



Life cycle and control of the spotted wing drosophila (*Drosophila suzukii*)

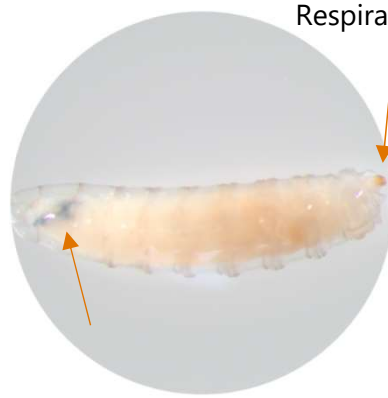
The spotted wing drosophila (SWD) belongs to drosophilid flies like the banana fly, which are often observed in overripe and damaged fruits and berries. Unlike other drosophilid flies, the SWD can lay eggs in intact berries and fruits, as well as in developing unripen berries.

The SWD is very polyphagous and it can utilize most of edible berries and fruits.

The SWD can reproduce rapidly under suitable conditions and cause great economic loss in berry and fruit crops. One suspected overwintering event of a female in Finland has already been observed. The introduction of larvae and eggs via imported berries has also been shown.



Male black wing spots



Larve black mouth hooks



Female ovipositor

The life cycle of a Spotted Wing Drosophila from egg to adult can last 10 days at its shortest

The life cycle of a SWD

- SWD fly reproduces best at 16-25°C.
- At temperatures below 10 °C, it is not known to reproduce.
- Cold winter as well as dry and warm summer decrease occurrence.
- Mild winters and proximity to water, as well as sheltered places, like forest edges, favor reproduction.
- The flight peak of SWD is in August-September in Finnish conditions.
- The female usually lays 100-300 eggs and may damage 7-16 berries per day.
- The larvae develop inside the berries, and they often drop down to pupate in the soil.
- There may be several generations during the growing season. Generation time at +22 degrees takes approx. 2 weeks
- Polyphagous, several berries and fruits undergo reproduction, including forest berries

The description of a SWD

- The adult SWD fly is a 2-3 mm in size, red-eyed fly, resembling a banana fly.
- The coloration of the body is yellowish brown and there are uniform, black transverse stripes on the abdomen.
- Males have black spots on the wingtips, but in females those are absent.
- In male foreleg the two sex combs are parallel to the leg while in other drosophilid species sex combs are transversely.
- Females have a strong, black-toothed and serrated ovipositor.
- The egg has two respiratory filament, which can also be visible on the surface of a berry.
- The larvae are 1-4 mm long, white, legless and have black mouth hooks and 2 pcs sharp respiratory filaments at the anal end.
- The egg-laying causes point-like holes in the surface of the berries and fruits.

More information

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Control of the SWD in the farm

- Use early, thick-skinned and firm varieties
- Increasing light and ventilation in the canopy by regulating planting density, mowing of row spacing, pruning and trellising the plants
- Reducing air humidity: avoid standing water, use drip irrigation and mulches
- Short harvest intervals, removing of cull berries
- Immediate post-harvest cooling of the berries
- Responsible disposal of berry surplus
- Removing unripe berries in autumn, pruning canopy



Responsible waste disposal

- Imported berry and fruit waste can serve as a source of infestation.
- Waste must not be dumped in the forest, composting or burial in the ground is not recommended without preheating or freezing!
- Freezing berry and fruit waste before disposal (-20 °C min 2 d) or heating fruit waste in clear plastic bag (+49 °C couple of days) kills the eggs and larvae
- Responsible further treatment of the employers' household bio-waste



SWD pathways and risks

- **Introduction pathway in imported berries and fruits**, among others, in raspberries, blueberries and cherries
- **Risks:** storage and handling of imported berries and fruits and composting the resulting waste on a berry or fruit farm
- **Workers luncheon boxes: do not bring imported berries to the fields!**
- Household composts and biowaste bins
- Roadside waste bins
- Biowaste containers of market stands grocery stores and wholesalers

Further information:

<https://gd.eppo.int/taxon/DROSSU/datasheet>

Pest identification service:

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