



Ballista, OD

Oil dispersion

mesosulfuron methyl 30 g/L + flumetsulam 17 g/L + florasulam 12 g/L + mefenpyr-diethyl (antidote) 90 g/L

Cross-spectrum herbicide for cereal crop protection

Advantages:

- A unique product in terms of combination of active ingredients and formulation
- Control of mixed weed infestation without the need for preparing tank mixtures
- Control of tough weeds: cheat grass, jointed goat grass, etc.
- A wide application window in spring and autumn
- No phytotoxicity
- Without restrictions for crop rotation

Action

Mode of action

Ballista, OD is a systemic herbicide. Effective against a wide range of dicotyledonous and grass weeds because of mutually reinforcing effects of three active ingredients.

Florasulam and flumetsulam inhibit acetolactate synthase (ALS inhibitors), an enzyme involved in biosynthesis of essential amino acids in meristematic tissues of weeds. They are mainly absorbed by the leaves of weeds and quickly move to the root system and stems, where they accumulate in growth points and exert an herbicidal effect. Both substances suppress the growth of dicotyledonous weeds.

Mesosulfuron methyl is an ALS inhibitor that suppresses the growth of both dicotyledonous and grass weeds. Its mechanism of action is different from that of graminicides (acetyl-CoA carboxylase inhibitors); thus, it is effective against tough grass weeds: cheat grass, jointed goat grass, etc.

Mefenpyr-diethyl (antidote) ensures rapid degradation of sulfonyleurea in crops, preventing their phytotoxic damage.

Ballista, OD herbicide has an innovative oil formulation: oil dispersion, that provides maximum effect of active ingredients regardless of weather conditions.

Protective effect period

The herbicide controls weeds present in the crop at the time of application but provides no residual control against later-emerging weeds.

Rate of exposure

Growth of sensitive weeds stops one day after the product enters the plant. First visible signs of weed suppression appear 1–2 days after application.

The most rapid herbicidal effect can be achieved by spraying weeds during early growth phases, as well as under favorable growth conditions (optimal humidity and temperature).

Spectrum of action

Annual and perennial dicotyledonous weeds, annual grass weeds

Sensitive species: thistle species, catchweed, chickweed, black bindweed, chamomile (sp.), cruciferous weeds, lamb's quarters, field poppy, cheat

grass, jointed goat grass, wild oat, bent grass, foxtail grass, couch grass (partially), etc.

Compatibility with other preparations

Use in tank mixtures with other pesticides and agrochemicals is not recommended to avoid phytotoxicity.

Product application features

After treatment, a temporary reduction in the green color intensity of cultivated plant leaves may occur, appearing as spots or localized near the leaf margin. The color may range from light green to whitish to yellowish. These symptoms are rare and are typically linked to extreme weather conditions (low/high temperatures, insufficient/excess moisture) occurring right at, before, or immediately after herbicide application. The physiological color change typically recovers within 10–14 days after treatment, provided that temperature and humidity conditions return to the region's average seasonal values.

Usage regulations

Crop	Harmful object	Product consumption rate, l/ha	Working liquid consumption rate, l/ha	Method, time, features of application	Waiting time, days (number of applications)

Spring and winter wheat	Annual and perennial dicotyledonous weeds, including thistle species; annual grass weeds, including cheat grass and jointed goat grass; perennial grass weeds, including couch grass	0.3-0.5	200-300	Spraying of crops in autumn during the three-leaf-tillering stage and early weed growth phases, or spraying of crops in spring, from tillering till the second internode formation	60(1)
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Attention!

Following spring application, winter cereals, winter rapeseed and grass crops may be sown in the autumn of the same year. There are no restrictions for spring sowing the following year.

If reseeding is necessary on the same field, spring cereals, maize, or sorghum may be sown.

Do not apply the product to cereal crops undersown with clover, alfalfa, or other leguminous species.

Following autumn application, there are no spring reseeding restrictions the following year.

Peculiarities of the drug application

— use in tank mixtures with other pesticides and agrochemicals is not recommended to avoid phytotoxicity.

Pesticide application method.

Prepare the working solution immediately before use.

Thoroughly mix the product in the factory package, then prepare the stock solution. To do so, fill a separate container $\frac{1}{2}$ full with water, add the required amount of the product so that the stock solution concentration was 30–40%, and mix for 1–2 minutes. Pour the resulting stock solution into the sprayer tank, pre-filled $\frac{3}{4}$ full with water. Rinse the empty auxiliary container several times with water, drain it into the sprayer tank, make up to volume with water, and mix thoroughly.

Prepare the working solution and refill the sprayer at designated places that are to be deactivated later

General information

Transport and storage conditions

Comply with all conventional rules of toxic substance transport. Keep the preparation in a room dedicated for pesticide storage. Storage temperature range - minus 15°C to plus 30°C. Stir before use.

Shelf life

2 years

Hazard class

Hazard class 3, moderate hazard

Packing

5, 10 liter PE container

Registrant

Schelkovo Agrohim, Russia

Manufacturer

Schelkovo Agrohim, Russia