

The influence of different catch crops incorporated into the soil to ragweed competition in following crops

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This experiment produced efficacy data for evaluation of influence of different cover crops sown in cereal stubbles and incorporated into the soil before sowing main crops in the following year. Besides the influence of different main crops and their sowing dates on common ragweed density and development were evaluated.

Material and methods

10 different catch crops were sown into cereal stubbles in August 2010. Catch crops - plant species in Randomized Complete Block Layout trial:

1. Untreated control
2. *Fagopyrum esculentum* (Čebelica)
3. *Helianthus annuus* (PR64H45), 65.000 seeds/ha
4. *Avena sativa* (Noni)
5. *Lolium multiflorum* (KPC laška)
6. *Guizotia abyssinica* (Mungo), 10 kg/ha
7. *Camelina sativa* (12 kg/ha)
8. *Raphanus sativus* L. var. *oleiformis* Pers. (Rauola), 30 kg/ha
9. *Brassica napus* L. var. *napus f. biennis* (Starška)
10. *Trifolium incarnatum* (Inkara)
11. *Phacelia tanacetifolia* (Balo), 15 kg/ha

In 2011 the cover crops residues have been incorporated into the soil before 3 different crops have been sown. Each main plot was divided to four subplots where spring wheat (sown on 11th March 2011), spring barley (sown on 24th March 2011) and maize (sown in two different times, 16 March and 30 March 2011). Main plot size: 8 m x 17 m (136 m²). The following parameters were reported: weed species (according to the EPPO-Code, weed number per species, total weed coverage (%) visually assessed and total weed biomass (dry matter), estimated at the last evaluation.

Results

All cover crops displayed strong suppressive effect and decreased ragweed density and coverage compared to the control plots in fall of 2010. In contrast, no significant effect of catch crops on ragweed coverage and dry matter production in wheat, barley and maize plots in the spring of the following 2011 season was determined.

Italian ryegrass and buckwheat were germinating in the spring and appearing as volunteer weeds, so their use is not recommended. In barley, wheat and maize, the greatest weed suppressive effect was exhibit by oats, buckwheat and niger seed, where weed coverage decreased compared to the control plots, where these catch crops were not incorporated.