PRACTICE ABSTRACT N0.040

Autumn cover crops

Problem

After harvesting summer crops (maize, soybean, sunflower, etc.) the soil remains bare until the following spring, which can lead to erosion and leaching.

Solution

A possible solution is to drill cover crops that protect the soil before the arrival of winter frost and low temperatures.

Outcome

Best results were reached with cereal mixtures that were produced on farm, such as barley and rye.

Practical recommendations

Observations and hints

- In Northern Italy, a mixture of barley and rye fits best in a wide range of situations.
- Sow as soon as possible after harvesting the summer crops.
- If the soil is not clean enough, a shallow soil labour can be applied. Otherwise, direct sowing is preferred.
- Including legumes in the mixture, such as vetch and/or faba beans, has been shown to be advantageous when the cover crop is sown in early September or October, and the succeeding crop is sown at the end of May.
- In case of early sowing by end of August, a cover crop consisting of only white mustard showed good results, especially in its de-compacting ability, due to its taproot.
- The cover crop should be sown evenly. Areas with no seeds can promote weed growth.
- When possible, it is preferable to apply reduced tillage to prepare the seedbed in spring. Thus, the positive effects of the cover crop taproot system are preserved.

Applicability box

Theme
Soil fertility, weed management

Geographic coverage
Global

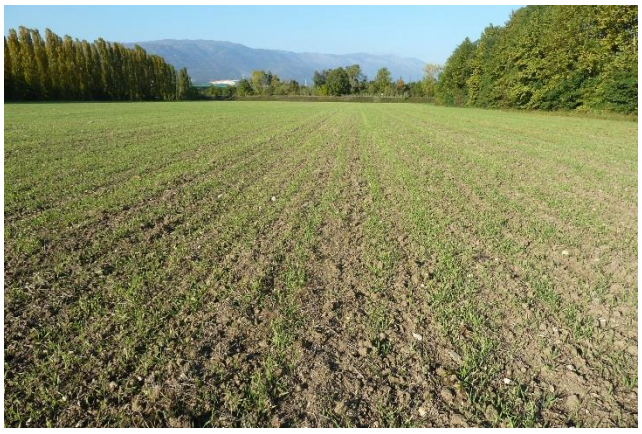
Application time
After summer crop harvest

Required time
Seedbed preparation, sowing, cover crop termination

Period of impact
Succeeding crop

Equipment
Minimum-till or no-till seeder

Best in
Areas where minimal autumn temperatures lie above 0 °C.



Picture 1: Barley cover crop sown at the end of September, 2015. Date: 20/10/2015.

Picture 2: Barley cover crop. Date: 05/05/2016.

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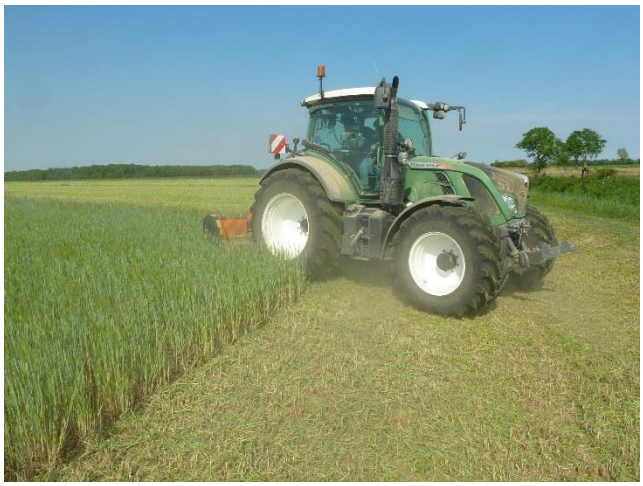

Picture 3: Chopping barley and rye cover crop. Date: 21/04/2016

Picture 4: Faba bean and vetch cover crop. Date: 21/04/2016

Assessment and sharing results

Assessing soil structure: Assess porosity at field level (see Visual soil assessment: field guide for cropping).

Assess the effect of cover crops on weeds: Visually compare the effect of cover crops on weeds before the cereals.

Earthworm assessment: Assess the number of earthworms by the number of worm droppings per m^2 (see Earthworms: architects of fertile soils).

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

- The Spade test - Visual soil assessment in the field

Links

- At www.aiab-aprobio.fvg.it, information on organic arable crop management is available in a biweekly bulletin and a topic-specific info sheet.
- The knowledge platform of OK-Net Arable offers information and practical updates on weed management and soil quality in organic arable cropping systems.

About this practice abstract and OK-Net Arable

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