PRACTICE ABSTRACT NR.009

Nitrogen supply for winter oilseed rape

Problem

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

Solution

Fast releasing fertilizer 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.

Outcome

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

Practical recommendation

Applicability box

Theme
Nutrient supply

Geographical coverage
Areas with winter oilseed rape cultivation

Application time
From middle of February (start of growth) until beginning of May (beginning of flowering)

Required time
1-2 applications.

Period of impact
In the winter rapeseed crop

Equipment
Dribble hose, fertilizer spreader

Best in
In case of insufficient N supply

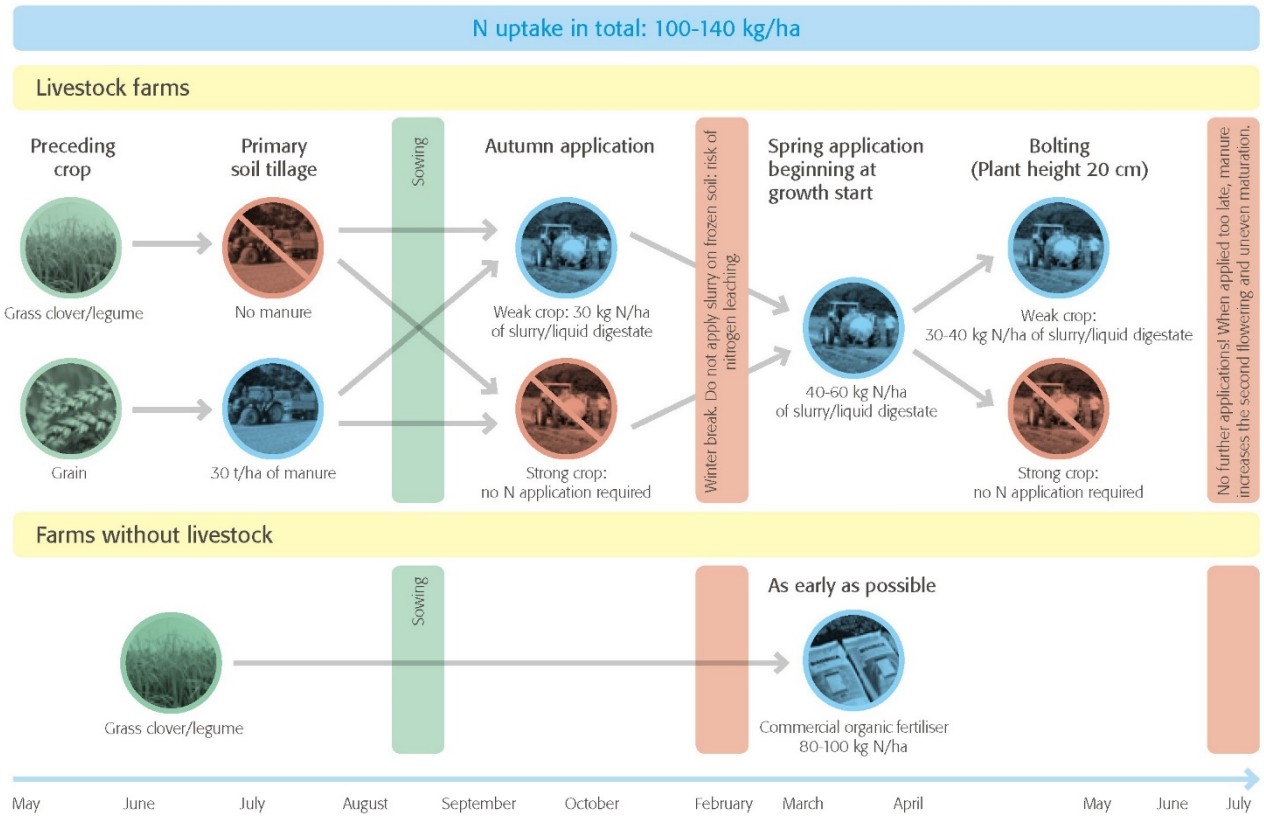

Figure 1: Nitrogen uptake and nitrogen input on farms with and without livestock.

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- In conventional cultivation, the 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 suffice for a yield expectation of 20-25 dt.
- The ideal time for cultivating oilseed rape is after grass-clover or legumes. After grains, apply about 30 tonnes per ha of manure or manure compost 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 maximum of 40 m^3 of slurry can be applied at once. Regularly analyse the N content of slurry (regular content: 1 kg of N per m^3 of slurry or tonne of manure, respectively; range: 0, 3 kg N per m^3 for cow slurry to 3 kg N per m^3 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.

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 waterlogged or located at the edge of the forest.
- Create two strips per type of fertilizer 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 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 (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 Farmknowledge platform 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).

Links

- Crop guide organic oilseed rape by FiBL.
- The Farmknowledge tool database offers practical follow-up information on pest control in rapeseed crops.

About this practice abstract and OK-Net Arable

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