

# Pre-emergence herbicides

## Introduction

The table below lists the herbicide active ingredients that are currently available for pre-emergence use in sugar beet as either straights or in mixtures. Use of a pre-emergence treatment helps to provide flexibility with following post-emergence treatments which can be particularly useful when sprayer capacity is limited. A pre-emergence treatment should also be considered where high levels of both grass and/or broad-leaved weeds are expected.

For optimum activity apply pre-emergence treatments to moist fine, clod free seedbeds. Rainfall following application will also maintain activity. More information on pre-emergence treatments is available in the [Weed Control Fact File](#).

### Herbicide active ingredients approved for use pre-emergence of the sugar beet crop

Active (s)	Example products	MOA* (HRAC Group)	Comments
<b>clomazone</b>	Mohawk CS	Inhibition of enzyme 1-deoxy-D-xylulose-5-phosphate synthase (HRAC Group 13)	Pre-emergence only. Do not use on sands or very light soils.
<b>ethofumesate</b>	Efeckt, Ethosat 500	Inhibition of lipid synthesis (HRAC Group 15)	Main active for black-grass control at pre-emergence timing. The maximum total dose must not exceed 1.0 kg of ethofumesate per hectare in any three-year period. All 'straight' products contain 500 g ai/l but individual product labels vary regarding individual doses and timings.
<b>metamitron</b>	Bettix Flo, Goltix 70SC	Inhibition of photosynthesis at photosystem II (HRAC Group 5)	Useful partner for ethofumesate at pre-emergence timing, some effect on black-grass but will widen the spectrum of broad-leaved weeds controlled, eg fat-hen.
<b>ethofumesate + metamitron</b>	Oblix MT, Torero, Volcano	(15) (5)	Alternative option to applying these two actives as straights.
<b>metamitron + quinmerac</b>	Goltix Titan	(5) Mimics plant growth hormone indole-3-acetic acid (HRAC Group 4)	Quinmerac is only available in a formulated mix with metamitron for use at the pre-emergence timing. Useful where resistant poppies, and umbelliferous weeds are expected eg fool's parsley.

\*Mode of Action



## Weeds controlled with active ingredients approved for pre-emergence use

The table below (and continued overleaf) can be used to aid the choice of pre-emergence broad-leaved herbicide products approved for use on sugar beet. The table acts as a guide only for weeds controlled and does not override any statements made in manufacturers' technical literature or product labels.

**Table 1: Active ingredients approved for use pre-emergence in the sugar beet crop and weeds controlled**

Active Ingredients	Ethofumesate	metamitron	Ethofumesate + metamitron	Quinmerac + metamitron	clomazone
Example Products	Efeckt, Oblix 500, Ethofol	Goltix 70SC, Bettix Flo, Target Flo, Defiant SC	Oblix MT, Torero, Volcano	Goltix Titan	Argosy, Mohawk CS
Max Total dose/ha	2.0 l	5.0 l	6.0 l	3.0 l	0.2 l
Max Individual dose/ha	2.0 l	2.0 l* or 3.0 l**	2.0 l	3.0 l	0.2 l
Annual meadow-grass	S	S	S	S	NC
Annual/small nettle	S	S	MS	S	NC
Black-bindweed	S	MR	MR	NC	MS
Black nightshade	MS	MR	MS	MR	MS
Charlock	MS	S	S	MS	NC
Chickweed, common	S	S	MS	MS	MS
Cleavers	S	R	MS	MS	S
Common poppy	MS	S	S	NC	NC
Corn marigold	NC	S	MS	S	NC
Corn spurrey	S	S	MS	S	NC
Creeping thistle	NC	NC	NC	NC	NC
Dock (seedling)	NC	S	MS	S	NC
Fat-hen	S	S	S	S	MR
Field pansy	MS	S	S	MS	NC
Field pennycress	MS	S	S	S	NC
Field speedwell, common	MS	S	S	S	NC

\* Goltix 70SC

\*\* Bettix Flo, Target Flo, Defiant SC

Product rates differ according to individual product labels

Information is based on manufacturers' current recommendations and from BBRO sponsored work.

**S** = Susceptible **MS** = Moderately susceptible **MR** = Moderately resistant **R** = Resistant **NC** = No claim of control



**Table 1 (contd): Active ingredients approved for use pre-emergence in the sugar beet crop and weeds controlled**

Active Ingredients	Ethofumesate	metamitron	Ethofumesate + metamitron	Quinmerac + metamitron	clomazone
<b>Example Products</b>	Efeckt, Oblix 500, Ethofol	Goltix 70SC, Bettix Flo, Target Flo, Defiant SC	Oblix MT, Torero, Volcano	Goltix Titan	Argosy, Mohawk CS
<b>Max Total dose/ha</b>	2.0 l	5.0 l	6.0 l	3.0 l	0.2 l
<b>Max Individual dose/ha</b>	2.0 l	2.0 l* or 3.0 l**	2.0 l	3.0 l	0.2 l
Fool's parsley	R	S	MR	S	NC
Forget-me-not	NC	S	S	S	NC
Fumitory, common	S	MS	S	MR	NC
Groundsel	S	S	S	S	MS
Hemp-nettle	S	NC	S	NC	NC
Ivy-leaved speedwell	R	MS	MS	MS	NC
Knotgrass	S	S	S	NC	NC
Mayweed spp	S	S	S	S	NC
Orache, common	S	S	S	S	NC
Pale persicaria	S	MS	S	MS	NC
Parsley-piert	NC	NC	NC	NC	NC
Red dead-nettle	R	MS	S	S	NC
Redshank	S	MS	S	MS	NC
Runch	S	MR	S	NC	NC
Scarlet pimpernel	S	MR	S	S	NC
Shepherd's purse	S	S	S	S	MS
Sow thistle	S	NC	NC	NC	R
Sun spurge	NC	S	S	S	NC
Volunteer oilseed rape	MS	S	NC	S	NC
Volunteer potatoes	NC	NC	NC	NC	NC
White champion	NC	NC	NC	NC	NC

\* Goltix 70SC

\*\* Bettix Flo, Target Flo, Defiant SC

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