



XI ENCONTRO BRASILEIRO DE ECOLOGIA QUÍMICA
XI BRAZILIAN MEETING ON CHEMICAL ECOLOGY

October 23-26, 2019

Maceió, Brazil

**SPOTTED-WING DROSOPHILA (*Drosophila suzukii*) ATTACK AND FRUIT
VOLATILE PROFILES: IN SEARCH FOR PARASITOID CHEMICAL CUES.**

*Gerardo de La Vega*¹; *Daniela Mato*²; *Andrés González*³.

Facultad de Química, Universidad de la República; ¹delavega.gerardo@gmail.com; ²danielamato@vera.com.uy; ³agonzal29@gmail.com.

KEYWORDS: PARASITOIDS; BERRIES VOLATILES; INTEGRATED PEST MANAGEMENT.

ABSTRACT: The spotted-wing Drosophila (SWD), *Drosophila suzukii*, has become a major pest of berries and cherries worldwide. Originally from Asia, the insect has invaded Europe, North America and more recently South America, including austral regions in the southern cone. Different from other drosophilids that attack rotten fruit, SWD flies can colonize fruits that are still in the maturation process, hence of commercial value. Within potential integrated pest management methods, biological control with established parasitoid populations appears as an alternative worth exploring. While searching for suitable hosts, parasitoids of insects that develop inside the fruit may use host-related chemical cues such as volatile organic compounds (VOCs) released from the attacked fruit. Here we report our preliminary findings of blueberry VOCs prior and after colonization by SWD. Working with commercial blueberries, we sampled volatiles three times in relation to oviposition by SWD females: one day before (T0), one day after (T1) and one week after (T2) the attack. VOCs were analyzed by GC-MS and were mainly composed in T0 and T1 by methyl and ethyl 3-methylbutanoate, and by (E)-caryophyllene, with smaller amounts of 2-hexanone and n-decane only in T1. In T2 the VOC profile changed dramatically both qualitative and quantitatively, and is dominated by isopentyl acetate, ethyl 3-methylbutanoate, phenyl ethyl acetate and phenyl ethyl acetate alcohol, among other compounds. The differences in VOCs from attacked and non-attacked blueberries are still under analysis. The results are discussed in relation to the potential finding of wild drosophilid parasitoids, here first reported for Uruguay, that may be able to detect chemical cues from SWD-infested fruits.