

Application of acetic acid as a seed treatment in organic cereal seed

Problems

Common bunt is a devastating seed borne disease in wheat. If a seed lot is contaminated with just a few spores, there is a high risk that the disease will develop and reduce yield and quality of the crop. Acetic acid is very effective to control common bunt in wheat, but there is a high risk of negative effects on germination. Therefore the procedure of application is crucial for a successful treatment.

Solutions

The crucial point in seed treatments with acetic acid is to make sure that the entire seed surface is covered, to affect all bunt spores. It is crucial that the application is as uniform as possible and as fast as possible.

It is easier to cover all the kernel surface with acid, if a higher amount of acid are applied, but if so, the seed needs to be dried after 30 to 60 seconds to avoid negative effects on germination.



Figure: Vinegar treatment in a cement drum
(Photo: Matteo Petitti)

Practical recommendations

- Small seed samples (0-2kg) can be treated in a box with high amounts of acetic acid (<20ml/kg) and drying with a hair dryer or similar after 30 seconds.
- Seed samples of 5-20kg can be treated in a cement drum by applying acetic acid just enough to make the seed humid. 20ml/kg is optimal, but a slightly higher amount can be applied if the seed after treatment is spread on a clean surface in the sun or wind for drying.
- If huge amount of seed need to be treated, it is crucial not to exceed the limit of 20ml/kg, as it will be difficult to dry the seed quickly enough after treatment before germination is affected.
- If you are uncertain whether your treatment is optimal, it is better to use a lower dose, and then repeat the treatment after the seed has been properly dried.

Further information

1. Borgen, A. og B.J.Nielsen 2001: Effect of seed treatment with acetic acid in control of seed borne diseases. In: Proceedings from BCPC Symposium No. 76: "Seed Treatment: Challenges & Opportunities", eds. A. J. Biddle. BCPC, Farnham, 135-140.
2. [PA#2: Managing common bunt in wheat seed lots](#)
3. [LIVESEED video on bunt treatment methods](#)

Authors: Anders Borgen (Agrologica)

Contact: borgen@agrologica.dk

Publisher: ÖMKi Hungarian Research Institute of Organic Agriculture

Date: May 2020

LIVESEED: Boosting organic seed and plant breeding across Europe. LIVESEED is based on the concept that cultivars adapted to organic systems are key for realising the full potential of organic agriculture in Europe. Research project 2017-2021.

Social Media: Facebook [[LIVESEED](#)] & Twitter [[@LIVESEEDeu](#)]

