



Liberator®



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Herbicide

A contact and residual herbicide for pre and post-crop emergence use against a range of annual grasses and broad leaved weeds in wheat and barley.

MAPP 15206

A suspension concentrate formulation containing 400 g/L flufenacet and 100 g/L diflufenican

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

Bayer CropScience Limited,
230 Cambridge Science Park,
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Telephone: 01223 226500

**For 24 hour emergency information
contact Bayer CropScience Limited**
Telephone: 00800 1020 3333



Safety information

LIBERATOR

Contains 400 g/L flufenacet and
100 g/L diflufenican



WARNING

Harmful if swallowed.

May cause damage to organs (nervous system) through prolonged or repeated exposure if swallowed.
Very toxic to aquatic life with long lasting effects.

Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned: Call a POISON CENTRE or doctor/physician.

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.

Contains flufenacet, and reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (3:1).
May produce an allergic reaction.

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

IMPORTANT INFORMATION FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

Crop	Maximum individual dose	Maximum total dose	Max. number of applications	Latest time of application
Winter wheat	Until 31 March in the year of harvest: 0.6 L/ha	0.9 L/ha	2 (second application not to exceed 0.3 L/ha)	Before third tiller stage (GS 23)
Winter barley	After 31 March in the year of harvest: 0.3 L/ha			Before fourth tiller stage (GS 24)
Spring wheat	0.3 L/ha	0.3 L/ha	1	Before 4 true leaf stage (GS 14)
Spring barley	0.3 L/ha	0.3 L/ha	1	Pre-emergence

Other specific restrictions – Sequences on winter wheat and barley: Where the total dose exceeds 0.6 L/ha, the first application of any sequence must be made before GS 13 of the crop and a minimum interval of 6 weeks must be observed between applications.

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.



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SAFETY PRECAUTIONS

Operator Protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following:

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.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

IF YOU FEEL UNWELL, seek medical advice immediately (show the label where possible).

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 or roads.

To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.

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

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m 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.



This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years.

Storage and Disposal

DO NOT RE-USE CONTAINER for any purpose.

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS.

KEEP OUT OF REACH OF CHILDREN.

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

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank 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

DO NOT treat undersown cereals or those due to be undersown.

Avoid treating crops suffering from stress as a result of drought, waterlogging, grazing, pests or disease attack, nutrient deficiency, soil compaction or other factors reducing crop growth.

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 waterlogged soils or soils prone to waterlogging.

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.

Shallow drilled crops must only be treated post-emergence.

DO NOT treat broadcast crops as uncovered seed may be damaged.

DO NOT soil incorporate.

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.

DO NOT use on soils containing more than 10% organic matter.

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

WEEDS CONTROLLED

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. 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 Liberator Resistance Management Strategy are:

- ALWAYS follow WRAG guidelines for preventing and managing herbicide resistant weeds.
- DO NOT use Liberator as a stand-alone treatment for black-grass control. Use only in tank-mix or sequence with effective herbicides with alternative modes of action.
- DO NOT use Liberator as the sole means of grass weed or broad-leaved weed control in successive crops.

- ALWAYS use grass and broad-leaved weed herbicides with alternative modes of action throughout the cropping rotation.
- 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.

WEED SUSCEPTIBILITY AT 0.6 L/ha in winter wheat and winter barley

Annual meadow-grass	Susceptible pre- and post-emergence up to and including GS 13, 21 (3 leaf and 1 tiller stage).
Black-grass	Moderately Susceptible pre- and post-emergence up to and including GS 13 but before GS 21 (3 leaf stage but before tillering has commenced).
Cleavers	Moderately resistant pre- and post-emergence up to and including GS 11 (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 (5 cm).
Common field-speedwell	Susceptible pre and post-emergence up to and including GS 14 (4 leaf stage).
Field forget-me-not	Susceptible pre-emergence.
Field pansy	Susceptible pre- and post-emergence up to and including GS 14 (4 leaf stage).
Groundsel	Susceptible pre-emergence.
Ivy-leaved speedwell	Moderately Resistant pre-emergence. Susceptible post-emergence up to and including GS 12 (2 leaf stage).
Mayweeds	Susceptible pre- and post-emergence up to and including GS 12 (2 leaf stage).
Red dead-nettle	Susceptible pre-emergence.

A subsequent sequential application of 0.3 L/ha Liberator may provide a useful contribution to the residual control of black-grass and annual meadow-grass in winter wheat and winter barley, particularly in situations where black-grass or annual meadow-grass germination is protracted and emergence after application is anticipated, and when used as part of a grass weed management programme.

WEED SUSCEPTIBILITY AT 0.3 L/ha in winter wheat, winter barley, spring wheat and spring barley

Annual meadow-grass	Susceptible pre and post-emergence up to and including GS 12 (2 leaf stage).
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Established perennial grasses and broad leaved weeds growing from rootstocks will not be controlled by Liberator. 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 Liberator to be activated. Moist soil at and after application is required to give the best results. Best results will be obtained if rain falls within 7 days of application. Residual control may be reduced under prolonged dry conditions.

CROP SPECIFIC INFORMATION

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.

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 bars is advised. Good, even spray coverage of soil and weeds is essential. Ensure that spray swaths do not overlap. To prevent damage, care must be taken to avoid drift onto neighbouring crops.

Winter wheat (all varieties): Apply pre or post-emergence up to and including second tiller stage (GS 22).

Winter barley (all varieties): Apply pre or post-emergence up to and including third tiller stage (GS 23).

An application of up to 0.6 L/ha may be made at any time before 31st March in the year of harvest.

A single application of 0.3 L/ha that is not part of a sequence may be made at any time up to and including GS 22 (winter wheat) or GS 23 (winter barley) of the crop.

Sequences on winter wheat and barley:

Where the total dose exceeds 0.6 L/ha, the first application of any sequence must be made before GS13 of the crop and a minimum of 6 weeks must elapse between treatments. The second application of any sequence must not exceed 0.3 L/ha.

Where the total dose is between 0.3 – 0.6 L/ha and application is made after GS 12 of the crop, the latest time of application is 31st March.

Spring wheat (all varieties): A single application of 0.3 L/ha may be made pre or post-emergence, up to and including third true leaf stage (GS 13).

Spring barley (all varieties): A single application of 0.3 L/ha may be made pre-emergence of the crop.

FOLLOWING CROPS and CROP FAILURE

Plough or cultivate to at least 15 cm before planting following crops of oilseed rape, field beans and edible brassicae. Ensure thorough soil mixing before planting. Plough to at least 15 cm before planting peas, sugar beet, carrots and onions. Ensure thorough soil mixing before planting.

Wheat, barley and potatoes can be drilled without any special cultivations. In the event of crop failure, for any reason, plough to at least 15 cm and sow only wheat, barley and potatoes. An interval of 12 weeks should elapse between treatment and subsequent sowing of spring wheat and spring barley.

Where Liberator and other products containing diflufenican are applied to successive cereal crops, levels of diflufenican (DFF®) will build up in the soil. Ploughing or cultivation, with complete inversion of the furrow, must take place before planting any following non-cereal crop, except potatoes. Even where ploughing or cultivation is carried out there may still be a risk of damage to following crops of onions, leek and related species, or clover. 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.

MIXING

Shake the container well before use. Half fill the spray tank with clean water and add the required amount of Liberator. Wash out the container and add the washings to the spray solution, before topping up with clean water. Maintain continuous agitation of spray solution during mixing and loading and until spraying is complete. Do not leave the sprayer filled with the spray solution standing for long periods. Wash out the sprayer thoroughly after use using a wetting agent or proprietary tank cleaner with two rinses.

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