

Mechanical weed control with brushes in tree nurseries

Problem

Weeds compete with young woody plants. Small planting distances of trees in nurseries increase the challenge for mechanical weed control without herbicides.

Solution

Hydraulically operated rotating plastic brushes can be used to gently remove weeds between the tree rows.

Benefits

The absence of herbicides protects the crops and the natural ecosystem and supports independence from external inputs.

Practical recommendations

- Very few series products of specific brush systems for woody plants are available. Individual custom-made products are still necessary. (Picture 1)
- Plastic brushes with flexible bristles ensure protection of the stems. Material, size and flexibility of the brushes can be selected individually. (Picture 2 & Video 1)
- The row spacing of the woody plants must be adapted to the available tractor-machine combination, e.g. 1.25m or 1.5m. The brushes can be used with all common planting distances as well as sizes of woody plants (even without bamboo stick for support/protection). (Picture 3)
- Single- or double-sided brush systems can be used in the front hydraulics on narrow-track tractors or with high-wheel tractors. (Picture 4 & Video 2)



- Effective brushing is aided by prior mounding of loose soil on the tree row. This way, weeds are covered, and newly emerging weeds can then be removed with the brush. The younger the weed the more effective the brush application. (Video 3 & 4)
- The number of passes required varies according to weed pressure, weather, soil conditions as well as material and setting of the brush.

Picture 1: Weed control with movable brush arm in front hydraulics. Photo: Bertels Baumschulen.

Applicability box

Theme

Horticulture, weed management

Keywords

Woody plants, mechanical weed control on the tree row

Context

Tree nurseries

Application time

All year, especially during vegetation phase

Period of impact

All year, especially during vegetation phase

Equipment

Machinery with brushes for mechanical weeding

Best in

All woody plant production systems with bare soil between plants

PRACTICE ABSTRACT



Picture 2: Movable brush arm in front hydraulics. Photo: Bertels Baumschulen.



Picture 3: Tree rows treated with brush and cultivator. Photo: Bertels Baumschulen.



Picture 4: Double brush on high wheel tractor. Photo: Bertels Baumschulen.

Further information

Video

- Video 1: Weed control with one-sided brush in rear hydraulics in young fruit trees
- Video 2: Weed control with double brush on high-wheel tractor in young woody plants
- Video 3: Cultivating and mounding with narrow-gauge tractor in young woody plants
- Video 4: Weed control with two-sided rotating plastic-plates in trees

Further reading

- Kuster T., Bravin E., Brunner J., Werth J., Kitemann D., Beck M., Buchleither S., Zoth M., Scheer C, 2020. Guide to weed control in fruit growing. <https://ira.agroscope.ch/de-CH/publication/45514> (available in German and French)

Weblinks

- Check the Organic Farm Knowledge platform for more practical recommendations.
- Homepage of organic nursery with brush application for weed control.
- Mechanical weed control in fruit growing – BIOFRUITNET Video

About this practice abstract

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