

Clinic ACE

An aqueous concentrate containing 360 g/l glyphosate (acid equivalent) present as 480 g/l (41.1% w/w) of the isopropylamine salt of glyphosate.

A foliar applied herbicide for the control of annual and perennial grass and broad-leaved weeds before sowing or planting all crops. For use pre-harvest in cereals and certain other crops, destruction of grassland, and in stubbles, orchards, green cover on land not being used for production, forestry and non-crop areas.

PRODUCT BENEFITS

- A quality glyphosate formulation.
- Wide range of crop and non-crop uses.
- Can be used through many different applicators.

LERAP category: Unclassified

Pack size: 5, 10 & 20 litres

Storage: PROTECT FROM FROST



IMPORTANT INFORMATION

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

Crop	Maximum individual dose	Maximum number of treatments	Latest time of application
Winter Wheat, winter barley, winter oats, spring wheat, spring barley, spring oats, durum wheat	Full details are given in DIRECTIONS FOR USE		
Oilseed rape and linseed			
Mustard			
Combining peas, field beans			
All edible crops (stubble), all non-edible crops (stubble)			
Grassland			
Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces			
Destruction of established vegetation prior to sowing/planting			
Apple and pear			
Plum, cherry and damson			
Green cover on land not being used for production			
Forestry nursery, forest			

Other specific restriction:

- For stump application, the maximum concentration must not exceed 250 g of product/litre of 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.

MAFF 12980

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

EXTREME CARE SHOULD BE TAKEN TO AVOID SPRAY DRIFT AS THIS CAN SEVERELY DAMAGE OR DESTROY NEIGHBOURING CROPS AND PLANTS.

DO NOT MIX, STORE OR APPLY CLINIC ACE 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 six hours and preferably 24 hours without rainfall must follow applications of CLINIC ACE.

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

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

WEEDS CONTROLLED

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

ANNUAL GRASSES AND BROAD-LEAVED WEEDS should have at least 5 cm of leaf, or two expanded true leaves, respectively.

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-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.

IN SET-ASIDE, annual grasses are best treated at full ear emergence, or before stem elongation. Application during stem extension phase of annual grasses e.g. Blackgrass and Brome species on set-aside between end April and end May may result in poor control and require re-treatment.

BRACKEN should be treated after frond tips are unfurled, but pre-senescence.

CLINIC ACE will not give an acceptable level of control of Horsetails (*Equisetum arvense*) – repeat treatment will be necessary.

Weeds become less susceptible to CLINIC ACE 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.

BREAKDOWN AND FOLLOWING CROPS

Upon soil adsorption the herbicidal properties of CLINIC ACE are lost permitting the drilling of crops 48 hours after application.

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 fungus damage to the following crop, especially where following grassland.

WEED RESISTANCE STRATEGY

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

Growers are encouraged to implement a weed resistance strategy based on good agricultural practices and 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 and Nufarm.

SPRAYER HYGIENE

It is essential to thoroughly clean out spray tanks, pumps and pipelines and nozzle or disc assemblies, with a recommended detergent cleaner, between applying this product and other pesticides to avoid contamination from pesticide residues. Traces of CLINIC ACE left in the equipment may seriously damage or destroy crops sprayed later.

CROP SPECIFIC INFORMATION

IMPORTANT INFORMATION

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

Crop situations	Maximum individual dose	Maximum number of treatments	Latest time of application
Winter wheat, winter barley, winter oats, spring wheat, spring barley, spring oats, durum wheat, combining peas, field beans	4.0 l/ha	One per crop	Seven days before harvest
Oilseed rape and linseed	4.0 l/ha	One per crop	14 days before harvest
Mustard	4.0 l/ha	One per crop	Eight days before harvest
All edible crops (stubble), All non-edible crops (stubble)			
Either:	4.0 l/ha	One per situation	Five days before drilling or planting of the crop
or:	1.5 l/ha	One per situation	Two days before drilling or planting of the following crop
Grassland	6.0 l/ha	One per annum	Five days before harvest, grazing or drilling
Natural surfaces not intended to bear vegetation, permeable surfaces overlaying soil, hard surfaces	5.0 l/ha	–	–
All edible and non-edible crops (Destruction before sowing/planting)	5.0 l/ha	One per annum	Before planting or sowing
Apple and pear orchards	5.0 l/ha	One per annum	After harvest but before green cluster stage
Cherry, plum and damson orchards	5.0 l/ha	One per annum	After harvest but before white bud stage
Green cover on land not being used for production, e.g. set aside	6.0 l/ha	One per year	24 hours before cultivating

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IMPORTANT INFORMATION

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

Crop situations	Maximum individual dose	Maximum number of treatments	Latest time of application
Forestry nursery, forest: – Weed control – Chemical thinning (by injection) – Stump application	10 l/ha 2 ml per cut per 10 cm diameter (or less) tree. See 'other specific restrictions'		

Other specific restrictions:

- For stump application, the maximum concentration must not exceed 250 g per litre of water.
- When applying through rotary atomizers the spray droplet vector must be of a minimum Volume Median Diameter (VMD) of 200 microns.
- Weed wipers may be used in any crop where the wiper or chemical does not touch the growing crop. Maximum concentrations must not exceed the following:
 - Weed wiper mini: 1:2 dilution with water
 - Other wipers: 1:1 dilution with water
- When using with hydraulic knapsack sprayers the maximum individual dose must not exceed 22.5 g/l glyphosate (equivalent to a maximum individual dose of 5 l/ha in 80 litres of water per hectare).
- When using with rotary atomizer knapsack sprayers the minimum water volume must be 40 l/ha.

READ ALL OTHER SAFETY PRECAUTIONS AND DIRECTIONS FOR USE BEFORE USE.

All varieties of wheat (including durum wheat), barley and oats may be treated to gain harvesting and grain storage benefits resulting from the reduction of green material in the crop.

Arable application

Under certain conditions the performance of CLINIC ACE can be improved by the use of additional surfactant. Where CLINIC ACE is used at rates of 2.0 l/ha or less, Frigate should be added to the spray solution. Where conventional hydraulic sprayers are being used Frigate should be added to the spray tank solution at the rate of 0.5 litres for each 100 litres water volume.

Do not add extra surfactant when using a rotary atomiser sprayer.

Refer to the following tables for those uses where the addition Frigate is recommended.

RECOMMENDATION TABLES

Pre-harvest arable crops

Target weed/usage	Crop/situation	Weed infestation	Dose rate	Water volume
Common couch	Wheat (including durum), barley, oats	Up to 25 shoots/m ²	2.0 l/ha ⁺	Hydraulic sprayers 80–250 l/ha [#] Rotary atomisers 40 l/ha [*]
		26 to 75 shoots/m ²	3.0 l/ha	
		Over 75 shoots/m ² in direct drilled crops	4.0 l/ha	
	Oilseed rape and mustards	Up to 75 shoots/m ² Over 75 shoots/m ²	3.0 l/ha 4.0 l/ha	Hydraulic sprayers only 100–250 l/ha [#]
	Peas for combine harvesting and field beans	Up to 75 shoots/m ² Over 75 shoots/m ²	3.0 l/ha 4.0 l/ha	Hydraulic sprayers 80–250 l/ha Rotary atomisers 40 l/ha [*]
	Linseed	Up to 75 shoots/m ² Over 75 shoots/m ²	3.0 l/ha 4.0 l/ha	Hydraulic sprayers 80–250 l/ha
Perennial broad-leaved weeds, other perennial grasses	Wheat (including durum), barley, oats	All levels of all species	4.0 l/ha	Hydraulic sprayers 80–250 l/ha [#] or Rotary atomisers 40 l/ha [*]
	Oilseed rape and mustards	All levels of all species	4.0 l/ha	Hydraulic sprayers only 100–250 l/ha [#]
	Peas for combining harvesting and field beans	All levels of all species	4.0 l/ha	Hydraulic sprayers 80–250 l/ha or Rotary atomisers 40 l/ha [*]
	Linseed	All levels of all species	4.0 l/ha	Hydraulic sprayers 80–250 l/ha
Annual grasses, cereal stems, cereal leaves (harvest management)	Wheat (including durum), barley, oats	All levels of all species	1.0l/ha ⁽⁺⁾	Hydraulic sprayers 80–250 l/ha [#] or Rotary atomisers 40 l/ha [*]
Annual broad-leaved weeds – (harvest management)	Wheat (including durum), barley, oats	All levels of all species	1.5 l/ha ⁽⁺⁾	Hydraulic sprayers 80–250 l/ha [#] or Rotary atomisers 40 l/ha [*]
Annual weeds	Oilseed rape and mustards	All levels of all species	3.0 l/ha	Hydraulic sprayers only 100–250 l/ha [#]
Crop desiccation prior to direct combine harvesting (harvest management)	Oilseed rape and mustards	–	3.0 l/ha	
	Linseed	–	3.0 l/ha	Hydraulic sprayers 80–250 l/ha

* Where rotary atomiser sprayers are used, their droplet diameter must fall within the range 200–300µm.

(+) For optimum results use an adjuvant as described in 'Directions for Use'.

Use higher volumes for dense canopies.

Application and timing guidance

Cereals

Apply, when the moisture content of the youngest crop grains is below 30%, not less than seven days before harvest. Wheat crops, wheat volunteers and broad-leaved weeds may require up to 14 days before harvest

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.

Effects on brewing and baking have not been tested. Consult grain merchant or processor before use.

NOTE: 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 Polygonum weeds will not be susceptible at harvest management rates.

Oilseed rape and mustards

Apply when crop seeds have less than 30% moisture content.

Apply to standing crops at these intervals before harvest:

oilseed rape 14–21 days

mustards 8–10 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 regrowth.

DO NOT treat late maturing areas of crops caused by pigeon damage, poor drainage, etc.

Crops suffering from stress, 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.

Peas for combine harvesting and field beans

Apply when crop seeds have less than 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.

Linseed

Apply when crop seeds have less than 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.

A delay of up to 28 days after spraying may be necessary prior to combine harvesting.

Where application takes place late in the autumn, it must be checked that weeds are still susceptible. See earlier section on weed control.

DO NOT TREAT CROPS GROWN FOR SEED.

STUBBLES

Target weeds usage	Crop/situation	Weed infestation	Dose rate	Water volume
Common couch	Before all crops – autumn/spring applications	Up to 75 shoots/m ²	3.0 l/ha	Hydraulic sprayers: 80–250 l/ha or Rotary atomisers: 40 l/ha*
Other perennial grasses		Over 75 shoots/m ²	4.0 l/ha	
Volunteer potatoes (autumn only)		All levels of all species		
		–		

Application and timing 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.

Allow seven days before planting trees.

STUBBLES OR PRE-CULTIVATED LAND

Target weeds usage	Crop/situation	Weed infestation	Dose rate	Water volume
Volunteer cereals Other annual grasses Annual broad-leaved weeds	Before all crops autumn or spring applications	All levels of all species	1.5 l/ha ⁽⁺⁾	Hydraulic sprayers: 80–250 l/ha or Rotary atomisers: 40 l/ha*

Application and timing guidance

Cultivations may be made 24 hours after spraying.

Direct drilling may take place two days after spraying.

* Where rotary atomiser sprayers are used, their droplet diameter must fall within the range 200–300µm.

(+) For optimum results use an adjuvant as described in 'Directions for Use'.

Grassland destruction and control of associated weeds

Target weeds/usage	Crop/situation	Weed infestation	Dose rate	Water volume
Short rotation ryegrass, longer leys and permanent pasture	Grass	Short rotation ryegrass with annual weeds	3.0 l/ha	Hydraulic sprayers: 150–250 l/ha
		Leys 2–4 years old with perennial grass weeds	4.0 l/ha	
		Long leys 4–7 years old with perennial broad-leaved weeds	5.0 l/ha	
		Permanent pasture	6.0 l/ha	

Application timing and guidance

Select application rate to control least susceptible target weeds by selecting from application rate table 'Application rates for grassland destruction'.

ONLY direct drill grass and clover EITHER into one–two year leys without mat, five+ days after spraying, OR long leys with some mat, in the spring following autumn application.

DO NOT apply lime or fertiliser prior to CLINIC ACE application.

Treatment timings:

1. Regrowth 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 REGRAZING OR MOWING.

Normal cultivations for the next crop may be made as usual once fields are cleared of grass crops.

NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION, PERMEABLE SURFACES OVERLYING SOIL, HARD SURFACES

Target weeds/usage	Crop/situation	Weed infestation	Dose rate	Water volume
Annual weeds	–	All species	1.5 l/ha	Hydraulic sprayers: 80–250 l/ha or Rotary atomisers 40 l/ha*
Perennial grasses		All species	4.0 l/ha	
Perennial broad-leaved weeds		All species	5.0 l/ha	

* Where rotary atomiser sprayers are used, their droplet diameter must fall within the range 200–300µm.

Refer to 'Hand-held Applicators' under Mixing and Spraying.

Application timing and guidance

Use areas include:

Roadsides, paths, hard surfaces, along fences and walls and total weed control on industrial sites.

DO NOT USE IN OR ALONGSIDE HEDGEROWS.

DO NOT USE UNDER GLASS OR POLYETHYLENE.

ORCHARDS

Target weeds usage	Crop/situation	Weed infestation	Dose rate	Water volume
Perennial grasses and broad-leaved weeds: – in arable stubbles – in pastures	Top fruit – pre-planting	All levels of species	4.0 l/ha 5.0 l/ha	Hydraulic sprayers 200–250 l/ha or Rotary atomisers 40 l/ha*
Perennial grasses and broad-leaved weeds	Within orchards of apple, pear, plum, cherry and damson	All levels of most species	5.0 l/ha	Hydraulic sprayers 200–400 l/ha optimum 250 l/ha
Root suckers	–	All species	5.0 l/ha	

All top fruit crops may be planted from seven days after spraying.

Trees must have been established for two years before spraying.

Spray AFTER autumn leaf-fall and BEFORE.

Apples, pears – green cluster stage.

Stone fruit – white bud stage.

Avoid contact with tree branches and trunks above 30 cm from the ground.

Treat suckers in late spring only.

GREEN COVER ON LAND NOT BEING USED FOR CROP PRODUCTION – SET-ASIDE

Target weeds/usage	Weed infestation	Dose rate	Water volume
BEFORE OR DURING REMOVAL FROM PRODUCTION			Hydraulic sprayers 80–250l/ha
Common couch	< 75 shoots/m ² > 75 shoots/m ²	3.0 l/ha 4.0 l/ha	
Perennial broad-leaved weeds and other perennial grasses	–	4.0 l/ha	
Annual weeds	–	1.5 l/ha	
<i>Autumn/spring of year one only</i> <i>– Summer of year one and thereafter</i>	–	3.0 l/ha	
AFTER SHORT ROTATION OR LONG TERM REMOVAL FROM PRODUCTION			
Natural regeneration and crop cover destruction			
Annual weeds	–	3.0 l/ha	
Perennial grasses	–	4.0 l/ha	
Perennial broad-leaved weeds	–	5.0 l/ha	

* Where rotary atomiser sprayers are used, their droplet diameter must fall within the range 200–300µm.

Application timing and guidance

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.

FORESTRY

Pre-planting

Target weeds/usage	Weed infestation	Dose rate	Water volume
Arable land Planting	Arable weeds	4.0 l/ha	Hydraulic sprayers 80–250 l/ha
Replanting and grassland areas	Grasslands weeds	5.0 l/ha	or Rotary atomisers 40 l/ha*

* Where rotary atomiser sprayers are used, their droplet diameter must fall within the range of 200–300 µm.

Application guidance

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

Post planting (directed)

Target weeds/usage	Weed infestation	Dose rate	Water volume
Clean-up around trees with knapsack applications Conifer release	Grasses: Annual/ perennial Broad- leaved Woody weeds: Ash Bracken Beech Brush Brambles Hazel Oak Sycamore Willow Heather (peat soils) Heather (mineral soils) Rhododendron[.]	4.0 l/ha 3.0 l/ha 4.0 l/ha 6.0 l/ha 10.0 l/ha	Knapsack sprayers: 200–250 l/ha Spot gun and weedwiper mini. See under Mixing and Spraying

Application timing and 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 later August to end September.

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

[.] For improved control of Rhododendron add Mixture B at a concentration of 2% final water volume to 8.0 l/ha of CLINIC ACE.

Application using the weed wiper is not suitable.

Cut back and treat re-growth when at least one metre in height throughout the entire coppice. Spray to just before point of run-off.

Post planting (overall dormant season)

Target weeds/usage	Weed infestation	Dose rate	Water volume
Grass weeds – Lowland areas – Upland areas	Bent, black Cocksfoot Couch, common Fescues Hair-grass, tufted Hair-grass, wavy Meadow grasses Moor-grass, purple Oat-grass, false Other Bent species Reed wood, small (Bush grass) Soft-grass, creeping Sweet vernal	1.5 l/ha 2.0 l/ha	Hydraulic sprayers 200–250 l/ha or Hand-held equipment
Bracken	All levels of species	2.0 l/ha	
Beech and Birch		2.0 l/ha	
Brambles		3.0 l/ha	

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

Application timing and 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 considerably between locations and between seasons. It may occur as early as the end of July or be delayed to October or later. To avoid damage to Lammas growth, sprays should be directed away from leaders.

Stump application and chemical thinning

Area of use	Target weeds	Weed infestation	Dose rate
Stump application	Prevention of coppicing and re-growth from stumps	Deciduous species	10% solution of CLINIC ACE in water
Application for chemical thinning		Coniferous species	20% solution of CLINIC ACE in water
Chemical thinning by injection of tree stems	Coniferous and deciduous species		2 mls neat CLINIC ACE per cut per 10 cm diameter of stem (or less)

Application timing and guidance

Apply to saturate the freshly cut stump.

- 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.

Use a hatchet to cut one notch in trees up to 10 cm diameter and apply 2 ml 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.

APPLICATION RATES FOR GRASSLAND DESTRUCTION

3.0 l/ha

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

4.0 l/ha

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

5.0 l/ha

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

6.0 l/ha

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

* White clover is best cut in June and sprayed one month later. Creeping buttercup should be sprayed at flowering stage.

** At full frond expansion.

MIXING AND SPRAYING

Tractor mounted applicators Conventional hydraulic sprayers:

Sprayer and nozzle selection

All machines should be 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 degree nozzles. For application pre-harvest of crops it is essential to use a sprayer whose boom may 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 faster speeds.

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

80 or 110 degree nozzles able to apply the required volume at pressures between 1.5–2.5 bars at between 4–9 kph are recommended. Examples of these nozzles are available in a separate handbook.

Filling the sprayer

Half fill the spray tank with water and start agitation. Add recommended quantity of CLINIC ACE herbicide, top-up tank with water to required level. To avoid foaming do not use top tank agitation. Use of a defoamer may be necessary.

Calibration

Before using a 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:

The nozzles are aligned evenly at the correct angle to the direction of travel.

The boom is level over its width.

The boom height permits the correct pattern of spray overlap on the target weeds.

Rotary atomisers

Sprayer selection

The following rotary atomiser applicators may be used to apply this product:

Cleanacres Dual-Option Sprayer CDA Boom and CDA Lightweight

Horstine Farmery Microdrop Lely Hydraspin

Tecnomia Girojet

Stir the correct amount of CLINIC ACE to control the target species into the sprayer bottle filled with clean water. Top up with water, close the top and shake gently to ensure good mixing. Do not tank-mix.

Droplet size and water volume

Set the spray droplet Volume Median Diameter to within the range 200–300µm for each machine – this corresponds to a 'MEDIUM' or 'COARSE' quality spray (BCPC definition) and the volume of application to 40 l/ha.

Operation in the field

Apply at 4–9 kph having calibrated the sprayer accurately. Ensure that sprayer bouts are matched by using markers.

Hand-held applicators

Overall, non-selective applications – spot or directed application

Knapsack applicator

These may be used in 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

When used at a walking speed of 1 m/sec to apply a swath of one metre width, most knapsack sprayers fitted with a Lurmark AN 2.0 or similar nozzle deliver approximately 200 l/ha spray volume (or 10 litres per 500 m²). To apply 4.0 l/ha of CLINIC ACE, therefore, use 40 ml of product for each two litres of spray liquid required. Similarly, knapsack sprayers fitted with low volume nozzles such as Lurmark AN 1.0 typically deliver approximately 100 l/ha spray volume. To apply 4.0 l/ha CLINIC ACE in this case, use 80 ml of product for each two litres of spray liquid required.

Herbi

This may be used in areas similar to the Knapsack. When using with rotary atomizer knapsack sprayers the minimum water volume must be 40 l/ha.

Hand-Held Wipers

Weedwiper Mini

This technique may be used in Top Fruit Orchards and in Non-Crop areas only. Use a concentration of one part of CLINIC ACE herbicide plus two parts water and add a water-based dye if required.

Tractor-mounted wipers

Treatment of sugar beet bolters, weed beet and other weeds

For use in arable crops and grassland 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

Hectaspan Weedwiper

Tecnomatop Weeder

Keenan Weed Licker

Telford Homburg Chemical Applicator

Matrot Mobilcord

Vicon Wedge-Wik

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.

CAUTION

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.

COMPATIBILITY

CLINIC ACE may be tank-mixed with the following adjuvants:

FRIGATE – only for specific areas of use as directed by Nufarm.

Do not tank-mix this product with other pesticides or fertilizers, EXCEPT when directed by Nufarm, as a reduced level of weed control may result.

COMPANY ADVISORY INFORMATION

This section is not part of the Product Label under the Control of Pesticides Regulations 1986 (or Plant Protection Products Regulations 1995) and provides additional advice on the product.

General

CLINIC ACE herbicide is an advanced formulation containing the isopropyl amine salt of glyphosate. CLINIC ACE is taken up by foliage and translocated to underground roots, rhizomes and stolons, providing control of both annual and perennial grasses and broad-leaved weeds. CLINIC ACE is rapidly adsorbed onto particulate matter in soils and water and is quickly degraded by the micro-organisms present in soil and aquatic bottom sediments. Until degraded,

the active ingredient in CLINIC ACE, glyphosate, is practically immobile in soils and is, therefore, unlikely to contaminate groundwater.

To maximise the safety of CLINIC ACE to the operator, consumer and environment, the label recommendations and the DEFRA/HSE/DETR publication 'Code of Practice for the Safe Use of Pesticides on Farms and Holdings' (Green Code) should be adhered to.

Symptoms on the weeds

Symptoms of treatment are generally first seen 7–10 days, or longer (if growth is slow), after spraying. These take the form of leaf reddening followed by yellowing and are usually quicker to appear on grasses than on broad-leaved weeds. Reaction of nettles is slow.

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

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. For example, after spraying this product pre-harvest in cereals the equipment **MUST** be cleaned completely before it is used to apply a potato blight fungicide, particularly in seed crops.

Disposal

Follow the guidance on the disposal of surplus spray solution, tank washings, concentrate and containers as given in Part 5 of the DEFRA/HSE/DETR publication *Code of Practice for the Safe Use of Pesticides on Farms and Holdings (Green Code)*.

CLINIC ACE

An aqueous concentrate containing 360 g/l glyphosate.



HARMFUL



DANGEROUS FOR THE ENVIRONMENT

RISK OF SERIOUS DAMAGE TO EYES.

TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

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

IF SWALLOWED, SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY.

USE APPROPRIATE CONTAINER TO AVOID ENVIRONMENTAL CONTAMINATION.

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 AND SUITABLE FACE PROTECTION (FACESHIELD) when handling or applying the concentrate or when handling contaminated surfaces.

Wear suitable protective clothing (IMPERMEABLE coveralls), suitable protective gloves and rubber boots when using hand-held sprayers, hand-held rotary atomizers, 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 ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

WASH HANDS AND EXPOSED SKIN before eating and drinking 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.

Storage and disposal

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

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