

NAUTIUS®

GROUP 2 HERBICIDE

MAPP 18838

A water dispersible granule formulation containing **400 g/kg thifensulfuron-methyl** and **150 g/kg tribenuron-methyl** for spring control of broad-leaved weeds in winter wheat, spring wheat, winter barley, spring barley, triticale and winter rye.

WARNING



H410: VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

P273: Avoid release into the environment.

P391: Collect spillage.

P501: Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

EUH208: Contains tribenuron-methyl. May produce an allergic reaction.

EUH401: To avoid risks to man and the environment, comply with the instructions for use.

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

Authorization Holder:

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Emergency Information:

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Batch number and date of manufacture: see packaging

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IMPORTANT INFORMATION

FOR USE ONLY AS A PROFESSIONAL HERBICIDE

Crop	Maximum Individual Dose	Maximum Total Dose	Maximum Number of Treatments	Latest Time of Application	Aquatic Buffer Zone Distance
Wheat (winter), wheat (spring), barley (winter), barley (spring), rye (winter), triticale.	100 grams product /ha	-	1 per crop	Before flag leaf sheath extending stage (GS 39)	6 metres

Other Specific Restrictions

This product must only be applied from 1 February in the year of harvest until the specified latest time of application. Application has to be performed in post-emergence of weeds, from 3 leaf stage of the crop (BBCH 13). This product must not be applied via hand-held equipment.

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.

SAFETY PRECAUTIONS

Operator protection

WASH CONCENTRATE from skin or eyes immediately.
WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.
DO NOT BREATHE SPRAY.

Environmental protection

Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area. To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies as specified for the crop. HORIZONTAL BOOM SPRAYERS MUST BE FITTED WITH THREE STAR DRIFT REDUCTION TECHNOLOGY. Low drift spraying equipment must be operated according to the specific conditions stated in the official three star rating for that equipment as published on HSE Chemicals Regulation Directorate's website. Maintain three star operating conditions until 30 m from the top of the bank of any surface water bodies. DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within the distance specified for the crop to the top of the bank of a static or flowing water body, or within 1 m of the top of a ditch which is dry at the time of application. Aim spray away from water. NOTE: BUFFER ZONES OF MORE THAN 5 M CANNOT BE REDUCED UNDER THE LOCAL ENVIRONMENT RISK ASSESSMENT FOR PESTICIDES (LERAP) SCHEME.

The statutory buffer zone must be maintained and the distance recorded in Section A of the LERAP record form. The LERAP record form must be kept available for three years.

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 OUT OF REACH OF CHILDREN.
KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.
KEEP IN ORIGINAL CONTAINER tightly closed, in a safe place.
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 safely.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

Restrictions

NAUTIUS must not be applied to any crop suffering from stress as a result of drought, waterlogging, low temperatures, pest or disease attack, nutrient or lime deficiency or other factors reducing crop growth.

Do not use NAUTIUS on cereal crops undersown with grasses, clover or other legumes or any other broad-leaved crop.

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

Due to the high level of activity of the herbicide, special care must be taken to avoid damage by drift onto broad-leaved plants outside the target area, or onto ponds, waterways or ditches. Thorough cleansing of equipment is also very important - see below.

Contract agents should be consulted before using on crops grown for seed.

Effectiveness using three star drift reduction technology may be reduced.

Weed control

NAUTIUS contains thifensulfuron-methyl and tribenuron-methyl, two sulfonylurea (ALS inhibitors) herbicides, which have both foliar and root activity against a wide range of broad-leaved weeds.

NAUTIUS is readily translocated within the weed plant, inhibiting growth within hours of treatment, thus preventing competition with the crop. Many weeds show marked colour changes as they die back after treatment, but the time taken for these symptoms to appear and death to occur may vary according to weed species and weather conditions. The full effect of the treatment may not be apparent for up to four weeks. Plants not completely killed are often severely stunted and much less competitive with the crop.

NAUTIUS is most effective when applied to small, actively growing weeds. As larger weeds may become less susceptible, it is important to note the size of each weed species so that application is made at the optimum time. Good spray cover of the weeds must be obtained. Weed control may be reduced when soil conditions are very dry. Residual effects may be reduced by heavy rain. The susceptibility rating of weeds in the following table refer to good spray cover and good growing conditions.

Weed Resistance

This product contains thifensulfuron-methyl and tribenuron-methyl which are ALS inhibitors, also classified by the Herbicide Resistance Action Committee as 'Group 2'.

To reduce the risk of developing resistance, applications should be made to young, actively growing weeds.

The use of cultural methods of control and herbicides with non-ALS modes of action within the cropping season and/or throughout the cropping rotation will help reduce the risk of developing resistance. When herbicides with the same mode of action are used repeatedly over several years in the same field, selection of resistant biotypes can take place. These can propagate and may become dominating. A weed species is considered resistant to a herbicide if it survives a correctly applied treatment at the recommended dose. Development of resistance with a weed species can be avoided or delayed by alternating (or tank mixing) with suitable products having a different mode of action. A strategy for preventing and managing resistance should be adopted.

The Weed Resistance Action Group has produced guidelines and copies are available from the AHDB, CPA, your distributor, crop advisor or product manufacturer.

Susceptible Weeds

The susceptibility rating of weeds in the following table refer to good spray cover and good growing conditions with application made when the weeds are at up to six true leaf stage. Weeds germinating after treatment will not be adequately controlled.

Weed species		Level of susceptibility
Common name	Scientific name	
Black bindweed	<i>Fallopia convolvulus</i>	S
Cleavers	<i>Galium aparine</i>	MS
Scentsless Mayweed	<i>Matricaria inodora</i>	S

Weed species		Level of susceptibility
Common name	Scientific name	
Common chickweed	<i>Stellaria media</i>	S
Common field speedwell	<i>Veronica persica</i>	MS
Fat-hen	<i>Chenopodium album</i>	S
Common poppy	<i>Papaver rhoeas</i>	S
Field forget-me-not	<i>Myosotis arvensis</i>	S
Field pansy	<i>Viola arvensis</i>	MS
Henbit deadnettle	<i>Lamium amplexicaule</i>	S
Red dead-nettle	<i>Lamium purpureum</i>	MS
Shepherd's purse	<i>Capsella bursa-pastoris</i>	S
Speedwell, ivy-leaved	<i>Veronica hederifolia</i>	MS

S = Susceptible (>85% control); MS = Moderately susceptible (75-85% control)

In many situations a dose of 80 g/ha will be sufficient, but if cleavers, speedwells, common poppy or black bindweed are a particular concern, a dose of 100 g/ha should be used.

Soil and Weather

NAUTIUS can be used on all soil types. Weed control may be reduced when conditions are very dry.

Volume and application

BEFORE USING NAUTIUS, SPRAYING EQUIPMENT MUST BE CLEAN AND FREE FROM CONTAMINATION WITH OTHER PESTICIDES. Application should be made in 200 litres of water per hectare using suitable ground equipment to give good spray cover of the weeds. In thick crops or dense weeds use higher volumes of water (up to 400 litres of water/ha) to ensure good spray cover of the weeds. Use a conventional field crop sprayer at a pressure of 2 - 3 bars and apply as a MEDIUM spray (as defined by BCPC). Care should be taken not to overlap spray swaths.

Mixing

Quarter fill the spray tank with clean water, start the agitation and add the required quantity of NAUTIUS directly to the tank without prior creaming. Continue agitation while topping up the tank and while spraying.

Compatibility

In any tank-mix add NAUTIUS to the tank first and ensure it is fully dispersed before adding the partner product. Do not allow NAUTIUS to come into contact with undiluted pesticide concentrate. Products should only be tank-mixed if each product can be applied within the label recommendations for its use. For further information contact your Rotam distributor or view www.rotam.co.uk.

'Joint application' with any one of the following other sulfonylurea and 'ALS inhibiting' herbicides may be applied to a crop treated with NAUTIUS. 'Joint application' is the use of NAUTIUS in tank mixture or sequence with one of the products listed in the table below. Note the specifications for following crops:

	FOLLOWING CROP		
	Cereals	Oilseed rape	Field bean
Hatra	Yes	Yes	Yes
Horus	Yes	Yes	Yes

	FOLLOWING CROP		
	Cereals	Oilseed rape	Field bean
Othello	Yes	Yes	Yes
Pacifica	Yes	Yes	Yes
Broadway Star ¹	Yes	Yes	Yes
Dakota	Yes	Yes	Yes
Galaxy	Yes	Yes	Yes
GF-184	Yes	Yes	Yes
Hunter	Yes	Yes	Yes
Slalom	Yes	Yes	Yes
Spitfire	Yes	Yes	Yes
Starane XL	Yes	Yes	Yes

¹ Use in sequence only

Do not apply NAUTIUS to any cereal crop in sequence or tank-mixture with any product containing any other sulfonylurea herbicide product.

Requirements and restrictions on the compatible product labels must be observed when using in sequence or tank mixture. When using tank-mixtures take care not to overlap spray swaths.

Cultivation (following crop):

No special requirements for cultivation are needed where cereals are to be sown as the following crop.

Before sowing either oilseed rape or field beans, soil should be cultivated to a depth of 20 cm.

Vigour reductions may be seen in following crops of oilseed rape and field beans under certain circumstances e.g. dry summer. Any effects should be outgrown and should not result in yield loss.

Sugar beet may be grown in the spring, following harvest of a preceding cereal crop which has received one of the above sequences.

CROPS

CEREALS

Crop Safety

NAUTIUS can be used on all varieties of winter and spring wheat, winter and spring barley, triticale and winter rye between the growth stages given below.

Timing

NAUTIUS must only be applied in the spring after 1st of February from the three-leaf stage up to and including the flag-leaf fully emerged stage of crop growth. NAUTIUS should not be applied within 7 days of rolling the crop. Do not apply NAUTIUS more than once to any cereal crop.

Dose

Apply NAUTIUS at 80-100 g of formulated product per hectare.

Following crops

Only cereals, oilseed rape and field bean may be sown in the same calendar year as harvest of a cereal crop treated with NAUTIUS. In spring, following cereal harvest, cereals, oilseed rape or sugar beet may be sown. Where joint application with

other sulfonylurea and 'ALS-inhibiting' herbicides is required, recommendations in the compatibility section must be followed.

Replacement crops

In case of crop failure for any reason, sow only spring cereals. Before sowing, soil should be ploughed and cultivated to a depth of at least 15 cm.

WARNINGS

EXTREME CARE SHOULD BE TAKEN TO AVOID DAMAGE BY DRIFT ONTO BROAD-LEAVED PLANTS OUTSIDE THE TARGET AREA OR ONTO SURFACE WATERS OR DITCHES.

SPRAYING EQUIPMENT SHOULD NOT BE DRAINED OR FLUSHED ONTO LAND PLANTED WITH OR INTENDED FOR PLANTING WITH TREES OR CROPS OTHER THAN CEREALS.

SPRAY TANK CLEAN-OUT

TO AVOID SUBSEQUENT DAMAGE TO CROPS OTHER THAN CEREALS, IMMEDIATELY AFTER SPRAYING NAUTIUS THOROUGHLY CLEAN ALL SPRAY EQUIPMENT, INCLUDING INSIDE AND OUTSIDE OF LID, USING A PROPRIETARY SPRAYER CLEANER FOR USE WITH SULFONYLUREAS ACCORDING TO THE FOLLOWING PROCEDURE:

1. Immediately after spraying, drain tank completely. Wash any contamination off the outside of the sprayer with clean water.
2. Rinse the inside of the tank with clean water and flush at least one tenth of the spray tank volume through the boom and hoses. Drain tank completely.
3. Half-fill the tank with clean water and add the correct quantity of a proprietary sprayer cleaner for use with sulfonylureas. Agitate and then flush the boom and hoses with the solution. Top up completely with water and allow to stand for 15 minutes with agitation. Again flush the booms and hoses and drain tank completely (if it is not possible to drain the tank completely, repeat step 3 before going on).
4. Remove nozzles and filters and soak in a bucket containing a proprietary sprayer cleaner for use with sulfonylureas at the same concentration as that used for the sprayer.
5. Rinse tank again with clean water and flush at least one tenth of the tank volume through the booms and hoses. Drain tank completely.

GENERAL NOTES

Consult label tank cleanup procedures for all tank mix partners and be sure to use the most rigorous procedure recommended.

COMPANY ADVISORY INFORMATION

This section is not part of the Product Label under Plant Protection Products Regulations. It provides additional advice on product use at the discretion of Rotam Agrochemical Europe Ltd.

TERMS AND CONDITIONS OF SUPPLY, SALE AND USE

Many factors can affect or influence the activity of this product, including, but not limited to: weather and soil conditions, crop variety, treatment timing, water volume, application rates, spraying techniques, crop rotation, regional factors and the occurrence and development of weeds resistant to the active ingredients. Under certain circumstances, changes in activity or crop damage can occur. The manufacturer or supplier is unable to accept any liability in these circumstances. All goods supplied by us are of a high grade and we believe them to be suitable for the purpose for which we expressly supply them: but as we cannot exercise any control over their mixing, use or application which may affect the performance of the goods all conditions and warranties statutory or otherwise as to the quality or fitness for any purpose of our goods are excluded and no responsibility will be accepted by us for any damage or injury whatsoever arising from their storage, handling, application or use. These conditions cannot be varied by our staff, our agents or the re-sellers of the product whether or not they supervise or assist in the use of such goods.