

Intercropping grain peas with barley

Problem

Grain peas are a valuable forage crop in regions that import soybeans. Cultivated as a pure crop, grain peas have an insufficient strength, and this often leads to greater late-weed infestation and difficulties when harvested.

Solution

The cultivation of half-leafless grain peas and barley as a mixed crop. The barley serves as a supporting crop, significantly increasing the pea yield. After several years of trials in Switzerland, the mixed crop of grain peas and barley has achieved the most yield-stable combination for protein production.

Outcome

Barley prevents pea lodging, thus reducing the losses during threshing, and increases the quality of the harvested crop. The cereal crop also improves the soil cover, suppressing weeds. Growing two crops at the same time reduces the risk of yield loss.

Practical recommendation

- The seed bed should be not too fine-grained after cultivation or reduced tillage (advantage: better channel flow from deeper soil layers during drought periods). A further possibility is mulch-till, whilst on heavy soils a plough with subsoiler might be needed. Possibly application of green manure or compost.
- For seeders with only a single tank, mix the seeds well at the ratio of 80 % peas and 40 % barley (relating to the standard sowing quantities of both crops) before filling the seeder. Until sowing, repeatedly check the homogeneity of the mixture, and for seeders with two or more tanks, apply the seeds of the mixture partners separately.
- Sow with a conventional seeder, not too early to keep the pea plants small enough during winter, and with a row spacing of 12 cm and a placement depth of 3 to 4 cm into the same or in separate rows (depending on the sowing technique).
- Weed control is usually not needed. If there is high weed pressure, harrow or hoe it once.
- No nitrogen fertilising for the crop. Irrigation would only be needed in an extremely dry year.
- Harvest: Adjust harvester sieves to peas. Open threshing concave and hulling bars wide enough. Low drum rotation. Keep the air flow lower compared to a pure pea harvest; check regularly for grain loss. Place the Vario-table in the back. Adjust to an aggressive cutting angle.
- In order to avoid legume fatigue in the soil, only cultivate the mixed crop every seventh year. Do not grow lupins, vetches, Lucerne or pure stands of red clover in between.

Applicability box

Theme

Crop-specific measure

Geographical coverage

In peripheral regions of soy cultivation

Application time

Sowing

Required time

No additional time during cultivation. The harvested crop needs to be separated at a collection point.

Period of impact

Duration of crop

Equipment

Conventional cereal seeder

Best on

Deeper, not too dry soils for the farm's own production of concentrated feeds on peripheral soy locations. Suited for stockless farms with little grass-clover in the crop rotation.