

Weed control in organic pome fruit growing: Combining different approaches

Problem

For yield security, weeds in the tree strip of low-stem orchards must be regulated. Young plantations, in particular, are otherwise in tough competition for water and nutrients.

Solution

Different devices for mechanical weed control bring specific advantages & disadvantages. A combined use of several devices in the overall strategy is recommended for optimal management. Synthetic herbicides are not allowed in organic farming.

Benefits

The disadvantages of relying on one machine can be partially compensated by combining different approaches and tools. This optimised tillage makes it possible to adapt to different conditions (e.g., weather, soil conditions, etc.).

Applicability box

Theme

Crop production, Horticulture, Temperate fruits

Keywords

Weed control, plant protection, yield stability

Context

Central Europe

Equipment

Tractor, different devices

Best in

Organic orchards

Practical recommendations

- A widespread strategy is the combination of a gyroscopic crumbler (Picture 1A) and a thread mower (Picture 1D):
 - In spring, turn under organic material into the soil with the gyroscopic crumbler.
 - Beginning in the summer, when tree growth calms down (from July), the thread mower can be used to avoid increased nitrogen mobilisation from soil disturbance, as only surface mowing occurs with the thread mower.
 - Towards winter, it is recommended to treat again with the gyroscopic crumbler. This method also helps to manage mice by providing them with little coverage.
 - The possible choices between these two types of equipment allow optimal weed management considering nutrient availability, soil conditions and the local weather situation.
- Another strategy can be the combination of a roll and finger hoe (Picture 1C) or a disc plow (Picture 1B) in Spring, with a thread mower in Summer:
 - The roller and finger hoe are used in spring and after harvest to break up the soil and incorporate weeds.
 - The thread mower is used in addition, in the summer months, to suppress weeds, grasses and root shoots (see above).



Different types of mechanical weeding devices: Picture A. LADURNER Gyroscopic Crumbler, Picture B. SPEDO disc plough, Picture C. Roll- and fingerhoe combination (Adelhelm & K.U.L.T. Kress), Picture D. LADURNER Thread mower. Photos: N. Oeser, 2018.

Further information

Videos

- [Gyroscopic crumbler](#), guide to weed control in apple growing. Weihenstephan University of applied sciences, Agroscope
- [Disc harrow – mounding](#), guide to weed control in apple growing. Weihenstephan University of applied sciences, Agroscope
- [Roll- and finger hoe](#), guide to weed control in apple growing. Weihenstephan University of applied sciences, Agroscope
- [Thread mower](#), guide to weed control in apple growing. Weihenstephan University of applied sciences, Agroscope

Weblinks

- [Sustainable strategies for weed control in fruit growing](#), Weihenstephan University of applied sciences (German)
- [Presentation of mechanical soil cultivation equipment for weed control in trees](#), Öko-Obstbau Magazine, N. Oeser (German)

About this practice abstract

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