

Use of rock dust against the rape pollen beetle

Problem

The rape pollen beetle is a major pest in rapeseed cultivation. An infestation can lead to high yield losses.

Solution

Rock dust or other dusty products applied to the rapeseed plants at the beginning of developing buds prevent the pollen beetle from eating, and thus mitigates the damage. Suitable substances are silicate rock dust (product name "Klinospray"; combined with the wetting agent "Heliosol"), Kaolin (a clay mineral; product name "Surround" and others) and locally available rock dusts. Several trials on the application method and effectiveness were carried out.

Outcome

Through the use of rock dust at the beginning of the bud development, the infestation by the rapeseed beetle can be reduced by an average of one third. In the treated area the pods per square meter increased by up to a quarter, thereby increasing the yield in treated areas by around 25 %.

Practical recommendation

- **Optimal time of treatment:** The rape pollen beetles enter the fields at a temperature of 15 °C. Therefore a first treatment with rock dust is appropriate as soon as this threshold has been reached and the buds become visible between the leaves and will be reached by the spray liquid (BBCH 52).
- **Note:** Pollen beetle infestation is supported by late blooming, frequent rapeseed cultivation and cultivation close to woodland.
- A second treatment should be performed shortly before blooming begins to also protect the lateral buds. In the case of heavy rain, further applications may be required.
- Very finely ground rock dust can be sprayed with the usual farm method. More coarsely ground meal is applied with a fertilizer spreader.
- **Spray application:** In order to achieve optimal effectiveness, the rock dust should be sprayed with a large quantity of water (600 l per ha) by using a regular field sprayer (3 bar and 3,5 km/h). "Klinospray" (30-50 kg per ha) is applied in a mixture with Heliosol (2 l per ha). "Surround" can also be used without a wetting agent for an application rate of 20-25 kg. In order to create a spraying solution, mix the rock dust with the wetting agent in a bucket and pass it through a sieve before pouring it into the tank. Do not stop the circulation pump before the tank is completely empty. Immediately rinse out the tank after spraying.
- **Dusting application:** More coarse rock dusts (e.g. "Klinofeed" or other products) can be applied with the bar spreader or a pendulum spreader. Pneumatic fertilizer spreaders are not suitable. Application with a fertilizer spreader is very labour-intensive as the maximum working width is 6 m, which means that several paths within the crop are necessary. During application, there must not be any wind. The quantity required is about 200-250 kg per ha.

Applicability box

Theme

Pest and disease control

Geographical coverage

Global

Application time

When the temperature reaches more than 15 °C or when the buds appear between the leaves.

Required time

Per application with a sprayer: about 0,5 hours per ha; per application with a fertilizer spreader: about 1 hour per ha

Period of impact

Current crop

Equipment

Field sprayer (or fertilizer spreader)

Best in

In well-fertilised rapeseed crops in risky sites before/at the time of arrival of beetles.



Left: Rape pollen beetle on rape flower buds, right: Spray deposit after application of Klinospray (photos: Claudia Daniel, FiBL).

Practical testing

If this method seems to be suitable for your farm, we recommend that you test the method as follows:

1. Before the first spraying, designate a part of a field that you want to apply the treatment on (e.g. width of the spraying bar). Mark the limit to the rest of the field with a stick at both ends of the field.
3. Apply the new method on one of the two plots. The other plot can be cultivated as usual.

Evaluation and sharing of the results

Visual evaluation: In order to evaluate the efficiency of the method, visit the field when blooming starts and compare the blooming intensity in both plots from a raised location or by using a drone.

Quantitative evaluation: For an exact evaluation, you can take plant samples after blooming has finished (20 plants per plot) and count the number of emerging pods. However, this method is very labour-intensive.

The yield per plot can be evaluated during harvest: modern combine harvesters measure yield directly when passing through the crop. Alternatively, the yield can be harvested in strips, filled into bulk bags and weighted. When harvesting per plot, it is important to note that (1) a field edge of 12 m should be harvested first to avoid an edge effect; (2) all strips are of the same length; and (3) not the entire width of the plot is harvested, but only a strip in the middle of each plot. Did the additional time and cost of the applications pay off?

Share your experience with other farmers, advisors and scientists! Use the comment section on the [Farmknowledge platform](#)! If you have any questions concerning the method, please contact the author of the practice abstract.

Further information

Video

- [Cultivation of rapeseed and control of the rape pollen beetle](#) (June 2016, German).

Links

- Crop guide [organic rapeseed](#) and technical guide [rape pollen beetle](#) by FiBL.
- Check the [Farmknowledge tool database](#) for more practical recommendations regarding pest control.

About this practice abstract and OK-Net Arable

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