



Betaren Super MD, OEC

oil emulsion concentrate

ethofumesate 126 g/l + phenmedipham 63 g/l + desmedipham 21 g/l

Postemergence herbicide to control annual dicotyledonous weeds, including amaranth, catch weed bedstraw, common chickweed, dish mustard, much weed, knotweed as well as some annual grass - barnyard grass and green foxtail on the beet crops.

Advantages:

- Highly effective at reduced concentration of the active ingredient due to innovative formulation OEC
- Particles of the active ingredient in oil emulsion are at a fine state, thus providing highest stability and homogeneity of the sprayed solution, which promotes deep penetration of the preparation
- Does not have phytotoxic action on the crop that raises the level of crop yield
- Highly effective against annual dicotyledonous and some grass weeds at their early stages of development;
- Highly compatible as part of prepared mixtures with other herbicides to enhance the spectrum of action

— Presence of ethofumesate penetrating through leaves and roots ensures a long-term beet protection from weeds

Action

Mode of action

Due to its weed penetration features, oil emulsion concentrate provides significant improvement in herbicide absorption. Particularly, oil serves as a conductor of the active ingredient through the wax layer of a leaf and facilitates preparation penetration in deeper layers of a weed. Particles of the active ingredient in oil emulsion are at a fine state, thus providing highest stability and homogeneity of the sprayed solution, which promotes deep penetration of the preparation; when applied on a weed, oil emulsion distributes evenly and forms a film on the leaf surface preventing preparation evaporation and washing-off. This helps maintain preparation activity that does not depend on weather conditions.

The preparation impairs photosynthesis and protein metabolism in weeds. Phenmedipham and desmediphan penetrate through leaves and have a translaminar effect affecting photosynthesis. Ethofumesate penetrates roots and leaves and has a systemic effect impairing mitosis in cells of weeds.

Protective period

Protective period is determined by appearance of the second and third waves of weeds, which is dependent on weather conditions. The preparation affects weeds present in the plantings during spraying.

Speed of action

Visible signs of herbicide action appear depending on weather conditions on 4th to 8th day after application.

Spectrum of action

Annual dicotyledonous and some grass weeds.

Sensitive species: ragweed, speedwell (species), pepper plant (species), charlock, black bindweed, sheep bur, common fumitory, bur grass (species), satin flower, spring groundsel, common orach, pigweed (species), milkweed (species), rough-stalked bluegrass, field scorpion grass, houndsberry, caseweed, hemp nettle (species), catch weed, portulaca, wild radish, bladder campion, sandweed, field pansy, amaranth (species), dish mustard, day-nettle.

Moderately sensitive species: bluebottle, vetch, Aleppo grass, tansy mustard, velvetleaf, copper rose, loose silky bent, oat grass, sow thistle (species), green ginger, millet (species), crabgrass, foxtail (species).

Feebly sensitive species: Canadian thistle, sheepbine, foxtail, dandelion (species), ryegrass (species), field chamomile, quack grass, mayweed, quitch.

Compatibility

Compatible with a number of herbicides used at beet plantings (Healer, Forward, Mitron, Lornet, Kondor, etc.). Before use, check for physical and chemical compatibility.

Potential for resistance

No facts of resistance were observed when using herbicides based on ethofumesate, phenmedipham, and desmedipham.

Usage regulations

Crop / object of treatment	Harmful plants	Consumption rate (preparation/mix), l/ha	Method, time and conditions of application. Application time for manual (machinery assisted) operations	Wait time (application frequency)
Sugar beet, fodder beet	Annual dicotyledonous (including amaranth species) and some grass weeds	0.9-1.2 /100-200	Successive spraying of plantings at seed leaf stage of weed development (1st, 2nd and 3rd waves) -(3)	60(3)
Sugar beet, fodder beet	Annual dicotyledonous (including amaranth species) and some grass weeds	1.35-1.8 /100-200	Successive spraying at 2-4 leaves stage of weed development (1st and 2nd waves) -(3)	60(2)

Sugar beet, fodder beet	Annual dicotyledonous (including amaranth species) and some grass weeds	2.7-3.6 /100-200	Spraying of plantings at 4 true leaves stage -(3)	60(1)
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Phytotoxicity

The preparation is selective enough to avoid exposure to sugar, table and fodder beet when used in line with the proposed regulations. Phytotoxicity effect on beet plants may appear when applied at high ambient temperatures (above 25 °C) and if the crop plants are under stress (frost, drought, etc.). Safe application hours for the herbicide are morning or evening.

Application technique.Mix preparation method

Prepare the mix immediately before use. Dose the preparation for a single fill of the sprayer. Then prepare the mix as follows: Fill the sprayer tank to about its half with water, add the required herbicide dose and top up with water until full while continuously stirring using hydraulic agitators.

Rinse the empty tank several times with water that is then poured into the sprayer tank.

Prepare the mix and fill the sprayer on dedicated sites that are disinfected afterwards.

Use ground-based boom sprayers OPSh-15-01, OP-2000-2-01 or similar.

The best result and quickest herbicide action of the preparation are achieved by:

crop treatment at earlier stages of weed development;

crop treatment in the most favorable weather conditions. Optimal ambient temperature – max. 25 °C. Do not apply on beet plantings weakened by frosts, heat, and pests.

Recommendations on protection of valuable flora and fauna objects

The preparation is of low hazard to bees and fish – Hazard Class 3.

Basic provisions of the 'Guidelines for preventing bee poisoning with pesticides' and following environmental regulations:

Plant treatment is to be performed as follows:

in the morning or evening at wind speed up to 4 to 5 m/sec;

protection boundary zone for bees – min. 2-3 km;

bee's flight time limitation – 3-4 hours.

Warn apiary owners 4 or 5 days before treatment.

Do not use the preparation in private farms, by aerial method and within the sanitary zone of fishery water bodies 500 m away from the flood line in case of maximum floodwater level, but not closer than 2 km to the existing banks.

General information

Chemical class

benzofurans, carbamates

Transport and storage conditions

Keep the preparation in a room dedicated for pesticide storage. Storage temperature range – minus 10 °C to plus 35 °C. Stir before use.

Shelf life

2 years

Hazard class

Hazard class 2, dangerous compound

Packing

5 liter PE container

Registrant

Schelkovo Agrohim, Russia

Manufacturer

Schelkovo Agrohim, Russia