method**  
 Spray the crop and weeds overall. Minimise crop damage by use of high clearance tractors with narrow wheels and crop dividers.

**After spraying:**  
 Wait at least 14 days before harvesting Oilseed rape. Wait at least 14 days before harvesting linseed although up to 28 days may be necessary to achieve the required degree of desiccation.

Direct combine harvest the crop when fit. Treated straw must be chopped and incorporated or removed, after which normal cultivations may be resumed.

**Dose rate**  
**Low-medium couch-grass infestations up to 75 shoots/m<sup>2</sup> and crop desiccation:** 3 l/ha

**Medium-high couch-grass infestations over 75 shoots/m<sup>2</sup> and crop desiccation:** 4 l/ha

**Perennial broad-leaved weeds; other perennial grasses:** 4 l/ha

Apply in 200-250 l/ha water.

### WEED CONTROL IN FIELD BEANS AND PEAS (PRE-HARVEST)

**Weeds Controlled:** Common couch (*Elymus repens*). Black bent (*Agrostis gigantea*).  
Creeping bent (*Agrostis stolonifera*). Perennial broad-leaved weeds.

**Crops:** Field beans, winter or spring.  
Peas to be harvested dry.  
DO NOT TREAT CROPS INTENDED FOR SEED.

**Note:** This treatment is intended for weed control and not for crop desiccation.

**Time**

Spray when the natural ripening of the seed is progressing and the moisture content of the seed measures less than 30%. Target weeds must be green, actively growing and accessible to the spray.

**Method**

Spray the crop and weeds overall. Minimise crop damage by use of high clearance tractors with narrow wheels and crop dividers.

**After spraying:**

Wait at least 7 days before harvesting. Direct combine harvest the crop when fit. Treated straw must be chopped and incorporated or removed, after which normal cultivations may be resumed.

**Dose rate**

**Low-medium couch-grass infestations up to 75 shoots/m<sup>2</sup>:**  
3 l/ha

**Medium-high couch-grass infestations over 75 shoots/m<sup>2</sup>:**  
4 l/ha

Apply in 200-250 l/ha water.

### STUBBLE - ANNUAL AND PERENNIAL WEEDS, VOLUNTEERS

**Weeds Controlled:** Common couch (*Elymus repens*). Black bent (*Agrostis gigantea*).  
Creeping bent (*Agrostis stolonifera*). Annual grasses and broad-leaved weeds.  
Volunteer cereals and potatoes (autumn only).

**Crops:** Any crop to follow application on stubble.

**Time**

**Autumn/winter applications:**

Spray when perennial weeds are actively growing, especially after mid-October. Common couch should have at least 6 new leaves approx. 12cm long.

**Method**

**After harvest:**

- Do not cultivate.
- Remove straw.
- Allow weeds to regrow.
- Spray during mild conditions.
- Allow volunteer potatoes to make ample top growth and spray well before onset of frost or natural senescence.

**After spraying:**

- If before mid-November, wait at least 5 days before cultivating.
- If after mid-November, wait for perennial grass leaves to turn red/yellow before cultivating.

**Dose rate**

**Low-medium couch-grass infestations up to 75 shoots/m<sup>2</sup>:**  
3 l/ha

**Medium-high couch-grass infestations over 75 shoots/m<sup>2</sup> and volunteer potatoes:**  
4 l/ha

Apply in 150-250 l/ha water.

**Spring applications:**

Spray when weeds are actively growing as for autumn applications. Roots chopped by cultivations must show new leaf growth to be killed.

**After harvest:**

- Cultivate as required.
- Leave for regrowth to appear - allow a minimum 21 days weed growth before spraying.

**After spraying:**

Wait at least 5 days before cultivating. Re-treatment may be necessary pre-harvest or in autumn as emergence in spring may be incomplete.

## STUBBLE/CULTIVATED LAND - ANNUAL WEEDS/VOLUNTEERS

**Weeds Controlled:** Annual grasses and broad-leaved weeds.  
Volunteer cereals.

**Crops:** Any crop to follow application.

**Time**

**Autumn/spring/summer:**

Spray when weeds are actively growing.

**For optimum control:**

- Annual grasses should have at least 10cm of green leaf.
- Annual broad-leaved weeds should have at least 2 true leaves.

**Method**

**After harvest or cultivations:**

Allow ground to remain undisturbed for as long as practicable to allow weeds to regrow.

**After spraying:**

- Wait at least 24 hours before cultivating.
- Wait at least 48 hours before drilling.

**Dose rate**

1.5 l/ha

Apply in 80-250 l/ha water with the addition of authorised adjuvant ADJ 0354 at 0.5 litres/100 litres of water to achieve optimum efficacy.

## GRASSLAND

**Grasses/Weeds Killed:** Annual and perennial grasses.  
Annual and perennial broad-leaved weeds.

**Crops:** Any crop to follow application.

**Time**

Spray when grasses and weeds are actively growing at the following times and growth stages:

**Annual grasses and annual broad-leaved weeds:**

- Spring, summer or autumn.
- Annual grasses have at least 10cm of green leaf.
- Annual broad-leaved weeds have at least 2 expanded true leaves.

**Perennial grasses and perennial broad-leaved weeds:**

- Mid to late summer.
- Perennial grasses have at least 12cm of leaf or 5 fully expanded leaves.
- Perennial broad-leaved weeds have substantial leaf area or are near flowering.

**Important:** If poisonous weeds, such as ragwort, are present, keep livestock out of treated areas until such time that poisonous weeds have been removed.

**Method**

- Lightly cut or graze and allow regrowth for about 4 weeks until the recommended growth stages are reached.
- Spray at the dose rate recommended for the weed or grass type.
- Wait at least 5 days, when the leaves become yellowed, before removing the growth for conservation or by grazing as required, prior to cultivating or drilling.
- Surface mats of old grassland must be thoroughly broken by cultivations before reseeding - see also GENERAL INFORMATION

**Dose rate**

**1-2 years old, only annual weeds and grasses:** 3 l/ha

**2-4 years old, with perennial grasses:** 4 l/ha

**Long leys e.g. 4-7 years old with perennial broad-leaved weeds:** 5 l/ha

**Permanent grassland with ragwort or predominantly fine-leaved grasses:** 6 l/ha

Apply the recommended dose in 200-250 l/ha water.

**GREEN COVER ON LAND NOT BEING USED FOR CROP PRODUCTION (SET-ASIDE)**

**Weeds Controlled:** Common couch or scutch (*Elymus repens*). Black bent (*Agrostis gigantea*).  
Creeping bent (*Agrostis stolonifera*). Annual grasses and broad-leaved weeds.  
Volunteer cereals.

**Crops:** Any crop to follow application.

Users must ensure for themselves compliance with the management rules of any grant-aided scheme before use; the guidance given in the following may be changed.

**Time**

Spray whilst the green cover is actively growing at any time consistent with the prevailing weather conditions and within the management rules of any grant aided scheme.

Normally destruction of green cover cannot be started before 15 April and must be accomplished by 31 August. Deep-rooted perennial broad-leaved weeds are best controlled when well grown and are at or near flowering.

**Method**

- Do not cut or cultivate prior to applying this product in this situation.
- Spray before weeds set seed (but not before 15 April)
- After spraying do not cut, cultivate or prepare land for the next crop until permitted to do so by the management rules; in any event do not cut or cultivate for 1 day (after 1.5 l/ha) or 5 days (after 3-6 l/ha) after application.

**Dose rate**

**Annual weeds and grasses except black-grass:** 1.5 l/ha

Apply in 80-150 l/ha water for this dose rate.  
(note - if the green cover is dense and/or well established, use the higher dose of 3 l/ha in 150-250 l/ha water as for low-medium couch - see below)

**Low-medium couch or scutch-grass infestations up to 75 shoots/m<sup>2</sup>:** 3 l/ha

**Medium-high couch or scutch-grass infestations over 75 shoots/m<sup>2</sup> and black-grass:** 4 l/ha

**Ragwort, deep-rooted perennial broad-leaved weeds and fine-leaved grasses present:** 6 l/ha

Apply in 150-250 l/ha water.

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**ORCHARDS**

**Weeds Controlled:** Most annual and perennial weeds.

**Time**

Established (minimum 2 years) trees of:  
Apple, pear

**Method**

Apply as a directed MEDIUM or COARSE spray. Spray after leaf fall in autumn or before green cluster stage of apple and pear. Avoid spraying or allowing drift to contact the trunk above 30cm from the ground, or any branches. Spray must not contact any damaged bark.

**Dose rate**

5 l/ha in 250 l/ha water.

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**FORESTRY**

<u>Use</u>	<u>Dose Rate</u>	<u>Remarks</u>
<b>Before planting:</b> Most broad-leaved and grass weeds	5 l/ha in 250 l/ha water.	Apply as a MEDIUM or COARSE spray. Wait at least 7 days before planting.
<b>After planting (as directed spray) in competitive forestry situations:</b> for cleaning-up around trees; conifer release; control of most annual and perennial woody weeds including broad-leaved woody weeds, bracken, beech, brush, bramble, sycamore, oak, hazel, willow, ash, heather (peat soils).	4 l/ha  Mix 1 volume of Barbarian with 60 volumes of water.	Apply as a MEDIUM or COARSE spray by knapsack sprayer using a spray guard. It is ESSENTIAL to use a TREE GUARD for all applications made in the growing season. Treat bracken after frond tips are unfurled but pre-senescence. Treat heather late-August to end-September. Treat all other woody weeds June to August before leaf senescence, but after new growth of crop has hardened.
<b>Cut stump application to prevent regrowth of thinnings.</b>	Deciduous species: 1 volume product: 9 volumes of water (10% solution).  Coniferous species: 1 volume product: 4 volumes of water (20% solution).	Apply immediately after felling or simultaneously whilst sawing, with a special attachment to the saw, during November to March. Do not apply during the period of rising sap flow usually occurring during March to May.
<b>Thinning by stem injection</b>	All species: 2ml of undiluted product per cut. For trees more than 10 cm diameter make 2 or 3 cuts according to tree size and inject 2ml of product into each.	Cut into the live cambial tissue with a downward axe stroke. Cuts must be not more than 1m from the ground. Inject the Barbarian into each cut. Treat at any time of the year except during the period of rising sap flow usually occurring during March to May.

**Note:** for ease of identification of treated trees a suitable commercially available water soluble violet dye may be added to the prepared solution at 1ml dye per 10 litres of prepared spray solution.

**NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION, PERMEABLE SURFACES OVERLYING SOIL, HARD SURFACES: General use on non-cropped areas around the farm**

<b>Weeds Controlled:</b>	Most annual and perennial weeds.	
<b>Area of use</b>	<b>Dose Rate</b>	<b>Remarks</b>
Around farm buildings, paths and roadways.	<b>General use:</b> 4 l/ha  <b>Perennial broad-leaved weeds present:</b> 6 l/ha  Apply in 100-250 l/ha water.	Apply at any time of the year when weeds are showing green leaf and are actively growing. Weeds germinating after application will not be controlled. Apply as a MEDIUM or COARSE spray to weed foliage. Avoid drift onto crops, lawns, amenity plants or any desirable species. DO NOT USE UNDER GLASS OR POLYTHENE.  DO NOT SPRAY HEDGE BOTTOMS.

**Important:** If poisonous weeds, such as ragwort, had been present before treatment, then grazing animals, such as horses, should be kept clear of treated areas until such time that poisonous weeds have been removed.

### AQUATIC WEED CONTROL

Enclosed waters, land immediately adjacent to aquatic areas, open waters

**Situations:** For weed control in or near watercourses and lakes in the presence or absence of fish.

**Note:** provided that use is as directed on this label, water may be used for irrigation or livestock without interruption.

**Important:** Consult the appropriate regional water regulatory body (Environment Agency/Scottish Environment Protection Agency) responsible for the water catchment area before applying any treatment in or near water - see Other Specific Restrictions.

Consult and observe the code of practice entitled 'Guidelines for the use of herbicides on weeds in or near watercourses and lakes. DEFRA booklet PB2289.

<b>Weed species</b>	<b>Dose Rate</b>	<b>Remarks</b>
<b>Waterside weeds:</b>	Treat as for NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION.	As for NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION.
<b>Emergent weeds:</b> Bent, creeping Bulrush Canary-grass, reed Reed, common Sedge spp. Soft-rush Sweet-grass, reed Water-cress Whorl-grass	5 l/ha in 250 l/ha water.	For most species treat actively growing plants during August-September. Best results against water-cress are obtained from spraying in June. Treat bulrush in late July.
<b>Floating weeds:</b> Water-lily, white Water-lily, yellow	6 l/ha in 100-200 l/ha water.  <b>Maximum permitted concentration of glyphosate in the treated water = 0.2ppm</b>	Treat actively growing floating weeds during July-August. Apply with a suitably mounted hydraulic sprayer moving slowly against the current. Re-treatment of disturbed weeds along the path of the boat/carrier may be necessary 2-3 weeks later.

### KNAPSACK RATE ESTIMATOR

A full 20 litre knapsack sprayer applying spray at 250 l/ha will treat 800m<sup>2</sup>

<b>BARBARIAN recommendation</b>	<b>ml BARBARIAN required per 20 litres spray mixture</b>
4L per hectare in 250L per hectare water	320 ml
5L per hectare in 250L per hectare water	400 ml
6L per hectare in 250L per hectare water	480 ml

### WICK/WIPER APPLICATORS

Certain weeds, particularly those with an erect growth habit and having a spatial separation from desirable species, can be effectively controlled by wiping a concentrated solution of Barbarian onto the leaves or stems. Weeds must be actively growing at application.

Do not apply when rain is expected within 6 hours as, apart from unsatisfactory weed control, herbicide might be transferred to desirable species by rain splash or foliar contact

#### Barbarian dilution

Maximum Concentrations must not exceed:

Humid conditions	1 volume Barbarian : 1 volume of water
Warm, dry conditions	1 volume Barbarian : 2 volume of water

### Control of Bolters in Sugar Beet

Treat by a series of three applications during early July to early August with 2 weeks between treatments; for high populations repeat each treatment after 24 hours in the reverse direction.

#### CAUTION

Ensure that there is a minimum 5cm between the top of the tallest desired vegetation and the impregnated wiper. Bolters should be a minimum 10cm taller than the desired vegetation for safe application

### MIXING

Pour the recommended quantity of Barbarian into the spray tank already half-filled with clean water and under agitation. Top up the tank with more clean water to the required level, whilst maintaining agitation. Spray out on the day of mixing. **DO NOT MIX, APPLY OR STORE BARBARIAN IN GALVANISED OR UNLINED MILD STEEL CONTAINERS OR TANKS. KEEP TANKS WELL VENTED AND CLEAR OF ALL SOURCES OF IGNITION.**

### APPLICATION & SPRAY QUALITY

Prepared spray solution should be applied as a MEDIUM or COARSE spray (BCPC definition) at nozzle pressures not exceeding 2.5 bar. Barbarian is a systemic weedkiller and is active at low doses.

**Always take extreme care to avoid spray drift. DO NOT SPRAY in windy weather or near to desirable species or amenity plants as drift onto other crops or vegetation can cause severe plant injury or destruction.**

### SOILS

Barbarian may be used to control weeds on all mineral or organic soils or surfaces, including ash and gravel. Only weeds showing green leaf at the time of application can be killed. There is no residual activity with Barbarian.

### COMPATIBILITY

Barbarian is compatible with authorised adjuvant 'GS 800 Adjuvant' (ADJ 0354) but DO NOT mix with any pesticide or nutrient product.

### FUTURE PLANTING

Barbarian has no long-lasting herbicidal activity in soils after application. Agricultural and horticultural quality soils may be planted up with trees after not less than 7 days after application, unless directed otherwise. Other amenity plants may be planted after the treated vegetation has died back or after cultivation. Under normal weather conditions, cultivations may be conducted 7 days after treatment. Under poor growing conditions wait for the characteristic red/yellow leaf symptoms to appear before cultivating.

### WEED RESISTANCE STRATEGY

There is a low risk of weeds developing resistance to Barbarian. Growers are encouraged to implement a weed resistance strategy based on good agricultural practices and good plant protection practices. Good practice is achieved and enhanced by:

- Following these label recommendations.
- Adopting complementary weed control measures.
- Minimising the spread of weeds and their seeds.
- Implementing good spraying practices to achieve maximum weed control.
- Using the correct nozzles to maximise weed coverage.
- Applying only under appropriate weather conditions.
- Monitoring performance and reporting unexpected results to Barclay Chemicals Ltd.

Strains of some annual weeds, e.g. black-grass, wild-oat and Italian rye-grass, have developed resistance to herbicides which may lead 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. Guidelines have been produced by the Weed Resistance Action Group and copies are available from the HGCA, CPA, your distributor, crop advisor or product manufacturer.

### CARE OF EQUIPMENT

Wash equipment thoroughly after use with water and cleaning agent to remove traces of herbicide. Traces of herbicide left in the equipment may seriously damage or destroy crops sprayed with the same equipment at a later date.