BIOLOGICAL CONTROL OF THE SPOTTED WING DROSOPHILA - DROSOPHILA SUZUKII

Locations  China, Switzerland

Dates  01-01-2014 - Ongoing

Summary  Drosophila suzukii Matsumura (Diptera: Drosophilidae), a fruit fly from East Asia, is now a serious economic pest of soft fruits and berries across Europe, the Americas and North Africa. In this project we are focusing on finding natural enemies (parasitoids) of the pest to introduce into Europe. This involves surveys for parasitoids where it originated and experiments in quarantine in Switzerland to investigate their taxonomy, performance and specificity.

Results so far  Surveys and subsequent research in quarantine in Europe showed that the most abundant and specific parasitoid is an undescribed figitid wasp in the genus Ganaspis. This species lays eggs in young fly larvae and adults emerge from the host pupae. It is plentiful in all regions we surveyed in Asia. However, our studies in quarantine identified some important host specificity variations between populations. Some populations seem totally specific to D. suzukii in fruits, refusing to attack D. suzukii larvae on artificial diets, whereas other populations develop successfully in D. suzukii and some other Drosophila species on the same diet. We are currently carrying out cross-mating experiments and molecular studies to sort out the taxonomic status of the species. The final goal will be to select the most specific and best adapted populations to release in Europe.

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