Drosophila suzukii – quo vadis?

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Since its first record in Germany in 2011 the Spotted Wing Drosophila (SWD), *Drosophila suzukii*, spread rapidly through the country. Currently it occurs almost all over Germany. Native to South East Asia, SWD was able to overcome its natural barriers by import/export of fruits. In 2008 first individuals occurred in the USA and Southern Europe. During the following years it spread through Europe and reached Southern Germany in 2011.

Since SWD is very polyphagous it infests a wide range of fruits. In addition, its high reproduction rate and short generation cycle of 10 to 14 days turns SWD into an extraordinary harmful pest for fruit production and viticulture. Contrary to our native Drosophilidae SWD, equipped with a serrated ovipositor, lays eggs into healthy, ripening and ripe fruits, usually with several eggs per fruit. The larvae hatch within 24 hours after oviposition. Their feeding activity in the pulp results in a rapid collapse of infested fruits. Without countermeasures, this leads to a complete crop loss.

In 2013, there was a large increase in population as indicated by our monitoring traps. At the same time, the number of locations where SWD was found increased, too. The highest trap captures were recorded from September 2013 onward. This correlates with the availability of fruits as food resource and for oviposition (e.g. blackberry and raspberry).

The application of mass trapping or bait sprays in berries showed no success in pest control. The increase in fly captures was particularly noticeable in forests and forest-edges in November, while captures in orchards decreased. This might reflect the migration behavior of adult SWD searching suitable overwintering sites. At these hotspots, we carried out further studies in order to identify preferred overwintering niches. The extraordinary mild winter 2013/2014 together with the increased number of surviving individuals resulted in a very early repopulation of cropland in spring 2014. Consequently, at the beginning of May we recorded infestation of early cherry varieties (Earlise and Burlat) for the first time in Germany. Delayed application of insecticides (Mospilan SG, SpinTor), resulted in massive crop losses.

By early July, the number of individuals grew rapidly and blackberries and raspberries were infested (up to 40 eggs per fruit). This extreme scenario led to a high infestation in late summer and autumn crops, as well as to a significant increase in individual numbers.

With the ambition of developing alternative control measures, we will continue to study biology and ecology of the pest, in particular by searching for attractants and repellents.