PRACTICE ABSTRACT No. 46

Target audience: breeders, public authorities

Special characters of varieties for organic farming in wheat

Problems

Variety testing under organic conditions is performed differently in the European countries. If an organization is planning to introduce or to modify the testing system, it is important to know about well-approved characters in order to describe the adaptation of a variety to organic farming conditions in the best way.

Solutions

In Austria knowledge has been accumulated in variety testing under organic conditions in wheat since 1995. Many characters are important under organic as well as under conventional conditions. The descriptions of organic tested varieties could influence the importance of the characters for the conventional varieties, too.

Practical recommendations

The following tests have been originally introduced in Austria exclusively for organic varieties:

- Weed suppression: the rate of ground coverage, the plant height during stem elongation and the leaf inclination are important.
- Nitrogen efficiency: the ability of the crop to produce as much protein as possible with the offered nitrogen: measured by the grain protein yield (dt/ha).
- Resistance to *Tilletia caries*: seed of the varieties inoculated by a mixture of spores of different origins.

Nowadays all varieties are classified in their nitrogen efficiency.

Figure: *The kernels of wheat are replaced by bunt balls full of teliospores of Tilletia caries (© Oberforster)*

Further information

1. BAES (2019): 12_Cereals in organic farming (available only in German). In: Austrian Descriptive list of varieties 2019 – Agricultural species. https://bsl.baes.gv.at/pdf-version/
2. Levy L., A. Osman, I. Felix & M. Oberforster (2006): Setting up variety trials for organic and low input agriculture. In: Susvar Handbook: Cereal variety testing for organic and low input agriculture. Eds. Donner, D. & A. Osman, COST 860 – SUSVAR, pp.GTS1-GTS8.

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Publisher: ÖMKi Hungarian Research Institute of Organic Agriculture
Date: April 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.
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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727230 and by the Swiss State Secretariat for Education, Research and Innovation under contract number 17.00090. The information contained in this communication only reflects the author's view. REA or SERI are not responsible for any use that may be made of the information it contains.