PRACTICE ABSTRACT NO.025

Controlling docks by stubble cultivation

Problem

The traditional plough with a working depth of 20 cm is only partly suitable for controlling docks as it splits the roots, making it difficult to bring them to the surface manually or with a harrow. Most of the dock roots that stay in the soil start to sprout again.

Solution

In order to clear docks, the skim plough and the flat cultivator have proved to be effective. They cut through the soil at a depth of 12-25 cm and expose the old roots. The challenge is then to bring these roots to the surface with a suitable harrow in order to collect them.

Outcome

The stubble cultivation cuts the dock roots below growth points. The vegetative plant parts are then cut off from the water and nutrient supply, and regrowth is inhibited.

Applicability box

Category
Weed control

Geographical coverage
Within the range of docks

Application time
Between the end of June and beginning/ middle of August

Required time
1 time skim plough or flat cultivator, 1-3 times harrowing, possibly collection of root-stocks by hand

Period of impact
Succeeding crop, long-term impact

Equipment
Skim plough or flat cultivator, spring-tine harrow

Best in
After an early maturing crop like winter barley or whole-crop silage.

Practical recommendation

- Summer dock treatment is especially worthwhile in dry summers with catch crop cultivation and after early maturing crops (winter barley, whole-crop silage) or with an early tillage of grass-clover.
- After grass-clover lay or cereal harvest, undercut the dock plants at a depth of 12-15 cm with a skim plough (without skimmer) with a support wheel, a stubble cleaner or an overlapping flat cultivator (Figure 1).
- Bring the roots to the surface by passing over the field with a spring-tine harrow every 7-14 days. Additionally, apply a rotary harrow in heavy soils to expose the roots.
- After every round, collect roots manually or let them dry in suitable weather conditions. Only leave fully dead roots on the field.

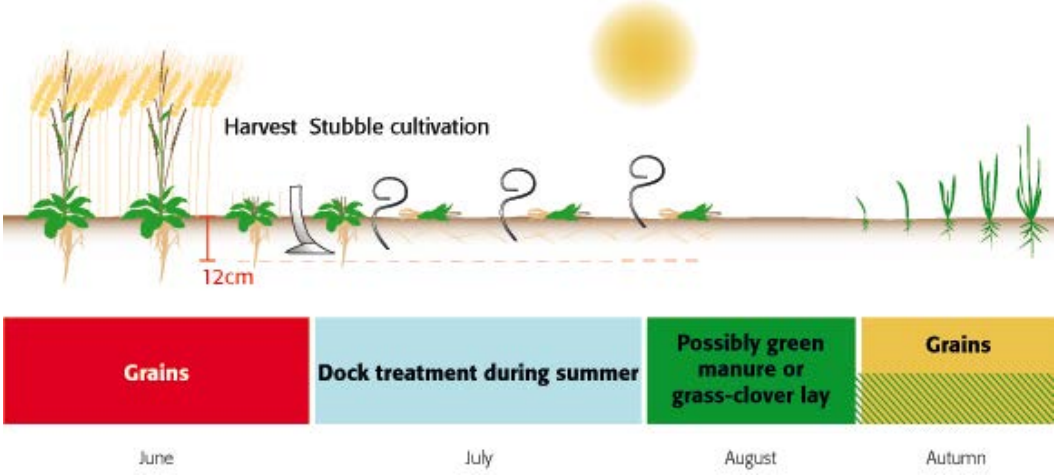

Figure 1: Dock treatment in summer by stubble cultivation after cereal harvest reduces dock infestation in the long-run.

Research Institute of Organic Agriculture FiBL. Controlling docks by stubble cultivation.
OK-Net Arable Practice Abstract.

PRACTICE ABSTRACT

Information

- Plan deep-rooted crops and annual or perennial cover crops in the crop rotation in order to reduce the water and nutrient supply in deeper soil layers and thus impair the growth conditions for dock plants.
- After a short dock treatment sow a suitable catch crop as quickly as possible, and only leave the field fallow until autumn sowing of cereals, if you intend to perform a longer treatment.
- If the dock pressure is high, refrain from sowing 4-year, slowly growing mixtures.

Practical testing

If this method seems to be suitable for your farm, we recommend that you test it under your own farm conditions as follows:

1. Divide a field or part of a field with a consistent dock infestation into two trial plots. Mark the limit between the two areas with a stick at both ends of the field.
3. Apply the new method on one of the two plots. The other plot can be cultivated as usual.

Evaluation and sharing of the results

Visual evaluation: In order to evaluate the efficiency of the method, you can visually estimate and compare the weed density in the main crop following the stubble cultivation before the weed control on both trial plots. Document the two plots with photographs for later evaluation.

Quantitative evaluation: For a quantitative evaluation of the weed density, you can count the number of docks within a square with a side length of 1 metre (which can be formed by e.g. two yard sticks). The square is placed in both trial plots six times along a diagonal line. The average number of the six measurements per plot multiplied by 10,000 results in the hypothetical number of docks per hectare. This number serves as a reference in later stubble cultivation.

Use the comment section on the Farmknowledge platform to share your experiences with other farmers, advisors and scientists! If you have any questions concerning the method, please contact the author of the practice abstract by e-mail.

Further information

Video

- Regulierung von Wurzelunkräutern bei der Stoppelbearbeitung mit Schälpflug oder Grubber (German with English subtitles). The video presents two types of machinery for stubble cultivation and opens up a debate on their use for weed control and other aims of stubble cultivation.

Links

- Check the Farmknowledge tool database for more practical recommendations regarding stubble cultivation and weed control.
- Technical guide Ampferregulierung by FiBL (German; the English edition will be available in spring 2017).

About this practice abstract and OK-Net Arable

Publishers:
Research Institute of Organic Agriculture (FiBL), Switzerland
Ackerstrasse 113, Postfach 219, CH-5070 Frick
Phone +41 62 865 72 72, info.suisse@fibl.org, www.fibl.org

IFOAM EU, Rue du Commerce 124, BE-1000 Brussels
Phone +32 2 280 12 23, info@ifoam-eu.org, www.ifoam-eu.org

Authors: Hansueli Dierauer, Franziska Siegrist and Gilles Weidmann (FiBL)

Contact: hansueli.dierauer@fibl.org

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