

Drosophila suzukii control: Intervention in organic stone fruit orchards

Problem

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

Solution

The control strategy includes preventive measures², netting, indirect and direct control with plant protection products, and the release of parasitoids⁹.

Benefits

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

Applicability box

Theme

Crop production, Horticulture

Keywords

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

Context

Stone fruit production areas

Period of impact

During colour change of fruits until end of harvest

Practical recommendation

- **Netting (+++):** Use nets with meshes that do not deform and a max. mesh size of 1.0x1.0 mm. Close the nets immediately after flowering (Picture 1). Avoid contact of the net with fruits. This measure is not possible for high-stem cherry orchards.
- **Mass trapping (++):** Suitable for apricot and plums but does not work from the beginning of cherry ripening onwards, as cherries are more attractive than the bait trap. Use commercial or self-built traps out of plastic bottles with 5 mm holes on the top (best in red or black, Picture 2). Self-made bait mixture: 1/3 water, 1/3 apple cider vinegar, 1/3 red wine, 0.05% acetone (optional), and two drops of odourless liquid soap.
- **Spraying kaolin or slaked lime as a deterrent (+):** Kaolin (2 %) or slaked lime (0.18 %) application with 500-1000 l/ha water during warm weather conditions (>20 °C) and low relative humidity (~30 %). Spray weekly from colour change of fruits (from yellow to red) on. It causes spray stains and therefore is unsuitable for crops for fresh consumption.
- **Spraying Spinosad (+):** Spinosad (0.02 %) has a partial effect, not sufficient as a sole measure. This treatment causes measurable residues: Strictly adhere to waiting periods and application rates. It is toxic to beneficial insects and bees: do not apply on crops still in bloom and on damaged fruit with juice discharge. Check if Spinosad is approved or needs a special permit in your country.

(+++) essential measure

(++) good efficacy

(+) only in combination with other measures



Picture 1: Netting is the most effective control measure against *Drosophila suzukii*. Photo: Thomas Alföldi (FiBL).



Picture. 2: Self-made (left) and commercial (right) bait traps for monitoring. Photo: Claudia Daniel (FiBL).

Further information

Video

1. Video "[Drosophila Suzukii and native European parasitoids](#)" by Agroscope

Weblinks

2. Cahenzli, F., Boutry, C. 2022. [Practice abstract: *Drosophila suzukii* control: Preventive measures in organic stone fruit orchards](#). FiBL. BIOFRUITNET
3. [Article on *Drosophila suzukii*](#) (in German) on the farmer platform Bioaktuell.ch
4. Daniel, C., Schnieper, S. and Baroffio, C. (Ed.) 2013. [Kirschessigfliege *Drosophila suzukii*: Ein neuer Schädling im Weichobstanbau](#). Merkblatt. Proceedings on: Liebegger Tag der Spezialkulturen. Frick. Switzerland. 31.05.2013.
5. [Info material on *Drosophila suzukii*](#) by Agroscope
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8. 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.
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10. Rossi-Stacconi, M. V., Wang, X., Stout, A., Fellin, L., Daane, K. M., Biondi, A., Stahl, J. M., Buffington, M. L., Anfora, G., Hoelmer, K. A. 2022. [Methods for Rearing the Parasitoid *Ganaspis brasiliensis*, a Promising Biological Control Agent for the Invasive *Drosophila suzukii*](#). J. Vis. Exp. (184).

About this practice abstract

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