ecobreed
IMPROVING CROPS

**Increasing the efficiency and competitiveness of organic crop breeding**

PRACTICE ABSTRACT No. 11

# Sheep grazing of autumn-sown cereals

## PROBLEMS:

- Early drilled cereal crops can often develop high disease inoculum levels over winter which can pose a challenge for organic production systems.
- Early drilling can be used to increase the compretitiveness against weeds depending on location and weed species.

## SOLUTIONS:

- Grazing of autumn-sown cereals during the winter months can bolster the winter feed supply for farmers with minimal effects on grain yield. Grazing with sheep over the winter months, has shown that wheat yield can be increased, by around 0.5t/ha in places (Virgoona *et al.*, 2006).

*Fig. 1. Grazing of winter wheat with sheep in the autumn at Thornton Farm in the UK*

- By eating diseased leaves, this can reduce the disease inoculum levels and the crop can grow away cleanly in the spring. The reduction of biomass also encourages the plant to tiller more and increases root growth (Virgoona *et al.*, 2006). In addition to eating off some of the weed burden, the sheep manure can add to the soil nutrient supply and soil biology. Depending on location tillering can be very high which increases crop susceptibility to lodging.

## PRACTICAL RECOMMENDATIONS:

- Grazing is best suited to fast developing varieties that have been drilled early to help control weeds in organic production systems. However, the situation is very different depending on location so farmers should trial a small area initially to see whether grazing works in their environment.
- It is key to remove the sheep before the plants reach the start of stem extension i.e. GS30 (Zadoks *et al.*, 1974) to limit potential damage to the developing ear. A large number of sheep for a short period of time is preferred with careful monitoring essential to avoid over-grazing and poaching. Sheep can also help consolidate the soil surface which can help reduce the risk of crop-heave with winter barley being more susceptible than wheat.

## FURTHER INFORMATION

Virgoona J, Gummer FAJ, and Angus JF (2006). Effects of grazing on wheat growth, yield, development, water use, and nitrogen use. Australian Journal of Agricultural Research 57: 1307-19. doi.org/10.1071/AR06085

Zadoks JC, Chang TT and Konzak CF (1974). A decimal code for the growth stage of cereals. Weed Research 14: 415-421.

## AUTHOR

Anna Pearce (info@lcsmales-son.co.uk): LC Smales & Son Ltd (SMA), UK

## ECOBREED CONSORTIUM

Kmetijski inštitut Slovenije
Agricultural Institute of Slovenia

**ABOUT ECOBREED:**
ECOBREED is a 5-year (2018-2023) project funded by European Union's Horizon 2020 research and innovation programme that will improve the availability of varieties and seed suitable for organic and low-input production. Activities will focus on four crop species i.e. wheat, potato, soybean and common buckwheat, selected for their potential contribution to increasing the competitiveness of the organic sector.

**FOLLOW US:**
www.ecobreed.eu
@EcobreedP
@ecobreed

Funded by European Union
Horizon 2020
Grant agreement No 771367

*The sole responsibility for the content of this document lies with the authors. The publication reflects the views only of the author, and the EC cannot be held responsible for any use which may be made of the information contained therein.*