

Catch crop in maize

Problem

As a late-sown crop with a large row spacing and slow early development, maize is vulnerable to erosion. Crop cover takes place as late as mid- to end of June. Soil compaction due to the use of heavy harvest machinery can further contribute to soil erosion.

Solution

Due to its late establishment and tall growth, maize is well suited to catch cropping with pure or mixed clover (for stockless farms), or with overwintering, single-year grass-clover (for livestock-holding farms).

Outcome

- Reduction of soil erosion, given a good development.
- Suppression of seed-propagated weeds.
- Better load-carrying capacity of the soil during harvest.
- Fixation of nitrogen thanks to the legumes, and utilisation of nutrients in the soil after maize harvest.
- Grazing possible immediately after maize harvest.

Inconveniences

- Competition for water in the case of severe drought.
- Cost of seeds.

Practical recommendation

- Sow the maize at the beginning of May.
- If possible, harrow a first time before appearance of the maize plants (blind harrowing). Second harrowing should take place at a plant height of 10 cm, when the maize plants are well rooted. Between a plant size of 10 to 20 cm a first hoeing should take place.
- Apply liquid manure at 25-30 m³ per ha.
- When the maize plants reach a height of about 20 to 30 cm (from 4- to 6-leaf stage), undertake a second hoeing. Combine the second hoeing with simultaneous sowing of the catch crop into the weed-free crop.
- Recommended pure crops/crop mixtures:
 - Pure-clover crop: small-leaved white clover, hop clover, red clover (200 g/a) or sub clover (300 g/a). White clover and hop clover are less competitive than red clover or sub clover. Attention: Egyptian, Italian and Persian clover are normally too competitive.
 - Clover-mixtures are less risky: E.g. sub clover/red clover (at a mixing ratio of 5:2, a total of 300 g/a) or white clover/hop clover 1:1, a total of 200 g/a.
 - For farms with livestock, mixtures of grass and clover are an option. They can be used for grazing in autumn: E.g. white clover/smooth meadow-grass or meadow fescue or ryegrass (at a mixing ratio of 1:1, a total of about 250 g/a). Attention: ryegrass can be too competitive depending on the weather conditions.

Applicability box

Theme

Weed management, soil quality and fertility

Geographical coverage

In Central European maize-cultivation areas with a moderate climate without pronounced drought periods

Application time

Sowing of the catch crop 4-6 weeks after planting maize

Required time

Additional sowing procedure. If the sowing is combined with second hoeing, no additional procedure is required; forage-growing purpose of the catch crop after maize harvest spares us a tillage procedure

Period of impact

Current crop and succeeding crop (nitrogen supply, soil structure)

Equipment

E.g. small seed dispenser mounted on hoeing machine

Best in

Maize, barley, wheat and rape seed