

Development and effectiveness of biorational pesticides against *Drosophila suzukii*

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Invasive pest species have become a worldwide problem; it is difficult to control them since globalization removes ecological barriers and spurs the arrival of non-native species to new niches. When these species can establish and thrive in their new environment, they are released from their native natural enemies and can



develop into major pests. To limit the economic or ecological damages that these invasive pests can cause, chemical pesticides are frequently applied to control the population growth of the pest species. However, these pesticides are harmful to the environment and invasive species, as any pest, can develop resistance to pesticides. Therefore, there is an urgent need the development more sustainable methods to control invasive pest species.

A new invasive pest that currently is causing worldwide problems is *Drosophila suzukii*, also known as the Spotted Wing Drosophila (SWD). To date, there is no adequate pest management strategy to control *D. suzukii*, and the species causes large economic losses in a range of fruit crops. We are currently investigating the possibilities to develop an effective and sustainable strategy to control the worldwide pest *D. suzukii*, based on *D. suzukii* behavior. The control of this pest species will require the integration of various approaches, possibly including the development of “biorational” pesticides that have few environmental side effects. In my project, I conduct experiments in laboratory, semi-field and field settings to investigate the feeding and searching behavior of *D. suzukii* and to develop biorational pesticides that can become part of an Integrated Pest Management strategy. The overall aim is to design an application approach of biorational pesticides that would be most effective.

Methods: Behavioural assays (laboratory & semi-field observations), development of biorational pesticides (comparison and optimization of different formulas on behaviour and lethality)

Starting date: mid-January 2019 or later