

How to assess weed competitiveness in organic cultivar trials with wheat?

Problems

In many EU countries, weed competitiveness is not part of official variety testing protocols. Organic farmers that forego herbicides and conventional farmers that wish to reduce spraying, face the problem of identifying wheat cultivars which are suitable for their management conditions.

Solutions

Farmers can set up on-farm trials to test different wheat cultivars. The farmer can use the cultivar which he usually cultivates as a reference variety. Next to the field, 2 to 3 cultivars are sown in strips and compared to the reference. The same management practices are performed uniformly to the trial fields. Visual assessment of a combination of different plant physiological properties can be used for evaluating the cultivar's weed competitiveness. Ideally, the trial is repeated over several seasons. Networking and discussion groups among farmers to share experiences, can help to give a good overview over a broad range of potential cultivars.



Winter wheat trial at ATK Hungary
(photo: ÖMKi)

Practical recommendations

The plant physiology gives a good indication on the variety's ability to compete with weeds. The handbook for Cereal Variety Testing for Organic and Low Input Agriculture recommends using a combination of different components:

- **Crop ground cover (%)**: measured at early tillering
- **Growth habit (e.g., inclination of leaf)**: measured at the start of tillering
- **Tillering capacity (number of shoots/m²)**: should be combined with other measurements
- **Rapid early growth to stem extension (days or 1-9 scale)**
- **Plant height (cm)**: should be combined with other measurements

Further information

1. Handbook for Cereal Variety Testing: <http://edepot.wur.nl/116544>
2. https://seedalliance.org/wp-content/uploads/2018/03/Growers-guide-on-farm-variety-trials_FINAL_Digital.pdf

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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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