DEVELOPMENT OF EFFECTIVE, ECONOMICALLY VIABLE AND SUSTAINABLE STRATEGIES FOR MANAGEMENT OF *DROSOPHILA SUZUKII* – *DS2 PROJECT* –

PO-20

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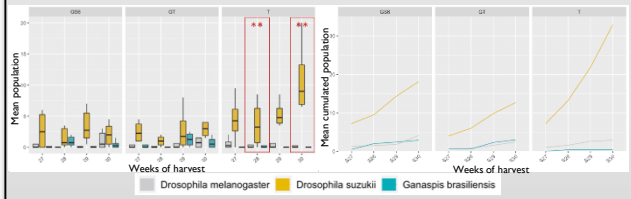
DS2 project (2018-2021) brings together academic and applied research, extension services, and agricultural education to develop and transmit to growers' new tools and strategies to control the spotted wing drosophila (SWD), *Drosophila suzukii*, in order to secure production and reduce the use of insecticides. Several solutions are being studied, focused on strawberry and cherry productions, at the level of the landscape and the plot. Recent results on three methods studied in the project are presented below:

Biological control with exotic parasitoid

Ganaspis cf. *brasiliensis* female

Targeted benefits:
- Install a new natural enemy in invaded areas
- Control *D. suzukii* in the environment to reduce pest pressure on crops

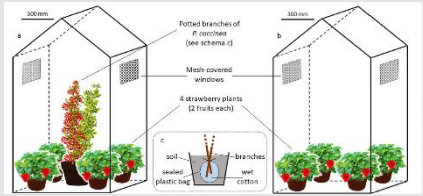
Comparison of two *G. brasiliensis* strains (GS6 and GT) to a control (T) without parasitoid release
Trial conducted under insect-proof net to avoid cross-contamination



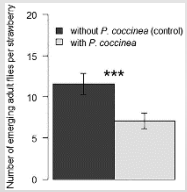
✓ *G. brasilienis* is able to find and parasitize *D. suzukii* larvae
✓ Reduction by 50% of SWD population in the presence of the parasitoid

Biological control with dead-end trap plant

Targeted benefits:
- Reduce the main crop damages by diversion
- Reduce the pest population



Greenhouse experimental design with a=plot with *P. coccinea*, b=control plot and c=schematic representation of the *P. coccinea* pots.



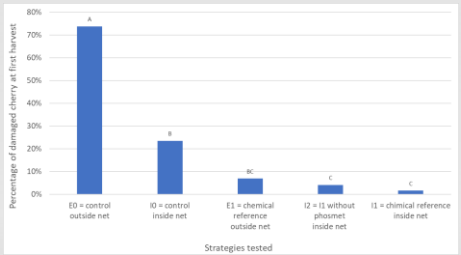
✓ Firethorn (*Pyracantha coccinea*) fruits are higly attractive to *D. suzukii*
✓ Infestation rate of strawberries was reduced by 40% with firethorn fruits
✓ *D. suzukii* larvae did not survive in firethorn fruits

From : Ulmer et al., 2020, The firethorn (*Pyracantha coccinea*), a promising dead-end trap plant for the biological control of the spotted-wing Drosophila (*Drosophila suzukii*), Biological Control

Physical barrier with peripheral net

Targeted benefits:
- Less expensive than insect-proof nets with roof
- Reduce the use of insecticides

Comparison of *D. suzukii*'s damages on cherry inside (I) and outside (E) the peripheral net with (1 or 2) and without chemical protection (0)



✓ Damages due to *D. suzukii* were significantly lower inside the net (24%) compare to outside the net (74%)
✓ Using peripheral net, reduced chemical protection (I2) has the same efficacy as reference insecticide strategy (I1) against *D. suzukii*

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Un projet labellisé terralia