

Nitrogen supply for organic winter oilseed rape

Problem

Modern varieties of winter rapeseed require a lot of nitrogen in early spring. In cool, moist and dry soils, N mineralisation can be inhibited, which leads to an insufficient N supply and yield losses.

Solution

Fast-releasing fertiliser application in autumn and spring can perfectly complement the basic fertilisation (applied via crop rotation and manure before sowing) and prevent a lack of nitrogen in spring (figure 1).

Benefits

Optimal fertilisation ensures that current rapeseed varieties reach their full yield potential.

Applicability box

- Theme**
Nutrient supply
- Geographical coverage**
Areas with winter oilseed rape cultivation.
- Application time**
From mid-February (start of growth) until end of April (plant height 20 cm).
- Required time**
1-2 applications.
- Period of impact**
In the winter rapeseed crop
- Equipment**
Dribble hose, fertiliser spreader
- Best in**
In case of insufficient N supply

Practical recommendation

- In conventional cultivation, nitrogen uptake of winter oilseed rape amounts to 140 kg N per ha for a yield expectation of 35 dt per ha. In organic agriculture, about 100 kg N suffice for a yield expectation of 20-25 dt.

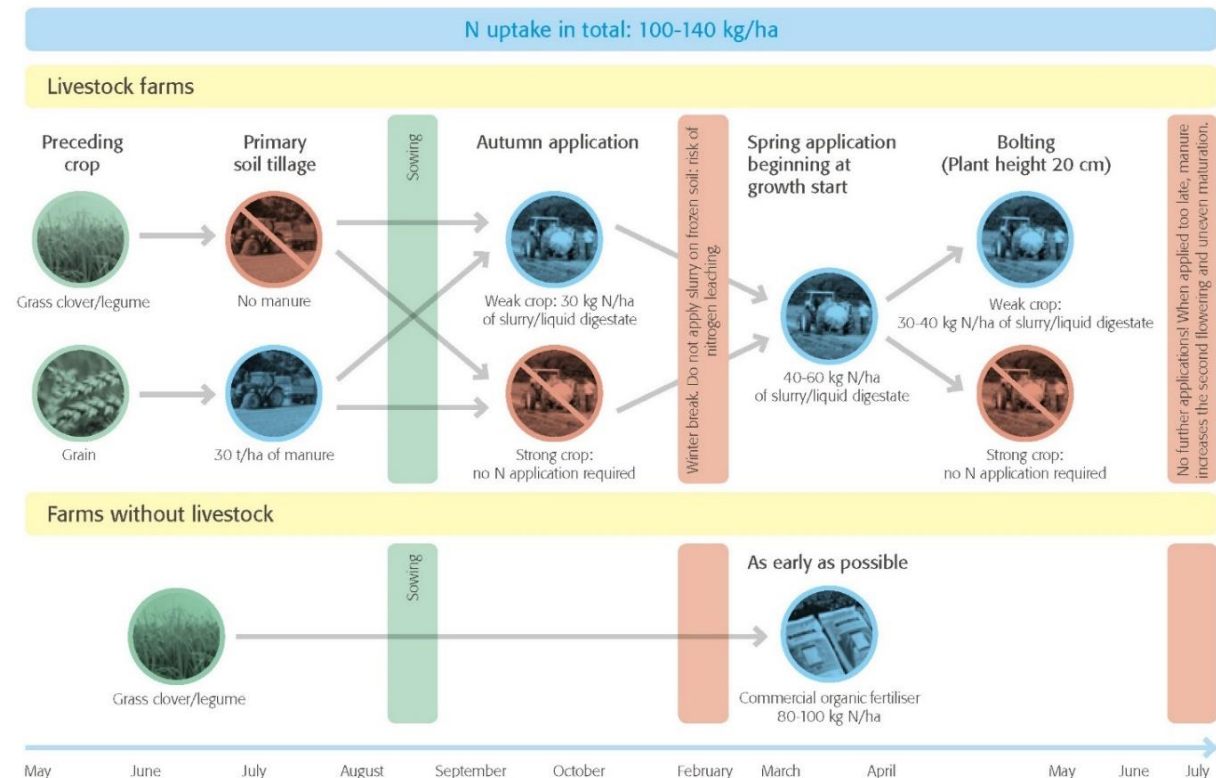


Figure 1: Nitrogen uptake and nitrogen input on farms with and without livestock.

- The ideal time for cultivating oilseed rape is after grass-clover or legumes. After grains, apply about 30 tonnes of manure or manure compost per ha before cultivating rapeseed.
- In dry conditions in spring, an early single application of nitrogen is preferable to two smaller applications. In the case of slurry with a low N content, two applications are often required because a maximum of 40 m³ of slurry can be applied at once. Regularly analyse the N content of your slurry (regular content: 1 kg of N per m³ of slurry or tonne of manure, respectively; range: 0 to 3 kg available N per m³ for cow slurry diluted 1:1, 3 kg available N per m³ for pig slurry). The N contents of commercial fertiliser and liquid digestate are disclosed by the suppliers.
- On farms without livestock, one dose of organic commercial fertiliser is applied in early spring (figure 1).

Practical testing

If this method seems to be suitable for your farm, we recommend that you test it under your own farm conditions as follows:

- Choose a plot with consistent growing conditions. Avoid areas with varying soil types, areas that are water-logged or located near field margins.
- Create two strips per type of fertiliser at double the working width of a combine harvester.
- Markings at the edge of the field make it easier to identify the trial plots for the evaluation.

Evaluation and sharing of the results

- Growth height, density and green colouration of the plants can be examined visually by e.g. taking photos from a raised location or a drone.
- For an exact evaluation, take plant samples from the differently fertilised strips after flowering has finished (BBCH 69, at least 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 the plot, leave out a field edge of 12 m and the peripheral area of the plot. Make sure that all strips are of the same length.

Use the comment section on the [DiverIMPACTS discussion forum](#) to share your experiences with other farmers, advisors and scientists! If you have any questions concerning the method, please contact the author of the practice abstract by e-mail.



Further information

Video

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

Weblinks

- [Crop guide](#) on organic oilseed rape by FiBL.
- The [Organic Farm Knowledge](#) tool database offers practical information on pest control in rapeseed crops.

About this practice abstract and DiverIMPACTS

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DiverIMPACTS: The project is running from June 2017 to May 2022. The overall goal of DiverIMPACTS - Diversification through Rotation, Intercropping, Multiple Cropping, Promoted with Actors and value-Chains towards Sustainability - is to achieve the full potential of diversification of cropping systems for improved productivity, delivery of ecosystem services and resource-efficient and sustainable value chains.

Project website: www.diverimpacts.net

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