

# Amega Duo

Contains 540 g/l glyphosate (acid equivalent) present as 715 g/l isopropylamine and ammonium salts.

**A foliar applied herbicide for the control of annual and perennial grasses and broad-leaved weeds before sowing or planting all crops. For use pre-emergence and pre-harvest in cereals, oilseed rape and certain other crops, destruction of grassland, and in stubbles, orchards, forestry, non-crop areas and on set-aside land.**

## PRODUCT BENEFITS

- Unique patented dual salt technology with the benefit of the ammonium salt as well as the IPA salt.
- A fresh approach for the use of glyphosate.
- Flexibility to tank mix with an adjuvant of choice to get optimum results.
- Good label with a wide range of crops and situations.

**LERAP category:** Unclassified

**Pack size:** 15, 650, 1000 litres

**Storage:** PROTECT FROM FROST



## IMPORTANT INFORMATION

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

Crop	Maximum ind. dose + approved adjuvant	Max. total dose per crop/ situation/ annum	Latest time of application
Winter wheat (including durum wheat), winter barley, winter oats, spring wheat, spring barley, spring oats	2.67 l/ha	2.67 l/ha	Seven days before harvest
Oilseed rape			14 days before harvest
Linseed			
Mustard			
Combining peas			Seven days before harvest
Post planting and pre-emergence of listed cereals, oilseed rape, combining peas, vining peas, field beans, mustard, linseed, sugar beet, swedes, turnips, bulb onions and leeks	1.0 l/ha	1.0 l/ha	Pre-emergence
All edible crops (stubble), All non-edible crops (stubble)	2.67 l/ha or 1.0 l/ha	2.67 l/ha  1.0 l/ha	Five days before drilling or planting of the following crop  Two days before drilling or planting of the following crop
Grassland	4.0 l/ha	4.0 l/ha	Five days before harvest, grazing or drilling
Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces		–	–
Amenity vegetation	3.33 l/ha		
All edible and non-edible crops (destruction, before sowing/planting)	4.0 l/ha		Before planting or sowing
Apple and pear orchards	3.33 l/ha	3.33 l/ha	After harvest (post leaf-fall) but before green cluster
Plum, cherry and damson orchards			After harvest (post leaf-fall) but before white bud
– Forest (weed control)	6.67 l/ha	–	–
– Forest (chemical thinning by injection)	1.33 ml product per cut per <sup>#</sup> 10 cm diameter (or less) tree <sup>#</sup>		
– Forest (stump)	See 'other specific restrictions' <sup>#</sup>		
Green cover on land not being used for crop production	3.33 l/ha	3.33 l/ha	–

**Other specific restrictions:**

When using with rotary atomiser knapsack sprayers the minimum water volume must be 20 l/ha  
The empty bulk container must be returned to the supplier.

The empty container must not be used for any other purpose.

\*AMEGA DUO does not need to be mixed with an authorised adjuvant.

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

Maximum concentrations used must not exceed the following:

Weed-wiper mini 1:3.5 dilution with water

Other wipers 1:2 dilution with water

Stump treatment 13.33% solution in water

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.

MAPP 13358

MAPP 14131

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

## 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

TAKE EXTREME CARE TO AVOID SPRAY DRIFT.

DO NOT MIX, STORE OR APPLY AMEGA DUO 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 of at least 12 hours and preferably 24 hours rain free must follow spraying.

DO NOT spray onto weeds which are naturally senescent, or where growth is impaired by drought, high temperatures, 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 could severely damage or destroy them.

As AMEGA DUO takes a few days to fully translocate throughout a weed, applications of lime, fertiliser, farmyard manure and pesticides should be made five days or more AFTER application of this product.

Keep stock out of treated areas for seven days to allow the herbicide to become fully effective.

TREATED POISONOUS PLANT SPECIES MUST BE REMOVED BEFORE REGRAZING OR CONSERVING.

### WEED RESISTANCE STRATEGY

There is low risk for the development of weed resistance to AMEGA DUO.

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

- Following label recommendations.
- The adoption of complimentary weed control practices.
- Minimising the risk of spreading weed infestations.
- The implementation of good spraying practice to maintain effective weed control.
- Using the correct nozzles to maximise coverage.
- Application only under appropriate weather conditions.
- Monitoring performance and reporting any unexpected results to Nufarm UK Limited.

Strains of some annual weeds (e.g. Blackgrass, Wild oat and Italian ryegrass) 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 adviser or Nufarm UK Ltd.

### WEEDS CONTROLLED

**AMEGA DUO is for use in tank-mix only with authorised adjuvants. DO NOT use AMEGA DUO ALONE unless stated.**

AMEGA DUO is a foliar acting herbicide which 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.

PERENNIAL GRASS WEEDS MUST HAVE A FULL EMERGENCE OF HEALTHY, GREEN LEAF WHICH IS GROWING ACTIVELY AT THE TIME OF APPLICATION. COMMON COUCH REACHES THE SUSCEPTIBLE STAGE OF GROWTH WHEN TILLERING AND NEW RHIZOME GROWTH COMMENCE WHICH USUALLY OCCURS WHEN PLANTS HAVE FOUR TO FIVE LEAVES EACH WITH 10–15 CM OF NEW GROWTH.

THE MAJORITY OF PERENNIAL BROAD-LEAVED WEEDS ARE MOST SUSCEPTIBLE IF TREATED WHEN THEY ARE GROWING ACTIVELY AND AT, OR NEAR, FLOWERING STAGE.

ANNUAL WEEDS SHOULD BE GROWING ACTIVELY, WITH GRASSES HAVING AT LEAST 5 CM OF LEAF AND BROAD-LEAVED WEEDS AT LEAST TWO EXPANDED TRUE LEAVES WHEN SPRAYED.

It is important that all weeds are at the correct growth stage when treated, otherwise some re-growth may occur and this will require re-treatment.

This product will not give acceptable levels of control of Horsetails (*Equisetum arvense*). Repeat treatment will be necessary.

Weeds become less susceptible to AMEGA DUO when their growth is restricted by natural senescence or by drought, frost, high temperature, a covering of dust or flooding. Reduced control will result if such conditions occur at, or immediately after, spraying.

## TANK MIXTURES

Nufarm recommends that AMEGA DUO can be tank-mixed with the following adjuvants:

Bonser (A0601)  
 Binder (A0598)  
 Frigate (A0325)

Where conventional hydraulic sprayers are being used:

**Bonser** should be added to the spray tank solution at the rate of 1.0 litre for each 100 litres water volume;  
**Binder** should be added to the spray tank solution at the rate of 0.5 litres for each 100 litres water volume;  
**Frigate** should be added to the spray tank solution at the rate of 0.5 litres for each 100 litres water volume.

Do not tank mix this product with fertilizers or other pesticides.

## GRASSLAND

### Dose rate – 2.0 l/ha + approved adjuvant

Chickweed, mouse-ear	Mayweed species	Ryegrass, Italian
Dock, seedlings	Meadow grass, annual	Speedwell species
Fescue, meadow	Meadow grass, rough	Timothy
Foxtail, meadow		

### Dose rate – 2.67 l/ha + approved adjuvant

Bent, black	Cocksfoot	Plantains
Bent, common	Couch, common	Ryegrass, perennial
Bent, creeping	Dock, broad-leaved	Soft-grass, creeping
Brome, soft	Dock, curled	Yorkshire fog

**Dose rate – 3.33 l/ha + approved adjuvant**

Bracken**	Nettle, common	Sowthistle, perennial
Buttercup, creeping	Rush, soft	Thistle, creeping
Clover, red	Sedges	Thistle, dwarf
Daisy	Sorrel, common	Thistle, spear
Hair-grass, tufted	Sorrel, sheep's	Yarrow

**Dose rate – 4.0 l/ha + approved adjuvant**

Clover, white*	Nardus (Mat grass)	Rush, hard
Fescue, red	Ragwort, common	Rush, heath
Fescue, sheep's	Rattle, yellow	Rush, jointed
Moor-grass, purple		

\* Correct stage of growth at treatment is important. White clover is best cut in June and sprayed one month later.

\*\* At full frond expansion.

**Forestry**

These recommended application rates refer to use in forestry areas only. If used in agricultural or horticultural situations inadequate weed control will result.

*Dose rate*

Lowland Britain – 1.0 l/ha + approved adjuvant

Upland Britain – 1.33 l/ha + approved adjuvant

Bent, black	Fescues	Moor-grass, purple	Vernal, sweet
Other Bent species	Hair-grass, tufted	Oat-grass, false	Wood, small-reed (Bush grass)
Cocksfoot	Hair-grass, wavy	Soft-grass, creeping	
Couch, common	Meadow grasses		

**BREAKDOWN AND FOLLOWING CROPS**

All edible or non-edible crops may be sown or planted at specified intervals following the use of this product.

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 the decaying organic matter.

Consolidate loose soils and ensure crops are adequately fertilized and appropriate measures are taken to prevent insect and fungal damage to the following crop, especially where following grassland.

## CROP SPECIFIC INFORMATION

### PRE-HARVEST – Wheat (including durum wheat), barley and oats

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Common couch	Up to 25 shoots/m <sup>2</sup>	1.33 l/ha	Hydraulic sprayers 80–250 l/ha
	26 to 75 shoots/m <sup>2</sup>	2.0 l/ha	
	Over 75 shoots/m <sup>2</sup> In direct drilled crops	2.67 l/ha	
Perennial broad-leaved weeds, other perennial grasses	All levels of all species		
Harvest management	Annual grasses, Cereal stems, Cereal leaves	0.67 l/ha	
	Annual broad-leaved weeds	1.0 l/ha	

#### Application guidance

Apply when the moisture content of the youngest crop grains is below 30%, not less than seven days before harvest and up to 14 days before harvest for volunteer wheat and wheat crops. Use high clearance tractors with narrow wheels and crop dividers. **DO NOT TREAT CROPS GROWN FOR SEED.** Straw may be used for all purposes except as a horticultural mulch. After harvest, chop/incorporate or remove straw as required. Normal cultivations may be made after straw removal.

**NB If dull weather persists after application, allow up to 14 days before harvest – particularly on broad-leaved weeds. Annual nettle, Volunteer potato, Rosebay willowherb and the Polygonum weeds will not be susceptible at harvest management rates.**

### PRE-HARVEST – Oilseed rape and mustard

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Crop desiccation prior to direct combine harvesting		2.0 l/ha	Hydraulic sprayers only 100–250 l/ha
Common couch	Up to 75 shoots/m <sup>2</sup>		
	Over 75 shoots/m <sup>2</sup>	2.67 l/ha	
Annual weeds	All levels of all species	2.0 l/ha	
Perennial broad-leaved weeds, other perennial grasses		2.67 l/ha	

#### Application guidance

Apply when crop seeds have under 30% moisture content. Apply to standing crops at these intervals before harvest: Oilseed rape – 14–21 days, Mustards – 14 days. Use high clearance narrow wheeled tractors using wide booms and crop dividers. **DO NOT TREAT CROPS GROWN FOR SEED.**

For effective combining: DO NOT treat crops with significant levels of secondary re-growth. DO NOT treat late maturing areas of crops affected by pigeon damage, poor drainage, etc. Crops suffering from stress factors, disease, extreme heat or drought may not mature evenly following treatment. After harvest, chop/incorporate or remove straw as required. Normal cultivations may follow after straw removal.

### PRE-HARVEST – Peas for combine harvesting

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Common couch	Up to 75 shoots/m <sup>2</sup>	2.0 l/ha	Hydraulic sprayers 80–250 l/ha
	Over 75 shoots/m <sup>2</sup>	2.67 l/ha	
Annual weeds	All levels of all species	2.0 l/ha	
Perennial broad-leaved weeds, other perennial grasses		2.67 l/ha	

#### *Application guidance*

Apply when crop seeds have under 30% moisture content. Apply seven days or more before harvest. This treatment cannot be used as a crop desiccant. Use high clearance tractors with narrow wheels and crop dividers. DO NOT TREAT CROPS GROWN FOR SEED.

### PRE-HARVEST – Linseed

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Crop desiccation prior to direct combine harvesting		2.0 l/ha	Hydraulic sprayers only 80–250 l/ha
Common couch	Up to 75 shoots/m <sup>2</sup>	2.67 l/ha	
	Over 75 shoots/m <sup>2</sup>		
Perennial broad-leaved weeds, other perennial grasses	All levels of all species		

#### *Application guidance*

Apply when crop seeds have under 30% moisture content. At this stage seed is normally light brown and the capsules are brown; the stems and leaves may be green to yellow/green. Accurate measurements of moisture content must be made. Apply 14 days or more before harvest. Where application takes place in the autumn, it must be checked that weeds are still susceptible, see earlier section on timing of application and weeds susceptibility. A delay of up to 28 days after spraying may be necessary prior to combine harvesting. DO NOT TREAT CROPS GROWN FOR SEED.

## PRE-EMERGENCE OF THE CROP

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Cereals Oilseed rape Mustard Linseed Peas Field beans Sugar beet Swede Turnip Bulb onion Leek	All levels of all annual weed species	1.0 l/ha	Hydraulic sprayers only 80–250 l/ha

### *Application guidance*

Ensure that spraying precedes ANY crop emergence.

## STUBBLES OF ALL CROPS – Autumn or spring

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Common couch	Up to 75 shoots/m <sup>2</sup>	2.0 l/ha	Hydraulic sprayers 80–250 l/ha
	Over 75 shoots/m <sup>2</sup>	2.67 l/ha	
Other perennial grasses Volunteer potatoes (autumn only)	All levels of all species		

### *Application guidance*

Do not cultivate BEFORE spraying. Allow a minimum of five days to elapse between spraying and cultivations or drilling. Allow volunteer potatoes to make ample top growth before spraying. A minimum period of 21 days weed growth in the spring should occur before spraying.

## STUBBLES OR PRE-CULTIVATED LAND – Autumn or spring

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Volunteer cereals Other annual grasses, Annual broad-leaved weeds	All levels of all species	1.0 l/ha	Hydraulic sprayers 80–250 l/ha

### Application guidance

Cultivations may be made 24 hours after spraying. Direct drilling may take place two days after spraying.

### SET-ASIDE – Green cover on land temporarily removed from production

Target weed	Weed infestation		Dose rate + approved adjuvant	Water volume
Before or during removal from production	Common couch Population < 75 shoots/m <sup>2</sup>		2.0 l/ha	Hydraulic sprayers 80–250 l/ha
	Population > 75 shoots/m <sup>2</sup>		2.67 l/ha	
	Perennial broad-leaved weeds and other perennial grasses		2.67 l/ha	
	Annual weeds Autumn/spring of year one only		1.0 l/ha	
	Summer of year one and thereafter		2.0 l/ha	
After short rotation or long term removal from production	Natural regeneration and cover crop destruction	Annual weeds	2.0 l/ha	
		Perennial grasses	2.67 l/ha	
		Perennial broad-leaved weeds	3.33 l/ha	

### Application guidance

Perennial weeds should have grown actively for at least 21 days before spring applications.

Perennial weeds – apply not less than five days before drilling or cultivating.

Annual weeds – apply not less than 24 hours before cultivation.

#### NOTE:

- Ensure that all management rules are followed prior to use on land taken out of production as part of a grant aided scheme.
- Do not top or cultivate before spraying.
- Do not direct drill after set-aside.

The best control of annual grasses is achieved from applications at full ear emergence or before stem elongation. Avoid application during stem elongation as reduced control and re-spray is likely.

## GRASSLAND DESTRUCTION AND CONTROL OF ASSOCIATED WEEDS

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Short-rotation ryegrass with annual weeds	See under 'Weeds controlled'	2.0 l/ha	Hydraulic sprayers 150–250 l/ha
Leys two to four years old with perennial grass weeds		2.67 l/ha	
Long leys four to seven years old with perennial broad-leaved weeds		3.33 l/ha	
Permanent pasture – select application rate to control the least susceptible target weed		4.0 l/ha	

### Application guidance

DO NOT apply lime or fertiliser prior to AMEGA DUO application.

### Treatment timings

1. Re-growth after grazing or mowing.
2. Before grazing or cutting.
  - Apply between June–October.
  - Spray crops that are 30–60 cm tall, are not dense and do not contain mature seeds.

### Grass utilisation

1. Grass may be utilised in the normal way from five days after treatment.
2. Cattle, dairy cows and sheep may graze or be fed the treated forage.

POISONOUS PLANT SPECIES MUST BE REMOVED OR BURIED BEFORE RE-GRAZING OR MOWING.

Normal cultivations for the next crop may be made as usual once fields are cleared of grass crops. Grass and clover may be direct drilled following application of AMEGA DUO to: (a) One – two year old leys without mat: all surface trash should be removed before drilling, five days after spraying, or (b) long leys with some mat: AMEGA DUO should be applied in the autumn and direct drilling delayed until the following spring.

## LAND NOT INTENDED TO BEAR VEGETATION

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Annual weeds	All species	1.0 l/ha	Hydraulic sprayers 80–250 l/ha
Perennial grasses		2.67 l/ha	
Perennial broad-leaved weeds Destruction of established vegetation prior to sowing (Refer to section Hand-held applicators)		4.0 l/ha	

*Application guidance*

Use areas include: clearance of land prior to sowing, weed control in fence lines, stockyards, around buildings and storage areas, Roads paths and ditch edges, Re-growth in root crop storage areas. **DO NOT USE IN OR ALONGSIDE HEDGEROWS. DO NOT USE UNDER GLASS OR POLYETHYLENE.**

**AMENITY VEGETATION**

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Annual weeds	All species	1.0 l/ha	Hydraulic sprayers 80–250 l/ha
Perennial grasses and broad-leaved weeds		2.67 – 3.33 l/ha	

*Application guidance*

For vegetation management in areas of semi natural or ornamental vegetation including trees, areas of bare soil around ornamental plants or areas intended for ornamental planting hydraulic sprayers or weed wipers may be used.

**DO NOT USE IN OR ALONGSIDE HEDGEROWS.**

**DO NOT USE UNDER POLYTHENE OR GLASS**

**TOP FRUIT ORCHARDS – Pre-planting**

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Perennial grasses and broad-leaved weeds – arable stubbles – pastures	All levels of all species	2.67 l/ha 3.33 l/ha	Hydraulic sprayers 80–250 l/ha

*Application guidance*

Refer to Timing of Application. All top fruit crops may be planted from seven days after spraying.

**TOP FRUIT ORCHARDS – Within orchards of apple, pear, plum, cherry or damson**

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Perennial grasses and broad-leaved weeds	All levels, most species	3.33 l/ha	Hydraulic sprayers 200–400 l/ha. Optimum 250 l/ha
Root suckers (late spring treatment only)	All species		

*Application guidance*

Trees must have been established for two years before spraying. Spray after fruit trees have lost all their leaves in autumn, or before green clusters stage of apple and pear or white bud stage of stone fruit in spring. Avoid contact with tree branches and trunks above 30 cm from the ground.

## FORESTRY – Pre-planting

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Arable land and planting	Arable weeds	2.67 l/ha	Hydraulic sprayers 80–250 l/ha
Re-planting and grassland areas	Grassland weeds	3.33 l/ha	

### Application guidance:

All tree species may be planted seven days or more after treatment.

## FORESTRY – Post-planting – directed

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Clean-up around trees with knapsack applications Conifer release	<b>Grasses:</b> annual and perennial, and broad-leaved weeds	2.67 l/ha	Knapsack sprayers (hydraulic). Apply at a concentration of one part of AMEGA DUO with 200–250 litres of water per hectare. Spot gun and Weedwiper mini – see application section
	<b>Woody weeds:</b>		
	Bracken, Beech	2.0 l/ha	
	Brush, Brambles	2.0 l/ha	
	Sycamore, Oak, Hazel	2.0 l/ha	
	Willow, Ash	2.0 l/ha	
	Heather (peat soils)	2.67 l/ha	
Heather (mineral soils)	4.0 l/ha		
	Rhododendron <sup>#</sup>	6.67 l/ha	

### Application guidance

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. All other woody weeds – treat June–August before leaf senescence (but after new growth of crop has hardened).

<sup>#</sup> for improved control of Rhododendron add High Trees Mixture B at a concentration of 2% final water volume to 5.33 l/ha of AMEGA DUO. For Rhododendron control cut back and treat re-growth at least one metre in height throughout the entire coppice.

## FORESTRY – Post-planting (overall dormant season)

Target weed	Weed infestation	Dose rate + approved adjuvant	Water volume
Grass weeds – Lowland areas – Upland areas	See under 'Weeds controlled'	1.0 l/ha	Hydraulic sprayers 80–250 l/ha or hand-held equipment – see Application section.
		1.33 l/ha	
Bracken, Beech Birch Brambles	All levels of all species	1.33 l/ha	
		2.0 l/ha	

### Application guidance

DO NOT OVERALL SPRAY trees being grown for ORNAMENTAL PURPOSES, including CHRISTMAS TREES. Species safe to spray when fully dormant and leader growth has hardened: Corsican, Lodgepole and Scots pines, Norway spruce, Sitka spruce, Lawson cypress, Western red cedar. Douglas fir and Nobel fir – safe to spray when fully dormant and leader growth has hardened but NOT in spring. If overall application takes place after the optimum timing 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. Treat bracken after frond tips are unfurled but pre-senescence.

**CAUTION:** the timing of hardening of leader growth varies between locations and 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.

## FORESTRY – Stump application for chemical thinning

Target weed	Weed infestation	Dose rate	Water volume
Prevention of coppicing and re-growth from stumps	Deciduous species	6.6% solution of AMEGA DUO in water	Hydraulic sprayers 80–250 l/ha or hand-held equipment – see Application section
	Coniferous species	13.3% solution of AMEGA DUO in water	

For stump application AMEGA DUO does not need to be mixed with an adjuvant.

### Application guidance

Apply to saturate the freshly cut stump. (See Hand-held sprayers.)

- Clearing saw fitted with Enso attachments.
- Knapsack sprayer operated at low pressure.
- Spot gun fitted with a solid stream nozzle.
- Paintbrush.

Treat stumps within a week of felling from November to March (outside spring sap flow). Do not cut trenches or drill holes and fill with the solution or use undiluted product.

## FORESTRY – Chemical thinning by injection of tree stumps

Target weed	Weed infestation	Dose (l/ha)	Water volume
Coniferous and Deciduous species	–	1.33 ml neat AMEGA DUO per cut per 10 cm diameter of stem (or less)	–

For stump application AMEGA DUO does not need to be mixed with an adjuvant.

### *Application guidance*

Use a hatchet to cut one notch in trees up to 10 cm diameter and apply 1.33ml of the solution to each cut e.g. using a spot gun. Use two or three notches in trees over 10 cm diameter. Do not treat in the period of active sap flow in the spring/early summer.

## SPRAY APPLICATION EQUIPMENT AND TECHNIQUES

### Tractor mounted applicators

#### Conventional hydraulic sprayers

##### *Sprayer and nozzle selection*

All machines capable of applying accurately 80–250 l/ha, as a MEDIUM or COARSE quality spray – (BCPC definition) within a pressure range of 1.5–2.5 bars using 80° or 110° nozzles, may be used. For application pre-harvest of crops it is essential to use a sprayer whose boom can be raised to the correct height.

##### *Water volume*

For general use 200–250 l/ha is the preferred volume range. For specific uses, volumes may be reduced to 80–120 l/ha by selecting low volume hydraulic nozzles and adjusting pressure of application and tractor forward speed.

##### *Spray pressure*

Pressures must be related to tractor forward speed, desired water volume and nozzle type. A range of 1.5–2.5 bars must be used to ensure optimum results with minimum risk of drift.

##### *Tractor forward speed*

Speed of travel must be related to nozzle output characteristics. The typical range is from 4–9 kph. The slower speeds should be selected for applications pre-harvest of crops and where soil conditions could cause excessive boom bounce and yaw at the faster speeds.

##### *Recommended nozzle type, pressure, volumes and tractor speeds for the application of 80–120 l/ha*

80° or 110° nozzles able to apply the required volume at pressures between 1.5–2.5 bars at between 4–9 kph are recommended.

##### *Filling the sprayer*

Half fill the spray tank with water and start agitation. Add recommended quantity of AMEGA DUO herbicide, top-up tank with water to required level.

##### *Calibration*

Before using the sprayer and, especially, after nozzles have been changed, it is essential to calibrate the sprayer by checking the output of at least one nozzle for each separate boom section of the sprayer.

##### *Operation in the field*

Check the following before starting to spray: that the nozzles are aligned evenly at the correct angle to the direction of travel; that the boom is level over its width; that the boom height permits the correct pattern of spray overlap on the target weeds.

### Sprayer maintenance

Ensure that the sprayer is in good working order by paying particular attention to the condition of the pump, hoses, nozzles or disc assemblies and pressure gauge. Replace damaged, worn or malfunctioning parts. If extra filtration or pressure damp valves have been fitted for low volume work at 80–120 l/ha make certain this equipment is clean and functioning correctly. Carry out maintenance according to the instructions of the sprayer manufacturer. This is of utmost importance when using low volume nozzles.

### Hygiene when using all sprayers

It is essential to thoroughly clean out sprayer 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.

## Hand-held applicators

### Spot or directed application

Knapsack applicator: These may be used in forestry, orchards and non-crop areas. Normal water volume is 200–300 l/ha but by fitting low volume nozzles it can be reduced to 100–150 l/ha. All applications to be as a MEDIUM or COARSE quality spray (BCPC definition).

Example of use:

At a walking speed of 1.0 m/sec and with a one metre wide swath most knapsack sprayers fitted with a Lurmark AN 2.0 or similar nozzle deliver 200 l/ha spray volume. To apply 2.67 l/ha of AMEGA DUO use 26 ml of product for each two litres of spray liquid required.

### Spot Gun

This applicator may be used to apply an accurately measured dose of AMEGA DUO herbicide spray solution for the spot treatment of weeds.

Amount of AMEGA DUO (ml) per five litres of spray solution when the Spot Gun is fitted with the TG-SS2.8W nozzle, using a setting of 5 ml per squeeze of the trigger:

Spot diameter (m)	Dose rate of AMEGA DUO (ml)		
	2.0 l/ha	2.67 l/ha	3.3 l/ha
0.3	80	100	150
1.0	120	160	240

### Treatment of individual weeds

Individual weeds may be treated using the Spot Gun fitted with a narrow angle cone nozzle, either the TG-3 or TG-5 nozzle. The spot diameter will increase with the distance of the target weed from the nozzle tip.

Amount of AMEGA DUO (ml) per five litres of spray solution when the Spot Gun is fitted with the TG-3 or TG-5 nozzle, using a setting of 5 ml per squeeze of the trigger:

Spot diameter (m)	Dose rate of AMEGA DUO (ml)		
	2.0 l/ha	2.67 l/ha	3.3 l/ha
0.3	13	19	23
0.6	57	73	93

### Tree injection

The applicator must be fitted with a solid stream nozzle, either a Spraying System 0006 or a Delavan LF 6.0. Set the gun to apply 1.33 ml of neat AMEGA DUO per cut.

### Stump treatments

The applicator must be fitted with a narrow angle cone nozzle, either the TG-3 or TG-5 or solid stream nozzle tips either a Delavan LF 6.0 or Spraying Systems 0006.

Set the gun to deliver 3.33 ml per squeeze and select the concentration of AMEGA DUO according to usage recommendations. A dose of 3.33 ml should be applied for each 5 cm diameter of tree stump.

### Cut stump application

Enso attachment to rotary saws

This technique is specific to scrub clearance in Forestry. The water soluble dye Methyl Violet Gurr may be added to AMEGA DUO at a concentration of 0.01% to help identify treated stumps. This is equivalent to the addition of 1ml of dye to 10 litres of spray liquid.

### Tractor mounted wipers

Treatment of sugar beet bolters, weed beet and other weeds: For use in arable crops, grassland and forestry areas. Ensure there is at least 5 cm between the top of the tallest desired vegetation and the impregnated wiper. Weeds should be a minimum of 10 cm taller than the desired vegetation for safe application. Two passes in opposite directions will be needed where weeds are dense and successive applications will be required to control weeds that were below the original wiping level. Treat before weed seeds have matured to reduce to a minimum seed return to the soil. Bolting beet should be treated by a series of three applications during early July to early August with two weeks between treatments.

**WEEDS MUST BE GROWING ACTIVELY TO BE SUSCEPTIBLE. DO NOT USE WIPER TECHNIQUES IN SOFT FRUIT CROPS.**

### Recommended machines and dilution rates

Hectaspan Weedwiper

Tecnomat Top Weeder

Keenan Weed Licker

Telford Homburg Chemical Applicator

Matrot Mobilcord

Vicon Wedge-Wik

The recommended concentration is at least one part of AMEGA DUO herbicide to two parts water. Under hot, dry conditions a concentration of one part of AMEGA DUO herbicide to two parts water is preferred.

For best results with all wiper applicators

- Operate at speeds below 5 kph.
- Treat when weeds reach 10 cm above the desired vegetation.
- Keep wiping surfaces wet but prevent dripping.
- Clean ropes several times a day to maintain optimum flow rate.

**AMEGA DUO**

**Contains 540 g/l glyphosate (acid equivalent) present as 715 g/l isopropylamine and ammonium salts.**

**MAY CAUSE LONG TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.**

**To avoid risks to man and the environment, comply with the instructions for use.**

**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 or applying the concentrate or when handling contaminated surfaces.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using hand-held equipment.

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

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

WHEN USING DO NOT EAT, DRINK OR SMOKE.

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 via drains from farmyards and roads.)

Extreme care must be taken to avoid spray drift on to non-target plants outside of the target area.

On emptying the container, RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of container safely.

**Storage and disposal**

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDSTUFFS.

KEEP OUT OF THE REACH OF CHILDREN.

Bulk containers (650 + 1000 litres)

OPEN CONTAINER ONLY AS DIRECTED.

RETURN THE CONTAINER FOR RE-USE BY YOUR DISTRIBUTOR.

DO NOT RE-USE CONTAINER FOR ANY OTHER PURPOSE.

Products sold in bulk must only be transferred from the top of the container using the correct dry brake coupling system.