

False seedbeds in organic grown winter wheat

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The false or stale seedbed technique is known as an effective tool of integrated weed control especially in winter crops. However, only little data are available on the additional false seedbed effect compared to the only effect of late sowing.

The effect of the false seedbed technique on weed abundance and yield has been tested in organic grown winter wheat at 3 trials (2005-2007). The investigations were focussed on the evaluation of the different effects of the false seedbed and the effects of the different sowing dates. In addition to the sowing system the seed density was also varied (300 and 450 grains m⁻²).

Early sowing resulted in high weed density and also low grain yield in all years. In 2 of 3 years weed biomass was significantly higher (28-33 g m⁻² DM) in the early sown wheat. No significant differences were found between the false seed bed technique and the late sowing. Thus, the more intensive soil cultivation had no effect on weed density, weed biomass and crop yield. Increasing seed density resulted significantly in lower weed biomass, but weed density was the same at all 3 sowing systems.

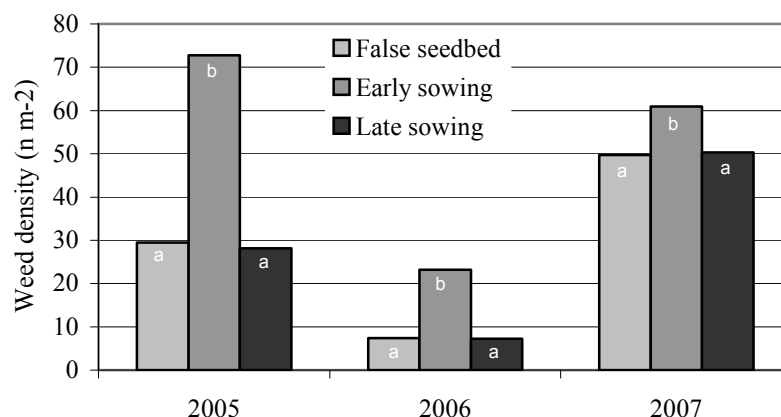


Fig 1: Weed density in spring (BBCH 21-25 of winter wheat)

However, in a long-term the false seedbed might reduce the weed seed bank, but due to the more intensive soil tillage there is also a high risk of sealing. Because of a weak correlation between weed density and wheat grain yield, yield was obviously more effected by other factors (e.g. nitrogen supply). Consequently, at least for silty soils we cannot recommend the false seedbed technique.

References

- Barberi P (2002): Weed management in organic agriculture: are we addressing the right issues? *Weed Research* 42 (3), 177-193
- Melander B; Rasmussen, IA; Barberi P (2005): Integrating physical and cultural methods of weed control - Examples from European research. *Weed Science* 53 (3), 369-381.
- Rasmussen IA (2004): The effect of sowing date, stale seedbed, row width and mechanical weed control on weeds and yields of organic winter wheat. *Weed Research* 44 (1), 12-20.