

Liberator[®]

GUIDE TO EFFECTIVE USE



Liberator[®]



Liberator is the standard pre-emergence herbicide for early control of grass and broad-leaved weeds in winter cereals. Given its excellent residual weed control, good crop safety, flexible timing, low dose rate and a non-offensive odour when sprayed, it's easy to see why.

A second application is now approved for use in spring. This provides a useful residual partner for Atlantis WG.

Product profile

Active ingredients (concentration)	Flufenacet (400 g/L) + diflufenican (100 g/L)
Mode of action	Flufenacet: inhibition of cell division, HRAC Resistance Group K3 Diflufenican: inhibition of carotenoid synthesis (bleacher), HRAC Resistance Group F1
Formulation	SC (Suspension Concentrate) – off white in colour
Crops	All varieties of winter wheat and winter barley
Maximum individual dose	0.6 L/ha before December 31st or 0.3 L/ha after December 31st
Maximum seasonal dose	0.9 L/ha
Active delivered at 0.6 L/ha	240 g/ha flufenacet + 60 g/ha diflufenican
Maximum number of treatments	2 per crop (2nd application not to exceed 0.3 L/ha)
Latest time of application	0.6 L/ha before December 31st or 0.3 L/ha up to March 31st or Winter wheat: pre-emergence to GS 22/Winter barley: pre-emergence to GS 23, whichever is sooner
LERAP	Category B
Pack size	3 L (Treats 5 ha at 0.6 L/ha rate or 10 ha at 0.3 L/ha rate)
MAPP number	12032

Weeds controlled

	Susceptibility at 0.6L/ha	Susceptibility at 0.3L/ha
Black-grass	MS pre and post-emergence up to and including GS 13 but before GS 21 (3 leaf stage but before tillering has commenced)	No recommendation
Rye-grass	S pre and post-emergence up to 2 leaves (S)	No recommendation
Brome species	MS pre-emergence	No recommendation
Annual meadow-grass	S pre and post-emergence up to and including GS 13, 21 (3 leaf and 1 tiller stage)	S pre and post-emergence up to and including GS 12 (2 leaf stage)
Field pansy	S pre and post-emergence up to and including GS 14 (4 leaf stage)	S pre and post-emergence up to and including GS 14 (4 leaf stage)
Common field-speedwell	S pre and post-emergence up to and including GS 14 (4 leaf stage)	S pre and post-emergence up to and including GS 12 (2 leaf stage)
Ivy-leaved speedwell	MR pre-emergence S post-emergence up to and including GS 12 (2 leaf stage)	MR pre-emergence No post-emergence recommendation
Chickweed, Common	S pre and post-emergence up to the early branching stage (5cm)	S pre and post-emergence up to and including GS 12 (2 leaf stage)
Mayweeds	S pre and post-emergence up to and including GS 12 (2 leaf stage)	MS pre-emergence
Groundsel	S pre-emergence	MS pre-emergence
Field forget-me-not	S pre-emergence	MS pre-emergence
Red dead-nettle	S pre and post-emergence up to and including GS 12 (2 leaf stage)	S pre-emergence
Cleavers*	MR pre and post-emergence up to and including GS 11 (1 whorl stage)	No recommendation

Bold – recommendations included on the approved text label

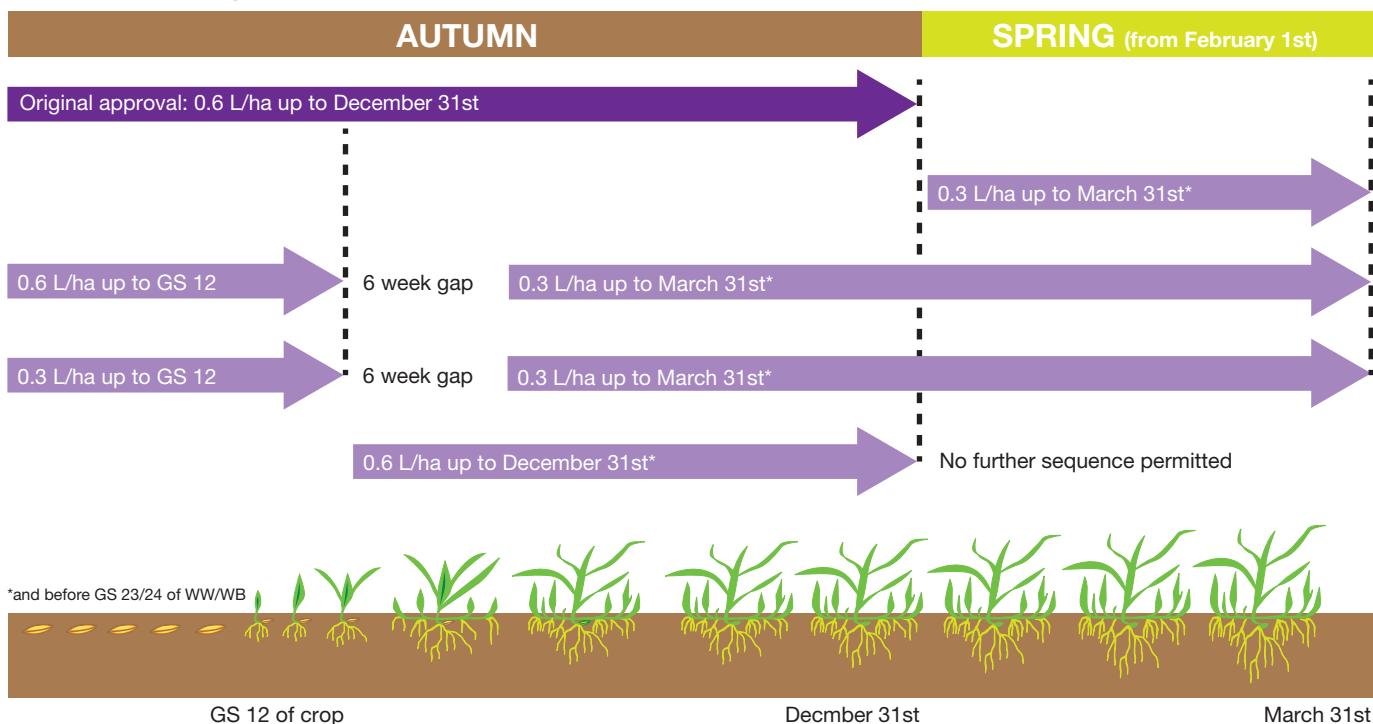
S = susceptible **MS** = moderately susceptible **MR** = moderately resistant

* Useful levels of cleaver control can be achieved, but a follow-up treatment with a specific cleaver herbicide may be required

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Weed control programmes



Best use

- ▶ For optimum levels of weed control Liberator should be applied pre-emergence of the crop, typically within 10 days of drilling
- ▶ For black-grass and rye-grass in winter wheat, if early spraying has been delayed, tank-mix Liberator with Atlantis WG + biopower and apply in autumn when the black-grass is at 1-3 leaf stage
- ▶ Good weed control depends on burying any trash or straw before or during seedbed pre-preparation
- ▶ Seedbeds must have a firm, fine tilth. Loose or cloddy seedbeds 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
- ▶ 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

Sequences and tank-mixes

- ▶ Liberator is compatible with a range of other products. For latest information visit www.bayercropscience.co.uk or call Bayer Assist on 0845 6092266 / 01223 226644.

Resistance management

- ▶ As flufenacet is little affected by herbicide resistance, Liberator can play a key part in a Resistance Management Strategy for both black-grass and rye-grass
- ▶ Typical levels of black-grass control, provided by a pre-emergence application of Liberator, range from 60-80% control depending on soil conditions and season, although higher levels of control can be achieved in some situations
- ▶ Optimising the control of grass weeds prior to a subsequent post-emergence application (e.g. Atlantis WG in winter wheat) dramatically reduces the population exposed to the post-emergence herbicide, thereby reducing its potential to select for resistant individuals
- ▶ **Always** follow WRAG guidelines for preventing and managing herbicide resistant weeds

Liberator, Atlantis WG and biopower are registered trademarks of Bayer. Liberator contains flufenacet and diflufenican and Atlantis WG contains mesosulfuron and iodosulfuron.

Use plant protection products safely. Always read the label and product information before use. Pay attention to the risk indications and follow the safety precautions on the label. For further information, please visit www.bayercropscience.co.uk or call Bayer Assist on 0845 6092266 / 01223 226644. © Bayer CropScience Limited 2013.

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