



# Glypho-Rapid 450<sup>®</sup>

Glypho-Rapid 450 is a systemic herbicide for the control of most broad-leaved and grass weeds in:

- Barley
- Durum wheat
- Field beans
- Forest
- Grassland
- Green cover in land not being used for crop production
- Hard surface
- Land immediately adjacent to aquatic areas
- Linseed
- Mustard
- Natural surfaces not intended to bear vegetation
- Oats
- Oilseed rape
- Bulb Onion and leek
- Orchards: apple, pear, cherry, damson and plum
- Peas (combining and vining)
- Permeable surfaces overlying soil
- Pre-emergence of drilled crops
- Stubbles of all edible and non-edible crops
- Sugar beet
- Swede
- Turnip
- Wheat

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 (COSH) MAY APPLY TO THE USE OF THIS PRODUCT AT WORK.**

**MAPP No. 17647**

*Contains 450 g/l glyphosate as a soluble concentrate.*

## IMPORTANT INFORMATION

**FOR USE ONLY AS AN AGRICULTURAL, HORTICULTURAL, FORESTRY, INDUSTRIAL, AQUATIC HERBICIDE AND DESICCANT**  
See Directions for Use on attached leaflet for the following:  
Safety Precautions, Maximum individual dose of product, Maximum total dose, Latest time of application and 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**

**Manufacturer: Barclay Chemicals Manufacturing Ltd.,**  
Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15, Ireland.  
Tel: +353 1 8112900 Fax: +353 1 8224678 E-mail: [info@barclay.ie](mailto:info@barclay.ie) Website: [www.barclay.ie](http://www.barclay.ie)  
**Approval Holder: Barclay Chemicals (R&D) Ltd.** Contact details as above.  
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**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 when handling the concentrate and 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 when making cut stump treatments.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES, Rubber boots and FACE PROTECTION (FACESHIELD) 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 CONCENTRATE from skin or eyes immediately.

DO NOT BREATHE SPRAY.

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

WASH HANDS AND EXPOSED SKIN before eating, drinking or smoking 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.

*Livestock must be kept out of treated areas [for at least 5 days following treatment] IF RAGWORT IS PRESENT, FOLLOW THE GUIDANCE IN THE 'DIRECTIONS FOR USE'*

### **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.

## 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.

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

### IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL, HORTICULTURAL, FORESTRY, INDUSTRIAL, AQUATIC HERBICIDE AND DESICCANT			
Crops/situations	Maximum individual dose of product	Maximum total dose	Latest time of application
Wheat, barley, oats, durum wheat, oilseed rape, linseed, mustard, combining peas, vining peas, field beans, sugar beet, swede, turnip, bulb onion and leek.	1.2 l/ha	1.2 l/ha product per crop	Pre-emergence of the crop
Wheat, barley, oats, durum wheat.	3.2 l/ha	3.2 l/ha product per crop	7 days before harvest
Oilseed rape, linseed	3.2 l/ha	3.2 l/ha product per crop	14 days before harvest
Mustard	3.2 l/ha	3.2 l/ha product per crop	8 days before harvest
Peas (combining), field beans	3.2 l/ha	3.2 l/ha product per crop	7 days before harvest
Stubbles of all edible and non-edible crops	1.2 l/ha	1.2 l/ha product per year	2 days before drilling or planting of the following crop or 24 hours before cultivating
Stubbles of all edible and non-edible crops	4 l/ha	4 l/ha product per year	5 days before drilling or planting of the following crop
All edible and non-edible crops (destruction, before sowing/planting)	4 l/ha	4 l/ha product per year	5 days before drilling or planting of the following crop
Grassland	4.8 l/ha	4.8 l/ha product per year	5 days before harvest, grazing or drilling
Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces	4.8 l/ha	-	-
Apple and pear orchards	4 l/ha	4 l/ha product per year	After harvest but before green cluster stage
Cherry, damson and plum orchards	4 l/ha	4 l/ha product per year	After harvest but before white bud stage
Forest	8 l/ha	see Other specific restrictions	-
Land immediately adjacent to aquatic areas	4.8 l/ha	see Other specific restrictions	-
Green cover on land not being used for crop production	4.8 l/ha	4.8 l/ha product per year	24 hours before cultivating

**Other specific restrictions**

1. 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.
2. When applying through rotary atomisers, the spray droplet spectra produced must be of minimum Volume Median Diameter (VMD) of 200 microns.
3. For stump application, the maximum concentration must not exceed that produced by 160 ml product made up to 1 litre with water (16% v/v).
4. 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 – 2:5 dilution with water (b) Other wipers – 4:6 dilution with water.
5. The dose applied to green cover on land not being used for production must not exceed 4.8L product/ha/year.

**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**

**GENERAL INFORMATION**

Glypho-Rapid 450 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/scutch is most susceptible to Glypho-Rapid 450 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 12-15 cm (5-6") 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 5 cm (2") of leaf and broad-leaved weeds at least two expanded true leaves when sprayed.

Couch/scutch grasses and other grass and broad-leaved weeds are *less susceptible* to Glypho-Rapid 450 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 within 7 days of Glypho-Rapid 450.

Note: Glypho-Rapid 450 does not give acceptable control of horsetail, *Equisetum arvense*. Repeat treatment will be necessary.

**KNAPSACK RATE ESTIMATOR**

Using standard nozzles appropriately calibrated, each litre will treat 40m<sup>2</sup> (250l/ha water)

The rate of product applied using a knapsack sprayer must be equivalent to the application rates authorised in the 'Directions for use' section of the label.

<b>Glypho-Rapid 450 recommendation:</b>	<b>Quantity of Glypho-Rapid 450 required per 10 litres to treat 400m<sup>2</sup></b>	<b>Glypho-Rapid 450 required per 1 litre spray solution:</b>	<b>Area of Use</b>
2.4 l/ha in 250 l/ha water	96 ml	9.6 ml/1L water	General Use
4.8 l/ha in 250 l/ha water	192 ml	19 ml/1L water	Perennial broad-leaved weeds present

### 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 destruction. Do not spray during frosty weather that prevents active growth and can induce weed senescence.

PRE-EMERGENCE OF DRILLED CROPS - ANNUAL WEEDS/VOLUNTEERS		
<b>Weeds Controlled:</b> Annual grasses and broad-leaved weeds. Volunteer cereals.  Seed must be drilled and drills firmly closed with a minimum 15 mm (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	Time and Method	Dose Rate
<b>Drilled crops of:</b> Wheat, barley, oats, durum wheat	Spray after drilling but not later than 72 hours before crop emergence.	1.2 l/ha
Oilseed rape, linseed, mustard, combining peas, vining peas, field beans, sugar beet, swede, turnip, onion and leek.	Spray up to 48 hours after drilling.	Apply in 80-125 l/ha water

WEED CONTROL IN STANDING CEREAL CROPS (PRE-HARVEST)		
<b>Weeds Controlled:</b> Common couch/scutch ( <i>Elymus repens</i> ) Black bent ( <i>Agrostis gigantea</i> ) Creeping bent ( <i>Agrostis stolonifera</i> ) Perennial broad-leaved weeds		
<b>Crops:</b> 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	Method	Dose Rate
Spray when the moisture content of the grain measures less than 30%.  Target weeds must be green, actively growing and accessible to the spray.	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.  <b>After spraying:</b> 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.	<b>Low-medium couch/scutch-grass infestations, up to 75 shoots/m<sup>2</sup>:</b> 2.4 l/ha  <b>Medium-high couch/scutch-grass infestations, over 75 shoots/m<sup>2</sup>:</b> 3.2 l/ha  <b>Perennial broad-leaved weeds; other perennial grasses:</b> 3.2 l/ha  Apply in 80-250 l/ha water.

DETERMINATION OF HARVEST FOR WHEAT AND BARLEY (HARVEST MANAGEMENT) (aided desiccation of the crop already in the ripening phase)		
<b>Crops:</b> Wheat, for milling and feed. Barley, 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 and Method	Dose Rate	Remarks
Spray when the moisture content of the grain measures less than 30%. Spray the crop and any weeds overall. Use high clearance tractors with narrow wheels and crop dividers.  <b>Harvesting:</b> Wait at least 7 days before harvesting.	0.8-1.2 l/ha (Use 1.2 l/ha if annual broad-leaved weeds are present)  Apply in 80-150 l/ha water for these doses.	After spraying, 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.

WEED CONTROL AND DESICCATION IN STANDING OILSEED RAPE, MUSTARD AND LINSEED (PRE-HARVEST)		
<b>Weeds Controlled:</b>	Common couch/scutch ( <i>Elymus repens</i> ). Creeping bent ( <i>Agrostis stolonifera</i> ).	Black bent ( <i>Agrostis gigantea</i> ). Perennial broad-leaved weeds.
<b>Crops:</b>	Oilseed rape, winter or spring. Mustard 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	Method	Dose Rate
<b>Weed control/crop desiccation:</b> 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.	Spray the crop and weeds overall. Minimise crop damage by use of high clearance tractors with narrow wheels and crop dividers.  <b>After spraying:</b> Wait at least 8 days before harvesting mustard. 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.	<b>Low-medium couch/scutch-grass infestations up to 75 shoots/m<sup>2</sup> and desiccation:</b> 2.4 l/ha  <b>Medium-high couch/scutch-grass infestations over 75 shoots/m<sup>2</sup> and desiccation:</b> 3.2 l/ha  <b>Perennial broad-leaved weeds; other perennial grasses:</b> 3.2 l/ha  Apply in 200-250 l/ha water.

WEED CONTROL IN FIELD BEANS AND PEAS (PRE-HARVEST)		
<b>Weeds Controlled:</b>	Common couch/scutch ( <i>Elymus repens</i> ). Creeping bent ( <i>Agrostis stolonifera</i> ).	Black bent ( <i>Agrostis gigantea</i> ). Perennial broad-leaved weeds.
<b>Crops:</b>	Field beans, winter or spring. Peas, winter or spring, to be harvested dry. DO NOT TREAT CROPS INTENDED FOR SEED.	
<b>Note:</b>	This treatment is intended for weed control and not for crop desiccation.	
Time	Method	Dose Rate
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.	Spray the crop and weeds overall. Minimise crop damage by use of high clearance tractors with narrow wheels and crop dividers.  <b>After spraying:</b> 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.	<b>Low-medium couch/scutch-grass infestations up to 75 shoots/m<sup>2</sup>:</b> 2.4 l/ha  <b>Medium-high couch/scutch-grass infestations over 75 shoots/m<sup>2</sup>:</b> 3.2 l/ha  <b>Perennial broad-leaved weeds; other perennial grasses:</b> 4 l/ha  Apply in 200-250 l/ha water.

STUBBLE - ANNUAL AND PERENNIAL WEEDS, VOLUNTEERS (All edible and non-edible crops)		
<b>Weeds Controlled:</b> Common couch/scutch ( <i>Elymus repens</i> ). Black bent ( <i>Agrostis gigantea</i> ). Creeping bent ( <i>Agrostis stolonifera</i> ). Annual grasses and broad-leaved weeds. Volunteer cereals and potatoes (autumn only).		
<b>Crops:</b> Any crop to follow application on stubble.		
Time	Method	Dose Rate
<b>Autumn or winter applications:</b> Spray when perennial weeds are actively growing, especially after mid-October. Common couch/scutch should have at least 6 new leaves approx. 12cm (5") long.	<b>After harvest:</b> <ul style="list-style-type: none"> <li>Do not cultivate.</li> <li>Remove straw.</li> <li>Allow weeds to regrow.</li> <li>Spray during mild conditions.</li> <li>Allow volunteer potatoes to make ample top growth and spray well before onset of frost or natural senescence.</li> </ul> <b>After spraying:</b> <ul style="list-style-type: none"> <li>If before mid-November, wait at least 5 days before cultivating.</li> <li>If after mid-November, wait for perennial grass leaves to turn red/yellow before cultivating.</li> </ul>	<b>Low-medium couch/scutch-grass infestations up to 75 shoots/m<sup>2</sup>:</b> 2.4 l/ha <b>Medium-high couch/scutch-grass infestations over 75 shoots/m<sup>2</sup> and volunteer potatoes:</b> 3.2 l/ha <b>Perennial broad-leaved weeds present:</b> 4 l/ha Apply in 150-250 l/ha water.
<b>Spring applications:</b> Spray when weeds are actively growing as for autumn applications. Roots chopped by cultivations must show new leaf growth to be killed.	<b>After harvest:</b> <ul style="list-style-type: none"> <li>Cultivate as required.</li> <li>Leave for regrowth to appear - allow a minimum 21 days weed growth before spraying.</li> </ul> <b>After spraying:</b> Wait at least 5 days before cultivating. Re-treatment may be necessary pre-harvest or in autumn as emergence in spring may be incomplete.	

ALL EDIBLE AND NON-EDIBLE CROPS - DESTRUCTION OF WEEDS AMONGST ANY FAILED, UNWANTED OR UNMARKETABLE RESIDUAL CROP PRIOR TO RE-CROPPING		
Do not use under glass or polythene. <b>Weeds Controlled:</b> Common couch/scutch ( <i>Elymus repens</i> ). Black bent ( <i>Agrostis gigantea</i> ). Creeping bent ( <i>Agrostis stolonifera</i> ). Annual grasses and broad-leaved weeds. Perennial broad-leaved weeds.		
Time	Method	Dose Rate
Spray when perennial weeds are actively growing, especially after mid-October. Common couch/scutch should have at least 6 new leaves approx. 12 cm long.	Allow the weeds to make ample top growth and spray well before onset of frost or natural senescence. <b>After spraying:</b> <ul style="list-style-type: none"> <li>If before mid-November, wait at least 5 days before cultivating.</li> <li>If after mid-November, wait for perennial grass leaves to turn red/yellow before cultivating.</li> <li>Old crop residues must be chopped and incorporated or removed, after which normal cultivations may be resumed.</li> </ul>	<b>Annual weeds:</b> 1.2 l/ha <b>Perennial grass weeds:</b> 3.2 l/ha <b>Perennial broad-leaved weeds:</b> 4 l/ha Apply in 150-250 l/ha water.



STUBBLE/CULTIVATED LAND - ANNUAL WEEDS/VOLUNTEERS (all edible and non-edible crops)		
<b>Weeds Controlled:</b> Annual grasses and broad-leaved weeds. Volunteer cereals.		
<b>Crops:</b> Any crop to follow application.		
Time	Method	Dose Rate
<b>Autumn/spring/summer:</b> Spray when weeds are actively growing.  <b>For optimum control:</b> <ul style="list-style-type: none"> <li>Annual grasses should have at least 10cm (4") of green leaf.</li> <li>Annual broad-leaved weeds should have at least 2 true leaves.</li> </ul>	<b>After harvest or cultivations:</b> Allow ground to remain undisturbed for as long as practicable to allow weeds to regrow.  <b>After spraying:</b> <ul style="list-style-type: none"> <li>Wait at least 24 hours before cultivating.</li> <li>Wait at least 48 hours before drilling.</li> </ul>	1.2 l/ha  Apply in 80-250 l/ha water with the addition of authorised adjuvant ADJ 0325 at 0.5 litres per 100 litres of water to achieve optimum efficacy.

GRASSLAND DESTRUCTION		
<b>Grasses/Weeds Killed:</b> Annual and perennial grasses. Annual and perennial broad-leaved weeds.		
<b>Crops:</b> Any crop to follow application.		
Time	Method	Dose Rate
Spray when grasses and weeds are actively growing at the following times and growth stages:  <b>Annual grasses and annual broad-leaved weeds:</b> <ul style="list-style-type: none"> <li>Spring, summer or autumn.</li> <li>Annual grasses have at least 10cm (4") of green leaf.</li> <li>Annual broad-leaved weeds have at least 2 expanded true leaves.</li> </ul> <b>Perennial grasses and perennial broad-leaved weeds:</b> <ul style="list-style-type: none"> <li>Mid to late summer.</li> <li>Perennial grasses have at least 12cm (5") of leaf or 5 fully expanded leaves.</li> <li>Perennial broad-leaved weeds have substantial leaf area or are near flowering.</li> </ul>	<ul style="list-style-type: none"> <li>Lightly cut or graze and allow regrowth for about 4 weeks until the recommended growth stages are reached.</li> <li>Spray at the dose rate recommended for the weed or grass type.</li> <li>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.</li> <li>Surface mats of old grassland must be thoroughly broken by cultivations before reseeding - see also GENERAL INFORMATION and CULTURAL ADVICE (below).</li> </ul>	<b>1-2 years old, only annual weeds and grasses:</b> 2.4 l/ha  <b>2-4 years old, with perennial grasses:</b> 3.2 l/ha  <b>Long leys e.g. 4-7 years old with perennial broad-leaved weeds:</b> 4 l/ha  <b>Permanent grassland with ragwort or predominantly fine-leaved grasses:</b> 4.8 l/ha  Apply the recommended dose in 200-250 l/ha water.
<b>Important:</b> Livestock must be kept out of treated areas [for at least 5 days following treatment] IF RAGWORT IS PRESENT, FOLLOW THE GUIDANCE IN THE 'DIRECTIONS FOR USE'		

## CULTURAL ADVICE

### Direct drilling of grass after a short-term ley

Direct drilling may be practised after a short-term ley provided that all nutrient and lime deficiencies have been corrected and there is no surface trash.

### Sowing to grass after late-summer desiccation of long leys or permanent pasture with surface mats

Either: defer seeding until the following spring to allow surface mats to decompose.

Or: apply 2.5 tonnes/ha (1 tonne/ac) of ground limestone to the surface mat not less than seven days after treatment followed by rotary cultivation to break the surface mat and incorporate the ground limestone into the soil. Seeding may be conducted as required thereafter provided that the surface mat has been completely broken down and the seeds will be in contact with mineral soil.

GREEN COVER ON LAND TEMPORARILY REMOVED FROM PRODUCTION (SET-ASIDE)		
<b>Weeds Controlled:</b> Common couch/scutch ( <i>Elymus repens</i> ). Creeping bent ( <i>Agrostis stolonifera</i> ). Volunteer cereals.		
<b>Crops:</b> 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	Method	Dose Rate
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.	<ul style="list-style-type: none"><li>Do not cut or cultivate prior to applying this product in this situation.</li><li>Spray before weeds set seed</li><li>After spraying do not cut or cultivate until permitted to do so by the management rules; in any event do not cut or cultivate for 1 day (after 1.2 l/ha) or 5 days (after 2.4-4.8 l/ha) after application.</li></ul>	<b>Annual weeds and grasses except black-grass:</b> 1.2 l/ha  Apply in 80-250 l/ha water with the addition of authorised adjuvant ADJ 0325 at 0.5 litres per 100 litres of water to achieve optimum efficacy. (note - if the green cover is dense and/or well established, use the higher dose of 2.4 l/ha in 150-250 l/ha water as for low-medium couch/scutch - see below)  <b>Low-medium couch/scutch-grass infestations up to 75 shoots/m<sup>2</sup>:</b> 2.4 l/ha  <b>Medium-high couch/scutch-grass infestations over 75 shoots/m<sup>2</sup> and black-grass:</b> 3.2 l/ha  <b>Ragwort, deep-rooted perennial broad-leaved weeds and fine-leaved grasses present:</b> 4.8 l/ha  Apply in 150-250 l/ha water.

FORESTRY/WOODLANDS		
Use	Dose Rate	Remarks
<b>Before planting:</b> Most broad-leaved and grass weeds	4 l/ha <i>Hydraulic sprayers:</i> apply in 80-250 l/ha water. <i>Rotary atomisers:</i> apply in total spray volume of 40 l/ha.	If the ground has been disturbed by forestry operations, allow the weeds to recover. Apply when weeds are showing green leaf and are actively growing. Wait at least 7 days before any cultivation or before planting trees.
<b>After planting (as directed spray) in competitive forestry situations:</b> for cleaning-up around trees; conifer release;  Most annual and perennial grasses and broad-leaved weeds.  Broad-leaved woody weeds, bracken, beech, brush, bramble, sycamore, oak, hazel, willow, ash.  Heather (peat soils).  Heather (mineral soils)  Rhododendron	Use the 'Weedwiper Mini' or apply by knapsack sprayer. For knapsack application apply at the appropriate dose for the species to be treated as detailed below:  3.2 l/ha in 250 l/ha water  2.4 l/ha in 250 l/ha water  3.2 l/ha in 250 l/ha water  4.8 l/ha in 250 l/ha water  <i>By knapsack sprayer:</i> 8 l/ha or 6.4 l/ha in 250 l/ha water plus authorised adjuvant ADJ 0648 at 2% of final spray volume.  The Weedwiper Mini is not recommended for the control of rhododendron.	Use the 'Weedwiper Mini' (except rhododendron) or apply by knapsack sprayer around fully guarded trees. 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>Important</b> The time of hardening of leader growth in any year varies with species, location and weather amongst other factors; hardening might occur from end-July up to October or even later. Always direct the spray away from leaders to avoid damage to Lammas growth.
<b>Cut stump application to prevent regrowth of thinnings.</b>	<b>Deciduous species:</b> 1 volume product: 11 volumes of water (8% solution).  <b>Coniferous species:</b> 4 volume product: 21 volumes of water (16% 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>	<b>All species:</b> 1.6ml of undiluted product per cut. For trees more than 10cm diameter make 2 or 3 cuts according to tree size and inject 1.6ml 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 Glypho-Rapid 450 into each cut. Treat at any time of the year except during the period of rising sap flow usually occurring during March to May.
<b>Note:</b> 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 around the farm		
<b>Weeds Controlled:</b> Most annual and perennial weeds.		
Area of use	Dose Rate	Remarks
Around farm buildings, farm paths and farm roadways.  DO NOT SPRAY HEDGE BOTTOMS.	<b>General use:</b> 3.2 l/ha <b>Perennial broad-leaved weeds present:</b> 4.8 l/ha <i>Hydraulic sprayers:</i> apply in 80-250 l/ha water. <i>Knapsack sprayers:</i> apply in 100-250 l/ha water. <i>Rotary atomisers:</i> apply in total spray volume of 40 l/ha.	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 gully - do not overspray drains. Weeds germinating after application will not be controlled. Avoid drift onto crops, lawns, amenity plants or any desirable species. DO NOT USE UNDER GLASS OR POLYTHENE. See KNAPSACK RATE RECKONER tables.
<b>Important:</b> Livestock must be kept out of treated areas [for at least 5 days following treatment] IF RAGWORT IS PRESENT, FOLLOW THE GUIDANCE IN THE 'DIRECTIONS FOR USE'		

AQUATIC WEED CONTROL		
<b>Land immediately adjacent to aquatic areas</b>		
<b>Situations:</b> For weed control near watercourses and lakes in the presence or absence of fish. <b>Note:</b> Provided that use is as directed on this label, water may be used for irrigation or livestock without interruption. <b>Important:</b> Consult the appropriate regional water regulatory body (Environment Agency/Scottish Environment Protection Agency) responsible for the water catchment area before applying any treatment 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.		
Weed Species	Dose Rate	Remarks
<b>Waterside weeds:</b>	Treat as for NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION.	As for NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION.

TOP FRUIT ORCHARDS		
<b>Weeds Controlled:</b> Most annual and perennial weeds.		
Crops	Time and Method	Dose Rate
Established (minimum 2 years) trees of: Apple Pear Cherry Damson Plum	Apply as a directed MEDIUM or COARSE quality spray. Spray after leaf fall in autumn to before green cluster stage of apple and pear or white bud stage of stone fruit. Avoid spraying or allowing drift to contact the trunk above 30cm from the ground, or any branches. Spray must not contact any damaged bark.	4 l/ha in 200-400 l/ha water.

## 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 Glypho-Rapid 450 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.

### Glypho-Rapid 450 dilution

Maximum concentrations must not exceed the following:

Weedwiper Mini:	2 volumes product : 5 volumes water
Other wipers:	4 volumes product : 6 volumes water for normal conditions; under warm, dry conditions use 2:5 dilution with water.

Weedwipers may be used in any crop where the wiper does not touch the growing crop.

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

### 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 5 cm (2") between the top of the tallest desired vegetation and the impregnated wiper. Bolters should be a minimum 10 cm (4") taller than the desired vegetation for safe application.

### MIXING

Pour the recommended quantity of Glypho-Rapid 450 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.

#### Knapsack sprayers

Add the recommended quantity of Glypho-Rapid 450 to the knapsack spray tank approximately one-third filled with clean water. Agitate thoroughly with a clean rod or by shaking after replacing the lid until thoroughly mixed. Top up the tank with more clean water to the required level and agitate thoroughly before use. Spray out on the day of mixing.

DO NOT MIX, APPLY OR STORE GLYPHO-RAPID 450 IN GALVANISED OR UNLINED MILD STEEL CONTAINERS OR TANKS. KEEP TANKS WELL VENTED AND CLEAR OF ALL SOURCES OF IGNITION.

## APPLICATION & SPRAY QUALITY

### Conventional hydraulic sprayers

#### Knapsack sprayers

Prepared spray solution should be applied as a MEDIUM or COARSE spray (BCPC definition) at nozzle pressures not exceeding 2.5 bar (35 psi). Glypho-Rapid 450 is a systemic weedkiller and is active at low doses. **Extreme care must be taken to avoid spray drift onto non-crop plants outside the target area. 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

Glypho-Rapid 450 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 Glypho-Rapid 450.

### FUTURE PLANTING

Glypho-Rapid 450 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 Glypho-Rapid 450. 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 Manufacturing 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.