

Asteroid® Pro 450

systemic total weedkiller

IMPORTANT INFORMATION

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

Safety data sheet available on request.

To avoid risks to human health and the environment, comply with the instructions for use

Crops

Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces;

Amenity vegetation;

Around apple, pear, cherry, damson and plum trees (orchards)

Enclosed waters, land immediately adjacent to aquatic areas

Forest (weed control, chemical thinning, cut stump control)

Maximum Individual Dose:)

Maximum Number of Treatments:) See Directions for Use (marked †)

Latest Time of Application:)

Other Specific Restrictions:

When applying through rotary atomisers, the spray droplet spectrum must be of a minimum Volume Median Diameter (VMD) of 200 microns. For stump applications, the maximum concentration must not exceed 200 ml of product made up to a total volume of 1 litre with water (i.e. a 20% solution).

Weedwipers: Weedwipers may be used in any crop where the wiper does not touch the growing crop. The maximum concentrations used must not exceed the following:

Weedwiper 'Mini' – 1:2 dilution with water

Other weedwipers – 1:1 dilution with water

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.

Aquatic weeds: 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.

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.

To access the Safety Data Sheet for this product, scan the QR code or use the website below:

<http://www.cheminova.co.uk/product-downloads.asp?U=501>

Alternatively, contact your supplier.



Approval Holder: Cheminova A/S, Rectors Lane, Pentre, Flintshire, CH5 2DH, UK, Tel: 01244 537370
Made in Denmark Batch Number: See neck of bottle
Asteroid Pro is a registered trademark and product of Cheminova A/S

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Asteroid Pro 450™

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

Active ingredient: 450 g/l glyphosate present as 607g/l (50.5% w/w) of the isopropylamine salt of glyphosate.

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.

GENERAL INFORMATION

ASTEROID PRO 450 is a water-soluble, non-selective, non-residual herbicide for the control of most annual and perennial grasses and broad-leaved weeds. The product is absorbed by the foliage and translocated throughout the plant and root systems. Visible symptoms, such as gradual wilting and yellowing are usually obvious within 3 to 7 days of application to annual weeds, but not for 14 to 21 days on perennial weeds. Complete browning and root deterioration may require 20 to 30 days, this process will take longer in cooler weather.

ASTEROID PRO 450 is inactivated on contact with the soil.

RESTRICTIONS

1. Weather Conditions

For best results a rain-free period of 6 hours and preferably 24 hours is required after application of this product.

Treating weeds which are suffering from drought stress may result in reduced efficacy. Extreme care should be taken to avoid spray drift as this can severely damage or destroy neighbouring crops and plants.

2. Associated Practices

Lime, chemical or natural fertilisers or other pesticides should not be applied before treatment or to treated areas for at least 5 days before or after application of ASTEROID PRO 450.

3. Product Degradation and Following Crops

ASTEROID PRO 450 is inactivated on contact with soil, by binding to soil particles. All crops may be planted or sown at specified intervals after treatment with ASTEROID PRO 450. A slight growth retardation following germination may be seen if seeds are sown by direct drilling amongst decaying treated vegetation, roots, rhizomes or stolons.

The action of ASTEROID PRO 450 will be slower in cooler weather. This product should not be used under frosty conditions while weed growth is reduced by natural senescence.

4. Mixing and Application

Half fill clean spray tank with clean water, add required quantity of product and mix well; add remaining water.

DO NOT use mechanical agitators. Place the filling hose below water level to prevent excessive foaming and remove immediately after filling to prevent back-siphoning. When tank mixing with other products recommended on the label add the other product before adding ASTEROID PRO 450, then add the remaining water.

DO NOT STORE, MIX OR APPLY THIS PRODUCT FROM AN UNLINED OR GALVANISED STEEL TANK. Do not leave mixtures in spray tanks over long periods. Ensure that spray tanks are thoroughly ventilated.

5. Timing treatments

It is important when treating perennial weeds that there is a full emergence of healthy green foliage and active growth at the time of application.

The efficacy of this product is increased if the leaf surface for absorption is large.

Common Couch is particularly susceptible at the 4-5 leaf stage, where there is about 10-15 cm of new growth, when tillering and new rhizome growth is starting.

Most perennial broad-leaved weeds are particularly susceptible to treatment when they are actively growing and shortly before flowering.

Annual weeds should be growing actively at the time of treatment. Grasses should have at least 5 cm of growth. Broad-leaved weeds should have at least two sizeable true leaves.

Under conditions of drought, flooding, frost or high temperatures, disease or insect damage or weeds heavily covered with dust, where plant growth is restricted the efficacy of this product will be reduced.

DIRECTIONS FOR USE

ASTEROID PRO 450 may be applied to all areas which will be planted with food and feed crops.

Strains of some annual grasses, e.g. black-grass, wild-oats 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.

Do not use glyphosate repeatedly in the same field over several years, as selection of resistant biotypes can take place and may become prevalent.

No extra surfactant should be added if the product is to be applied using a rotary atomiser sprayer.

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

† ASTEROID PRO 450® should be applied at a maximum individual dose of 4.8 l/ha once per year.

Area of use	Target weeds	Extent of weed infestation	Application rate in l/ha	Water volume	Application details
Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces.	Annual weeds	All species at all levels	1.2	Hydraulic sprayers 80-250 l/ha, rotary atomisers at 40 l/ha*, or knapsack sprayer ("Spray Application Techniques and Equipment").	DO NOT USE IN OR ALONG HEDGEROWS. DO NOT USE UNDER GLASS OR POLYTHENE For use for weed control: - along fence lines, around buildings and storage areas, along roads, and ditch edges. - For clearance of land prior to sowing. For annual weed control, allow 6 hours and for perennial weed control 5 days before cultivating. Allow 7 days before planting trees shrubs and other crops. - To control regrowth in root crop storage areas. - 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 30 cm swath covering the kerb edge and road gully – do not overspray drains. † Maximum Individual Dose: 4.8 litres/ha † Maximum number of treatments: One per year † Latest Time of Application: Not specified
	Perennial grasses	All species at all levels	3.2		
	Perennial broad-leaved weeds	All species at all levels	4.8		

* Droplet size should be within 200-300 microns.

AMENITY VEGETATION

† ASTEROID PRO 450® should be applied at a maximum individual rate of 4.0 l/ha.

Area of use	Target weeds	Extent of weed infestation	Application rate in l/ha	Water volume	Application details
Amenity Vegetation	Annual weeds	All species at all levels	1.2	Hydraulic sprayers 80-250 l/ha, rotary atomisers at 40 l/ha*, or knapsack sprayer ("Spray Application Techniques and Equipment").	DO NOT USE UNDER GLASS OR POLYTHENE. Avoid all contact with foliage and stems of desirable plants. Use a sprayguard if necessary. † Maximum Individual Dose: 4.0 litres/ha † Maximum number of treatments: Not specified † Latest Time of Application: Not specified
	Perennial grasses	All species at all levels	3.2		
	Perennial broad-leaved weeds	All species at all levels	4.0		

ORCHARDS (Apple, pear, cherry, damson, plum)

† ASTEROID PRO 450 should be applied at a maximum individual rate of 4.0 l/ha once per year.

Area of use	Target weeds	Extent of weed infestation	Application rate in l/ha	Water volume	Application details
Apple, pear, plum, cherry and damson orchards pre-planting	Perennial grasses and broad-leaved weeds in: - arable stubbles - pastures	All species at all levels	3.2 4.0	Hydraulic sprayers 200-250 l/ha or rotary atomisers 40 l/ha*.	Refer back to the "Timing of Treatments" section. Allow 7 days after spraying before planting top fruit crops. † Maximum Individual Dose: 4.0 litres/ha † Maximum number of treatments: One per year † Latest Time of Application: (Apple, pear); After harvest post leaf-fall but before green cluster stage.
Within orchards containing apples, pears, plum, cherry and damson	Perennial grasses and broad-leaved weeds	All species at all levels	4.0	Hydraulic sprayers 200-400 l/ha (optimum 250 l/ha) or knapsack sprayer (see "Spray Application Techniques and Equipment").	Fruit trees should be established for at least two years before treatment. AVOID CONTACT WITH BRANCHES AND TRUNKS 30 CM ABOVE GROUND LEVEL. Treatment should be timed after trees have lost their leaves in autumn or for apples and pears in spring before green cluster and before white bud stage for stone fruit. † Maximum Individual Dose: 4.0 litres/ha † Maximum number of treatments: One per year † Latest Time of Application: (Plum, cherry, damson) After harvest post leaf-fall but before 'white bud' stage.

* Droplet size should be within 200-300 microns

ENCLOSED WATERS, LAND IMMEDIATELY ADJACENT TO AQUATIC AREAS

† ASTEROID PRO 450 may be used against aquatic weeds in and along waterways and irrigation ditches at a maximum individual rate of 4.8 l/ha.

Area of use	Target weeds	Extent of weed infestation	Application rate in l/ha	Water volume	Application details
Aquatic emergent weeds	Common Reed, Soft Rush, Reed Canary-grass, Bulrush, Reed Sweet-grass, Sedges, Water-cress, Whorl-grass, Creeping Bent,	All species at all levels	4.0	Hydraulic sprayers 200-400 l/ha (optimum 250 l/ha) or rotary atomisers (Herbi®) 40 l/ha*.	ONLY APPLY TO EMERGED WEEDS. DO NOT APPLY TO OPEN WATER. Apply using tractor or boat mounted sprayer. Observe all PRECAUTIONS for aquatic uses. Apply AGAINST the direction of flow in waterway is flowing. The speed of 8 km/h should not be exceeded for tractor mounted sprayers. With boat mounted sprayers use the slowest forward speed possible. When using a boat mounted sprayer it may be necessary to re-treat lilies that have been disturbed by the boat's passage. This product may be used in the presence of fish providing it is used strictly in compliance with label recommendations. 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. See 'Other Specific Restrictions'
Aquatic floating weeds	White Water-lily, Yellow Water-lily	Both species at all levels	4.8		† Maximum Individual Dose: 4.8 litres/ha. † Maximum number of treatments: Not specified. † Latest Time of Application: Not specified.

* Droplet size should be between 200-300 microns.

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

† 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.

FOREST AND FOREST (STUMP)

When conventional hydraulic sprayers are being used the performance of ASTEROID PRO 450 can be improved by the addition of a suitable authorised adjuvant to the spray tank, for all pre-plant and post-plant uses in forestry only. Adjuvants should not be added when using rotary atomiser sprayers.

† ASTEROID PRO 450 should be applied post-planting in forestry at a maximum individual rate of 8.0 l/ha (weed control) AND 1.6 ml product/10cm (or less) of the tree diameter (chemical thinning).

Area of use	Target weeds	Extent of weed infestation	Application rate in l/ha	Water volume	Application details
Forestry					All tree species may be planted 7 days after treatment.
Pre-planting on arable land and grassland areas	Arable weeds	All species at all levels	3.2	Hydraulic sprayers 200-400 l/ha (optimum 250 l/ha) or rotary atomisers 40 l/ha*	† Maximum Individual Dose: 8.0 litres/ha (weed Control). † Maximum number of treatments: One per year. † Latest Time of Application: Not specified
	Grassland weeds	All species at all levels	4.0		
Post-planting for clean-up around trees with knapsack applicators	Perennial and annual grasses	All species at all levels	3.2	Hydraulic knapsack sprayers, (see Spray Application Techniques and Equipment).	Always use TREE GUARD when treating during the growing season. Bracken should be treated after frond tips are uncurled but pre-senescence. Apply to heather from late August to end of September. Apply to all other woody weeds from June to August before leaf senescence (but after new crop growth has hardened). (+) Rhododendrons may be controlled at *6.4l/ha if a suitable authorised surfactant/ adjuvant is added.
	Bracken, Beech- brush, Brambles, Ash, Oak Willow, Sycamore, Hazel		2.4		
	Heather - peat soil - mineral soil		3.2 4.8		
	Rhododendron		8.0 or 6.4 (+)		
					† Maximum Individual Dose: 8.0 litres/ha (weed Control). † Maximum number of treatments: One per year. † Latest Time of Application: Not specified

FOREST AND FOREST (STUMP) (Continued)

Overall spraying post planting in dormant season	Grass weeds: including Black Bent, Common Couch, Creeping Soft-grass, False Oat-grass, Cock's-foot, Purple Moor-grass, Wavy Hair-grass, Yorkshire Fog	All levels - with optimum timing and conditions - under slightly less favourable conditions	2.4 3.2	Hydraulic sprayers 80-250 l/ha or hand held equipment (see Spray Application Techniques and Equipment).	DO NOT OVERALL SPRAY trees grown for ornamental purposes including Christmas trees. When fully dormant and the leader growth has hardened it is safe to overspray the following species: Corsican, Lodgepole and Scots Pines, Norway and Sitka Spruce, Lawson Cypress and Western Red Cedar. Douglas and Nobel Firs may be sprayed when fully dormant and when leader growth has hardened, but NOT in the spring. It is a good idea to test crop safety by spraying a small area before conducting widespread overall treatment in following years. Bracken should be treated after frond tips are uncurled but pre-senescence. † Maximum Individual Dose: 8.0 litres/ha (weed Control) † Maximum number of treatments: One per year † Latest Time of Application: Not specified
Stump application for chemical thinning	Prevention of coppicing and regrowth from stumps	-	For stump application, the maximum concentration must not be exceed 160 ml of product made up to a total volume of 1 litre water (i.e 20% solution in water).	Clearing saw fitted with fitted with Enso attachments or knapsack sprayer operated at low pressure or spot gun with solid stream nozzle or paint brush.	Apply to saturate freshly cut stump. Treat stumps within 1 week of felling from Nov-March. 'See 'Other Specific Restrictions' . † Maximum Individual Dose: See 'Other Specific restrictions' † Maximum number of treatments: Not specified † Latest Time of Application: Not specified

FOREST AND FOREST (STUMP) (Continued)

Area of use	Target weeds	Extent of weed infestation	Application rate in l/ha	Water volume	Application details
Chemical thinning by injection of tree stems	Coniferous and deciduous species	-	1.6 ml of ASTEROID PRO 450 per 10 cm (or less) of the tree diameter.	-	Use a hatchet to cut one notch in trees up to 10 cm diameter and apply 2 ml of the solution to each cut eg using a Spot Gun. Use 2 or 3 notches in trees over 10 cm diameter. Do not treat in the period of active sap flow in the spring/early summer. † Maximum Individual Dose: 1.6 ml product/10cm (or less) of tree diameter (chemical thinning) † Maximum number of treatments: Not specified † Latest Time of Application: Not specified

*Droplet size should be within 200-300 microns.

SPRAY APPLICATION TECHNIQUES AND EQUIPMENT

Hydraulic sprayers mounted on tractors: Use any equipment which can apply at 80-250 l/ha as a BCPC defined Medium or Coarse quality spray with a pressure ranging from 1.5 to 2.5 bars with 80° or 110° nozzles. For most applications 200-250 l/ha water volume should be used. Spray pressure (typically 1.5-2.5 bars) must be adjusted and related to tractor speed, water volume and nozzle type. However, specific low volume nozzles may be used with a reduced water volume ranging from 80-120 l/ha. When using low volume nozzles, spray pressure and tractor speed should be adjusted.

A typical speed range would be 4-9 km/hour.

All spray equipment should be calibrated before use particularly if nozzles have been changed. Check at least one nozzle from each side of the boom.

Before starting spray application be sure to check that;

- the boom is level
- the boom height is correct for the particular application
- all nozzles along the boom are aligned at the correct angle to the forward direction of the tractor.

Rotary Atomisers

Select one of the following applicators;

CDA Boom™ and CDA Lightweight™
Microdrop®,
Girojet®,
Dual-Option Sprayer®,
Hydraspin™

Applications should be made using a water volume of 40 l/ha, at a speed of 4-9 km/h with a droplet diameter set at 200-300 µm, equivalent to the BCPA definition 'Medium' or 'Coarse'. The spray equipment should be correctly calibrated according to the manufacturer's instructions.

Directed application/knapsack: Knapsack sprayers may be used in forestry, orchards, amenity vegetation and land not intended to bear vegetation and pre-cultivation. Spray volumes normally range from 200-300 l/ha, but may be reduced to 100-150 l/ha if low pressure nozzles have been fitted. Spray quality should be adjusted to a "medium" or "coarse" spray as defined by BCPC.

When using a knapsack sprayer with a total capacity of 10 litres, applying at 3.2 l/ha with a spray volume of 200 l/ha, gives a concentration of 1.6%, thus requiring 0.16 litres of ASTEROID PRO 450 in 9.84 litres of water. A 10 litre spray volume will cover a 500 m² area using a 1m wide swath and a 1m/sec walking speed.

Weedwiper Applicator (e.g. Weedwiper Mini): Weedwiper Applicator may be used in Orchards, Non-Crop and Aquatic areas.

Do not exceed the following dilutions: Weedwiper Mini – 0.8:2 dilution with water.

Spot Gun - Tree Injection: The applicator must be fitted with a solid stream nozzle, either a Spraying Systems 0006 or a Delevan LF 6.0. Set the gun to apply 1.6 ml of neat ASTEROID PRO 450@ per cut.

Spot Gun - Stump treatments: The applicator must be fitted with narrow angle cone nozzles, TG3 or TG5 or solid stream nozzle tips either a Delavan LF 6.0 or Spraying Systems 0006.

Set the gun to deliver 4 ml per squeeze and select the concentration of ASTEROID PRO 450 according to usage recommendations. A dose of 4 ml should be applied for each 5 cm diameter of tree stump.

Sprayer maintenance: Be sure that all spraying equipment is functioning correctly and that equipment is maintained in accordance with manufacturers instructions. Ensure that any damaged, malfunctioning or worn parts are replaced before re-using the spray equipment.

Cleaning spray equipment: Always clean spray tanks and all parts of the equipment adequately after use, using the recommended detergents to be sure to avoid contamination with residues. Contamination with product residues could damage crops when the sprayer is next used for another pesticide.

Spray Application in or near waterways: Before using ASTEROID PRO 450 for control of aquatic weeds in or near waterways read the official recommendations entitled "Guidelines for the Use of Herbicides on Weeds in or near Watercourses and Lakes". This document may be obtained from Department for Environment, Food and Rural Affairs (DEFRA), Scottish Executive Environment and Rural Affairs Department (SEERAD), The Department of Agriculture Northern Ireland and the National Assembly for Wales Agricultural Department (MAWAD).

Users must consult the appropriate water regulatory body (Environment Agency/Scottish Environmental Protection Agency) before using this product near water and must obtain their permission before using this product to control aquatic weeds.

Maximum concentration of active ingredient in treated water should not exceed 0.2 parts per million, or such lower concentration as the appropriate regulatory body may require.

When using ASTEROID PRO 450 following label recommendations, water subjected to spray drift may immediately be used for irrigation.

SAFETY PRECAUTIONS

Operator Protection

1) Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

- Operators must wear suitable protective clothes when handling the concentrate or handling contaminated surfaces.
- Operators must wear suitable protective clothing (coveralls), suitable protective gloves, rubber boots and face protection (faceshield) when making stem injection treatments.
- Operators must wear suitable protective clothing (coveralls), suitable protective gloves and rubber boots when using hand-held sprayers, hand-held rotary atomisers, weedwiper equipment, spot gun equipment or when making cut stump treatments.

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

Environmental Protection

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

Other specific restrictions

- 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.
- For use with hand held rotary atomisers, the spray droplet spectra produced must be of a minimum Volume Median Diameter (VMD) of 200 microns.
- For stump application, the maximum concentration must not exceed 160 ml of product made up to a total volume of 1 litre with water (i.e. 20% solution in water).
- Weedwipers may be used in any crop where the wiper does not touch the growing crop. The maximum concentrations used must not exceed the following:
 - Weedwiper Mini 0.7:2 dilution with water
 - Other weedwipers 0.7:1 dilution with water

Storage and Disposal: KEEP IN ORIGINAL CONTAINER tightly closed, in a safe place

KEEP OUT OF REACH OF CHILDREN

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

Trade Mark References: ASTEROID PRO 450 is a registered trademark of Cheminova A/S. All other trademarks are acknowledged.

Cheminova A/S

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