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That’s how to make the intercrop a success!

Tips for growing intercrops in sugar beet crop rotations

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In the 1990s, crop rotations were considerably limited by the need to economise and the resulting lack of intercrop cultivation. Meanwhile, intercrops before sugar beets or other spring cultures, such as maize or potato, have become a component of crop rotation. The decisive question now is, which intercrop mix is right for the respective crop rotation and how can it be established well.

Planning the intercrop as a high-quality crop rotation component

A good intercrop influences the crop rotation in the same way as a health treatment for the soil between the main crops does, and therefore must be viewed as a high-quality component of the crop rotation. Decisions must already be made when planning the crop rota-

Checklist Intercrop cultivation

- ✔ no late sowing
- ✔ suitable herbicide choice for the preceding crop
- ✔ mix selected for crop rotation
- ✔ optimal combine harvester settings (threshing loss)
- ✔ fastest possible sowing
- ✔ good seed bed
- ✔ sowing depth max. 2–3 cm
- ✔ start fertilisation sometimes recommended
- ✔ well-developed stocks, mulching if required in autumn or winter

tion, crop in view of the subsequent intercrop. With wheat, rye and triticale, for example, late sowing should not be carried out so that the harvesting date is not delayed and the intercrop can be sown at the right time. A sufficient enough autumnal treatment is recommended when considering herbicide use in the preceding crop. If a pesticide is used in spring, it is imperative that the replant restrictions are considered.

Select the right mixture

A mixture such as the new TerraLife-BetaSola, with nematode-reducing crucifera is recommended for cereal, potato and sugar beet crop rotations. With such mixtures, a sufficiently early sowing time up to the start of August, as with a single crop, is decisive for successful nematode reduction. This implies a very early winter wheat, a WCS grain or a winter barley in early threshing regions. The advantages of a mixture with crucifera and legumes over a mustard or oil radish single crop are considerably improved root penetration, improved crumb stability (see Fig. 1) and a lower nitrogen requirement.

If the crop rotation includes winter rape, there is generally no cultivation of crucifera because, just as rape, this can increase the occurrence of clubroot. Thus, from a healthy four- or five-year rape rotation, a very short crop rotation of the host plant can be created through the cultivation of intercrops as spring crops.

Using prognosis models, emerging rape in the regionally common crop rotation sugar beet – winter wheat – winter rape – winter wheat must be eradicated to fight nematodes before they hatch.

Furthermore, for the above described reasons of the increase in clubroot, this crop rotation rules out the cultivation of nematode-resistant mustard or oil radish. In such a crop rotation and in locations under less pressure from nematodes, the crucifera-free mixture TerraLife-Beta-Maxx is ideal. Furthermore, a nematode-resistant sugar beet variety can be selected if there is any doubt.

Optimise the sowing conditions

The harvest of the preceding crop must take place under good threshing conditions in order to be able to offer the intercrop good growth conditions right from the start. An optimal combine harvester setting ensures the lowest possible threshing losses, good chopping quality and uniform distribution of straw and chaff. Harvesting during the day is always preferable as threshing losses are increased due to the in-

Fig. 1: On this test field, the different root penetration and crumb stability could be evaluated well after 3 days and 5 mm rain.

Fig. 2: No straw layer should be created during preparation with a short disc harrow

The fast sowing of the intercrop mixture after the harvest weakens the competitive power of the self-sown cereal.

creased humidity during the night. This in turn leads to greater competition of the intercrop by the self-sown cereal.
The intercrop mixture must be sown as quickly as possible after the harvest in order to weaken the competitive power of the self-sown cereal. he old rule applies here “A day in August is like a week in September or the whole month of October”.

Waiting to apply organic fertiliser before sowing is also not recommended. If the logistics don’t allow this quickly enough, it is better to apply the organic fertilisation to the crop using the appropriate technology. Intercrop mixtures, particularly those containing legumes, have a lower nitrogen requirement than purely cruciferas (mustard or oil radish).

Optimal machine settings are important

Regardless of whether drill sowing, mulch sowing or plough sowing, the optimal machine settings are important: This includes a proper calibration test even for an intercrop. Due to the different grain sizes in the intercrop mixture, the gate setting on the machine must reflect the largest seeds, e.g. lupin, field pea or vetch, so that these are not crushed. If the opening is too large, the small-grained types such as clover or Phacelia trickle through and, particularly during fast sowing, this leads to high seed amounts being sown by some machines. If in doubt, the sown amount must be determined according to surface area in order to correct the drilling machine settings as required. The sowing depth is also important. For TerraLife mixtures this should be a max. of 2–3 cm.

However, with the most commonly used sowing technique, mulch sowing, there is really no time to lose. After preparation with a small-toothed grubber, the seeds must be sown as quickly as possible with a combination driller “fresh in fresh” to maintain the dormancy of the wheat as far as possible and to allow little water evaporation. Rolling the surface may help if necessary.

If a short disc harrow is used during preparation, no straw layer should be produced at approx. 5–10 cm depth (Fig. 2). This would prevent the seeds making contact with the soil and lead to the plants drying out after germination.

For successful sugar beet sowing, very well developed intercrops stocks can be shortened in autumn or winter using a mulcher, cylinder mower or the like. Less lush crops are worked similarly in spring.

Conclusion

If similar importance is attached to the intercrop as to the main crop, then there is nothing standing in the way of successful culture. Good intercrop stocks contribute to soil fertility through a multitude of characteristics. The biological activity of the soil is activated and contributes to the success of the main crop through improved soil structure.

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By using the right TerraLife intercrop mixture, the soil is optimally prepared for the successive crop.