IDENTIFYING APPROPRIATE METHODS FOR HIGH OILSEED RAPE YIELDS

The foundation for high oilseed rape yields is laid in autumn. This is general knowledge, but is it just a phrase or do oilseed rape growers really need to observe certain practices before and after drilling in order to raise their yields?

In most regions in Germany, oilseed rape is grown either after a crop of wheat or barley in the rotation. The advantage of growing oilseed rape after grain is that the field is cleared early, followed by a cultivation pass that suits the current weather conditions so that oilseed rape is then drilled in good time. The best timing is from the middle to the end of August and possibly into mid-September in favourable locations. Yet the quality of the seedbed is more important than the seed date. Especially in very dry years, it is important that growers choose a cultivation technique that prevents the evaporation of residual soil moisture to provide optimum conditions for the crop to establish well. When this is the philosophy, it would be necessary to bring the drilling date either forward or to postpone it.

Site- and seed date-optimised varieties are guarantors of success

Choosing a specific variety that is bred to meet specific site conditions or a specific time window is particularly important when the seed date is either very early or very late. Very early varieties must show a slow growth before the winter in order to prevent stem formation and overgrowth, whereas varieties that are sown as late as in September should show a vigorous development before winter. The breeder RAPOOL-Ring GmbH markets the varieties LUDGER and SMARAGD which offer growers a large time window. The variety SMARAGD has a flat leaf rosette which does not tend to stem before winter and is therefore shoot-proof and very suitable for early sowing; by comparison, LUDGER develops rapidly in autumn and scores the highest yields in official trials on late sowing dates that were carried out by the federal state in 2019 and 2020 (see Fig. 1).

Having laid the foundation by selecting a site-specific variety and choosing the optimum date, there are still a number of factors that jeopardize high yields relating to autumn sowing and weather conditions.

Field inspections are important Insects.

Carrying out regular field inspec-tions to detect insects and pathogens is important both in autumn and in spring. Slug control may not have been extremely important in the last two or three years of drought which reduced the numbers to zero. Nevertheless, to minimise leaf damage by slugs it is good practice to carry out an initial inspection just a few days after drilling and to continue this practice until the rows are closed. These checks are carried out easily by spreading a wet jute bag on the dry surface, and then keeping the bag wet and inspecting it in the early morning hours. Aphid traps have proven themselves as indispensable for plot specific checks. They should be installed before the pests have a chance to enter the field, which means immediately after drilling. If possible, place the traps plot by plot so you can make the application of the insecticide plot specific. Look out for the cabbage stem flea beetle.

The proper seedbed is a critical factor in achieving high oilseed rape yields.

which arrives in autumn when weather conditions are right. During autumn and in mild weather, inspect and empty the aphid traps about every two days. For any treatment it is important to adhere to the minimum dosage instructions while also bearing in mind your resistance management.

In general, any type of pest control measure should

- observe the minimum dosage instructions,
- the right timing for the treatment: if no serious infestation is observed, consider postponing the treatment to the middle or end of October when it is more effective, because it will cover almost all larvae.
- dilute generously and spray the full application rate
- protect beneficial insects

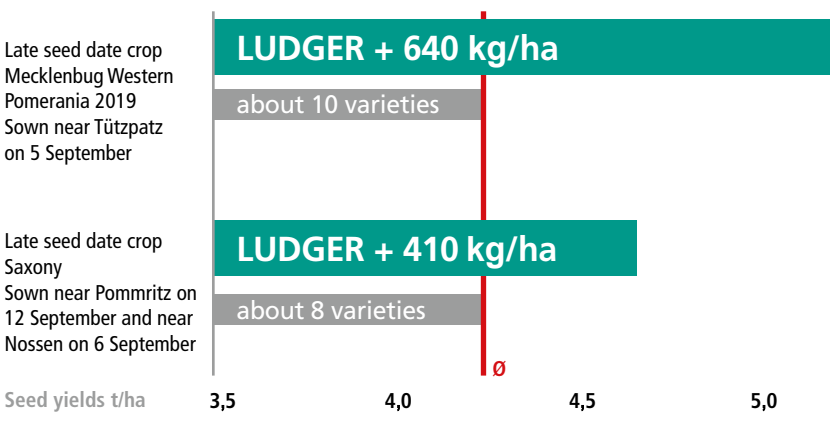
Diseases. Another issue is the inspection for phoma infections for which the weather is the single most important factor. The crops should be observed very closely during periods of wet weather when the risk of infestation in early growth increases. Digital helpers are available on various internet platforms or apps like WhatsRaps where useful information is shared for rapeseed growers.

Whittling back. It may be necessary to apply growth regulators to inhibit the autumn development and avoid overgrowth. The active substances metconazole and tebuconazole have high efficacy rates at lower application rates in the 4–6 leaf stage. As a guideline, well-developed oilseed rape stands should meet the following characteristics before winter:

- 8–12 leaves
- 10–12 mm diameter root necks
- Max. 20 mm shoot length

Fertilisation. The new Fertiliser Ordinance that was enforced last year translates into substantial cuts in the application of fertilisers containing significant nitrogen levels. This means that fertilisation in autumn is either greatly reduced or cancelled altogether.

FIGURE 1: THE SEED DATE IMPACTS YIELDS



Source: RAPOOL 2021, inhouse calculations to LSV 2019 and 2020 Late Seed Trials

Rapeseed has very positive effects on the supply of nitrogen –

1. even in red areas, it may be permitted to apply fertiliser in autumn provided conditions are right (Nmin sample = < 45 kg N/ha; max. 60 kg N/ha total N)
2. Modern oilseed rape hybrids require a nitrogen quantity of only about 3.2 kg N/ha for a grain yield of 100 kg/ha
3. Reducing the input of nitrogen reduces seed yields on the one hand, but increases the oil level in the seeds on the other.
4. Within the rotation, oilseed rape leaves a well rooted soil and high levels of nitrogen, both of which are readily available to the following crop.

Summary:

Selecting the proper variety for a specific sowing date - be it early or very late – and carrying out field inspections are the most important tools in autumn and throughout the vegetation period in order to be able to carry out targeted measures against insecticidal pests, fungicidal diseases or for pruning. Another advantage of using a specific variety is that it increases your flexibility in terms of the seed date, which in turn helps your time management and cuts work load peaks, because it extends your harvest window. With oilseed rape in the rotation you can make very efficient use of the fertiliser that is applied in autumn, so you can target those patches that show poor performance. That said, it is necessary to evaluate very carefully whether an autumn input is necessary, because an autumn application will restrict your options in spring significantly. Therefore, the initial and most important foundation for good oilseed rape yields is well developed autumn stands and good management skills. Good market prices encourage growers and help stabilise oilseed rape growing in Germany.

Thorsten Ernst
Lippstadt
Fon +49 2941 296 469