

FMC

Navigate® Herbicide

GROUP

F1/K3

HERBICIDE

MAPP No 18950 / PCS 05667

A suspension concentrate containing 400 g/l Flufenacet and 200 g/l Diflufenican for use as a pre or post emergence herbicide for the contact and residual control of a range of listed grass and broadleaved weeds in Winter Wheat, Winter Barley, Winter Rye and Winter Triticale.

IMPORTANT INFORMATION FOR PROFESSIONAL USE ONLY AS A HERBICIDE

Crop	Maximum individual dose of Application	Maximum Total Dose (Interval between applications)	Latest Time
Wheat and Triticale (winter)	0.3	0.6 l product / ha / crop - See Other Specific Restrictions 2 and 3	Before 3rd tiller stage (GS23)
Barley and Rye (winter)	0.3	0.6 l product / ha / crop - See Other Specific Restrictions 2 and 3	Before 4th tiller stage (GS24)

The following Aquatic Buffer Zones must be observed:

Crops/Situation	Aquatic buffer zone distance (metres)	Comment
Barley, rye, triticale and wheat (winter)	5	See Environmental Protection Phrase 1 (UK only) To protect aquatic organisms respect an unsprayed buffer zone of 5m to surface water bodies. (IE only)

3L**FMC**

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Flintshire.enquiry@fmc.com
www.fmc-agro.co.uk

To access the Safety Data Sheet for this product scan the QR code or use the weblink: https://data.fmc-agro.co.uk/wp-content/uploads/navigate_sds.pdf

Alternatively, contact your supplier



Flufenacet. May produce an allergic reaction. 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

• **Warning** • May cause damage through prolonged or repeated exposure. • **Very toxic to aquatic life with long lasting effects.** • Get medical attention/advice if you feel unwell. • Do not breathe vapours.

• Wash hands thoroughly after handling. • Avoid release to the environment.

• 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). • Collect spillage. • Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for triple rinsed empty containers which can be disposed of as non-hazardous waste.

• **To avoid risks to human health and the environment, comply with the instructions of use.**

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

MAPP No 18950 / PCS 05667

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Product SKU	10070527	Base for Booklet	x
Product SKU Description	NAVIGATE,SC,4X3L,E#MO,BP20301,GB	Booklet	100 x 100 mm
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DIRECTIONS FOR USE

Important: This information is approved as part of the product label. All instructions within this section should be read carefully in order to obtain safe and successful use of this product.

GENERAL INFORMATION

Flufenacet is oxacetamide herbicide which works through the inhibition of cell division. Flufenacet is a selective contact and residual herbicide, absorbed through shoots (primarily coleoptile) and roots of germinating grasses and broadleaved weeds. Flufenacet belongs to the chemical family of thiadiazole which acts by inhibition of cell division and cell growth. The primary target site may be fatty acid metabolism. HRAC group K3.

Diflufenican is a pyridinecarboxamide and belongs to the Nicotinanalide group of herbicides which act by inhibiting carotenoid biosynthesis at the phytoene desaturase step (PDS). DFF is a selective contact and residual herbicide, absorbed principally by the shoots of germinating seedlings. DFF belongs to the group of carotenoid biosynthesis inhibiting herbicides which acts by inhibiting the carotenoid biosynthesis at the phytoene desaturase step. HRAC group F1

* Details of the HRAC codes, which may be used as a tool in developing a resistance management strategy may be found on the HRAC website at www.plantprotection.org/HRAC/. The Weed Resistance Action Group (WRAG) provides supporting information, including management guidelines, a herbicide-resistant grass weeds audit and facts about resistance at www.pesticides.gov.uk/rags.asp?id=714. It is important to integrate a long-term cultural and chemical weed control strategy and the recommendations of WRAG should be followed.

CAUTIONS

DO NOT treat undersown cereals or those due to be undersown.
Shallow drilled crops must only be treated post-emergence.
DO NOT soil incorporate.

Do not spray when crops are under stress from cold, drought, waterlogging, grazing, pests or disease attack, nutrient deficiency, etc.

Avoid spraying during periods of prolonged or severe frosts as sharp or severe frosts following application may cause transitory discoloration or scorch from which the crop will normally recover.

Adverse crop effect (paling, reduction in vigour) may occur when there is very wet weather before and after application, particularly on crops grown on light free draining soils or where soils become waterlogged.

These effects are typically transitory in nature and will have no adverse effect on crop yield in most cases.

DO NOT use on sands or very light soils (ADAS 85 classification) or very stony or gravelly soils, as there is a risk of crop damage.
DO NOT use on soils containing more than 10% organic matter.

Do not treat broadcast, shallow drilled crops or those sown under unfavourable weather condition as emerging seeds could be damaged.

DO NOT disturb the soil after application (e.g. by harrowing or rolling).

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

Ensure that spray swaths do not overlap.

CROPS TREATED AND TIME OF APPLICATION**Winter wheat and winter triticale (all varieties):**

Apply pre or post-emergence before third tiller stage (GS23).

Winter barley and winter rye (all varieties):

Apply pre or post-emergence before fourth tiller stage (GS24).

Where the total dose is between 0.3-0.6 l/ha and the first application is made after GS12 of the crop, the latest time of application is 31st December. The 2nd application should be post emergence.

WEEDS CONTROLLED

Always use Navigate at a rate of 0.3 litres of product/ha, trials have shown annual meadow grass is poorly

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controlled below this rate. Good weed control depends on burying any trash or straw before or during seedbed preparation. Seedbeds must have a firm, fine tilth. Loose or cloddy seed beds must be consolidated otherwise crop damage may result due to inadequate seed cover. For pre-emergence treatments, seed should be covered with a minimum of 32 mm of settled soil.

Weed susceptibility at 0.3L/ha

Annual meadow-grass	Susceptible pre and post-emergence up to GS12 (2 leaf stage).
Cleavers	Moderately resistant pre- and post-emergence up to and including GS11 (1 whorl stage). Useful levels of control can be achieved, but a follow-up treatment with a specific cleaver herbicide may be required in some situations.
Common chickweed	Susceptible pre and post-emergence up to the early branching stage (up to 5cm).
Common field-speedwell	Susceptible pre and post-emergence up to GS12 (2 leaf stage).
Field forget-me-not	Susceptible pre-emergence.
Field pansy	Susceptible pre and post-emergence up to and including GS14.
Field penny cress	S pre- and post-emergence up to and including GS13.
Loose silky bent	Susceptible pre and post-emergence up to and including GS13.
Henbit dead-nettle	Susceptible pre and post-emergence up to GS12 (2 leaf stage).

Ivy-leaved speedwell	Moderately Susceptible pre-emergence. Susceptible post-emergence up to GS12 (2 leaf stage).
Mayweeds	Susceptible pre and post-emergence up to GS12 (2 leaf stage).
Red dead-nettle	Susceptible pre and post-emergence up to GS12 (2 leaf stage).
Shepherd's purse	Susceptible pre and post-emergence up to and including GS13.
Volunteer oilseed rape*	Moderately Susceptible pre-emergence up to GS12 (2 leaf stage). Susceptible post-emergence up to and including GS13.

**Levels of control provided can be variable. In particular strongly established volunteers of oilseed rape (particularly those beyond the 2 leaf stage) may survive and require a follow-up treatment with an appropriate post-emergence herbicide.*

Established perennial grasses and broad leaved weeds growing from rootstocks will not be controlled by NAVIGATE. Speed of activity can be slow and is dependent on temperature and growing conditions. Activity can be slow under cool conditions and the final level of weed control may take some time to appear. Some soil moisture is required for NAVIGATE to be activated. Best results will be obtained if rain falls within 7 days of application.

RESISTANCE

Strains of some annual grasses (e.g. black-grass, wild-oats, Italian ryegrass) have developed resistance to herbicides which may lead to poor control. A strategy for preventing and managing such resistance should be adopted. 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.

Key aspects of the NAVIGATE Resistance Management Strategy are:

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- ALWAYS follow WRAG guidelines for preventing and managing herbicide resistant weeds.
- Use only in tank-mix or sequence with herbicides with alternative modes of action.
- Throughout the cropping rotation and in successive crops DO NOT use NAVIGATE® as the sole means of grass weed or broadleaved weed control and ALWAYS use grass and broad-leaved weed herbicides with alternative modes of action.
- ALWAYS monitor weed control effectiveness and investigate any odd patches of poor grass or broad-leaved weed control. If unexplained contact your agronomist who may consider a resistance test appropriate.
- To reduce the risk of developing resistance, applications should be made to young, actively growing weeds.
- Use crop rotation and other cultural control measures to prevent and manage herbicide resistant grass weeds.

WATER VOLUME:

Apply via a horizontal boom sprayer. Apply in 200-400 L/ha as a MEDIUM spray (BCPC category). Use the higher volume where crop or weed foliage is dense. A spray pressure of at least 2 bar is advised. Good, even spray coverage of soil and weeds is essential.

MIXING AND APPLICATION:

Shake the container thoroughly before opening and use. Half-fill the spray tank with clean water and begin agitation. Add the required quantity of NAVIGATE® to the water. Rinse the empty container thoroughly with water and add the rinsings to the tank. Complete the filling and apply without delay. Maintain agitation while travelling and throughout the spraying operation. If tank mixes are to be used, each product should be added separately to the spray tank, taking due note of any instructions given as to the order of mixing. Wash out the sprayer thoroughly after use three times with water.

FOLLOWING CROPS:

The following crops can be drilled without any specific cultivation: Wheat and Potatoes. Plough or cultivate to at least 20 cm before planting following crops of oilseed rape, field beans, barley and edible brassicae. Ensure thorough soil mixing before planting. Plough to at least 20 cm before planting sugar beet, peas, maize, carrots and onions. Ensure thorough soil mixing before planting. Where NAVIGATE® and other products containing

diflufenican are applied to successive cereal crops, levels of diflufenican can build up in the soil. As a precaution users who rent out their land to growers of these crops should not use DFF-containing products in successive years before renting out the land. Ploughing with complete inversion of the furrow, must take place before planting any following non-cereal crop. Even where ploughing or cultivation is carried out there may still be a risk of damage to following crops of onions, leek other related species and clover.

CROP FAILURE:

In the event of crop failure in the autumn after treatment with NAVIGATE®, after ploughing to 20 cm only wheat can be planted as a following crop. In the event of crop failure in the winter or spring following treatment of NAVIGATE®, plough to 20 cm and after at least 100 days spring wheat, spring barley, potatoes, maize, sugar beet and peas may be sown.

SAFETY PRECAUTIONS

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

Operator Protection (UK only)

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment: Operators must wear suitable protective gloves when handling the concentrate or handling contaminated surfaces. 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

To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements (UK only). DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5m of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1m of the top of a ditch which is dry at the time of application. Aim spray away from water. Buffer zones must be measured in accordance with the guidance set out in the booklet Local Environment Risk Assessment for Pesticides - Horizontal Boom Sprayers'

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available from HSE Chemicals Regulation Directorate's website and any amendments made to it. The results of the LERAP must be recorded in written form and must be available for a period of three years for inspection to any person entitled to exercise enforcement powers under or in connection with the Plant Protection Products Regulations 2011 or the Plant Protection Products (Sustainable Use) Regulations 2012. (An electronic record will satisfy the requirement for a written record, providing it is similarly available for inspection and can be copied). Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.

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.

Other specific restrictions

When used on crops/situations with a greater than 5m

aquatic buffer zone this product must not be applied via hand-held equipment (UK only). Allow a 6 week interval between applications, the 2nd application must be post-emergence. Where the 2nd application of a sequence is made after 31st Dec, the first application must be made before GS13 of the crop.

Storage and Disposal

KEEP OUT OF REACH OF CHILDREN

KEEP AWAY FROM FOOD, DRINK AND ANIMAL

FEEDINGSTUFFS

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe

place

WASH OUT CONTAINER THOROUGHLY, empty washings

into spray tank, and dispose of safely.

DO NOT RE-USE CONTAINERS for any purpose

SHAKE THE CONTAINER WELL BEFORE OPENING

AND USE

PROTECT FROM FROST

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