



Increasing the efficiency and competitiveness of organic crop breeding

PRACTICE ABSTRACT No. 21

Seed dressings against seed-borne diseases in organic farming

PROBLEMS:

Synthetic fungicide and insecticide seed dressing treatments against pests and pathogens are not permitted in organic agriculture if seed-borne diseases appear. Most important seed-borne diseases are common bunt (*Tilletia caries*), loose smut (*Ustilago nuda*), fusarium, Septoria, net blotch (*Drechslera teres*), barley stripe (*Drechslera graminea* and *colletotrichum*).

Therefore, good seed quality is important for organic farming.

A seed dressing for organic farming needs to have permission under the organic regulations and the national standards for plant protection.

SOLUTIONS:

There are a few seed dressings available for organic seeds.

Tillecur is made from mustard and has a good efficiency against common bunt. It can be used in liquid formulation with 3 to 4 litres of water per 100 kg of seeds or as a dry powder. Tillecur does not work against bunt spores which originate in soil.

Seed disinfectants which combat pathogens on the seed surface. Usually these are products like acetic acid or alcohol. They only work on the surface of seed against diseases like Common bunt but partially also against diseases that are partially on the surface like *Fusarium* spp. Too high a concentration causes damage of germination.



Fig. 1: Loose smut in oats.

These treatments also do not protect the seed against bunt spores originating in the soil.

Cedomon and **Cerall** (*Pseudomonas chlororapis*) products contain the same bacteria but have a different formulation. Cedomon is effective against net blotch and stripe disease in barley, and Cerall against Fusarium, Septoria and Common bunt in wheat.

PRACTICAL RECOMMENDATIONS:

- Always test your seed for seed-borne diseases and use seed of good quality.
- Disease levels should be kept at a low level in breeding and seed multiplication.
- Always check National laws to see if a seed treatment is permitted as there are differences within Europe.
- There are no treatments available against loose smut in barley.

FURTHER INFORMATION:

S. Groot et al (2020): Organic seed health. An inventory of issues and a report on case studies. In: https://www.liveseed.eu/wp-content/uploads/2021/02/LIVESEED_D2.5-Inventory-of-scientific-legal-and-technical-measures-to-improve-seed-quality-in-organic.pdf

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ABOUT ECOBREED:

ECOBREED is a 5-year (2018-2023) project funded by European Union's Horizon 2020 research and innovation programme that will improve the availability of varieties and seed suitable for organic and low-input production. Activities will focus on four crop species i.e. wheat, potato, soybean and common buckwheat, selected for their potential contribution to increasing the competitiveness of the organic sector.

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Funded by European Union
Horizon 2020
Grant agreement No 771367

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