

Drosophila suzukii control: Preventive measures in organic stone fruit orchards

Problem

The spotted wing drosophila *Drosophila suzukii* is an invasive pest attacking soft fruit species (berries, cherries, plums, grapes), as well as many wild berry plants. *D. suzukii* female adults lay eggs into the fruits from which larvae develop.

Solution

The control strategy of *D. suzukii* includes preventive measures such as orchard management, field hygiene, and choice of cultivar, and intervention measures¹.

Benefits

The combination of preventive measures and intervention measures can reduce *D. suzukii* puncture and/or the development of larvae inside the fruits, and therefore minimise fruit and economical losses.

Applicability box

Theme

Crop production, Horticulture

Keywords

Temperate fruits, stone fruits, pest control, integrated pest management

Context

Stone fruit production areas

Period of impact

During colour change of fruits until end of harvest

Practical recommendation

- **Monitoring:** Once the fruits begin to change colour from yellow to red until the end of the harvest, monitor *D. suzukii* presence weekly using bait traps¹. Mount monitoring traps in shady, protected places and check weekly. Males can be identified by dark wing spots visible to the naked eye (Picture 1). In females, the large, curved ovipositor with well-developed, dark saw teeth can be seen with a magnifying glass.
- **Fruit inspection:** Inspect 50 externally intact random fruits with a magnifying glass. Check for puncture holes, and egg deposition with typical egg filaments that stand out from the fruit (Picture 2).
- **Orchard management (+++):** *D. suzukii* likes humid, shady, wind-protected locations. Dry and hot weather is unfavourable. Implement measures that lead to a dry orchard climate. Choose pruning systems that ensure a well-aerated, rapidly drying stand; mulch the undergrowth frequently or lay black mulch film; adjust irrigation intensity to avoid puddles.
- **Hygiene and harvest (++):** In case of high infestation pressure, harvest all cherries in one cycle (and dispose of the unripe fruits), as the second harvest cycle is usually heavily infested and often no longer marketable. Completely harvest early varieties, remove and destroy overripe and damaged fruit (put them in an airtight container) to avoid a *D. suzukii* proliferation. Immediately cool the harvested fruit to 0-3 °C to stop larval development. Keep the cold chain until delivery to consumers.
- **Choice of cultivar (+):** There are some cultivar differences for apricots and plums, while with cherries all varieties are attractive.

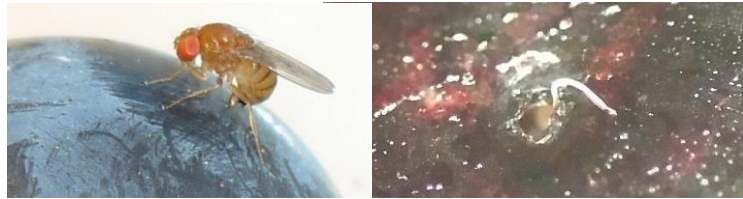
(+++) essential measure

(++) good efficacy

(+) only in combination with other measures



Picture 1: Female (2-3 mm long, left) and male (2 mm long, characteristic two spots on the wings, right) *D. suzukii*. Photo: C. Daniel (FiBL)



Picture 2: Oviposition of *D. suzukii* (left) and typical white filaments from an egg embedded in the fruit body (right). Foto: C. Daniel, F. Cahenzli (FiBL).

Further information

Weblinks

1. Cahenzli, F., Boutry, C. 2022. Practice abstract: *Drosophila suzukii* Control: Intervention in organic stone fruit orchards. FiBL. BIOFRUITNET.
2. Article on *Drosophila suzukii* (in German) on the farmer platform Bioaktuell.ch
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4. Info material on *Drosophila suzukii* by Agroscope
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6. Mazzi, D., Kehrl, P., Egger, B., Christ, B., Collatz, J., Daniel, C. 2021. F&E Task Force Kirschesigfliege - Schlussbericht. Agroscope. Februar, 2021, 41 S. (German and French)
7. Stäheli, N., Egger, B., Kehrl, P., Mazzi, D., Linder, C. 2020. Bekämpfungsstrategie gegen *Drosophila suzukii* in Steinobstkulturen. Ed. Agroscope, Wädenswil. Merkblatt 114, April, 2020, 2 S. (German, French and Italian)

About this practice abstract

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