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Perception of aphid infested tomato plant volatiles by the predator *Episyrphus balteatus*

François Verheggen, Ludovic Araud, Quentin Capella, Frédéric Francis and Eric Haubruge, (Department of Functional and Evolutionary Entomology, Gembloux Agricultural University, Passage des Déportés 2, 5030 Gembloux, Belgium; verheggen.f@fsagx.ac.be)

In a tritrophic interaction including tomato plant (*Lycopersicon esculentum* Miller), the herbivore *Myzus persicae* (Sulzer), and the predator *Episyrphus balteatus* (De Geer), the perception of the tomato plants produced volatile organic compounds (VOC) by *E. balteatus* is investigated. In a first step, an odour sampling device has been set up, aiming at the headspace collection of the tomato plant VOC and their adsorption on Tenax adsorbent cartridges (Supelco®). The following desorption is held using a thermodesorption injector (Gerstel®) coupled with GC-MS. Intact and aphid infested plants are studied for their VOC emissions, as well as the comparison of the VOC emission of different tomato cultivars. These VOC consist mainly in mono- and sesquiterpenes (such as α -pinene, β -pinene, α -humulene, etc.) as well as in C_6 volatiles like hexenal in case of infestation by herbivores. Once the tomato plants' VOC are identified and quantified, they are tested for their perception by *E. balteatus* using electroantennography (EAG). Accordingly, an EAG device has been installed and configured for the study of VOC using Diptera antennae. The monoterpenes limonene and linalool showed high EAG activity, whereas other terpenes like cymene seem to be inactive.