



# XXV CONGRESSO NAZIONALE ITALIANO DI ENTOMOLOGIA

## Atti

*Sphex* *egyptia*  
*Linnaeus* *padova*  
**20-24 GIUGNO 2016**



### Single sensillum responses in *Trissolcus basalis* females to companion plant volatiles

T. Slimani<sup>1,2</sup>, K.C. Park<sup>2</sup>, M.C. Foti<sup>1</sup>, M. Rostás<sup>3</sup>, E. Peri<sup>1</sup>, S. Colazza<sup>1</sup>

<sup>1</sup>Dipartimento di Scienze Agrarie e Forestali, Università degli Studi di Palermo, 90128 Palermo, Italy.

<sup>2</sup>New Zealand Institute for Plant and Food Research PB4704, Christchurch 8140, Christchurch, New Zealand. <sup>3</sup>Bio-Protection Research Centre, PO Box 85084, Lincoln University, Lincoln 7647, New Zealand.

In food resources location and selection, parasitoid females spend considerable time examining the substrate with their antennae, where chemosensory, mechanosensory and thermo-hygroreceptive sensilla exist. Olfaction and perception of plant volatiles play a basic role in recognition of nutritional resources. For *Trissolcus basalis*, an egg parasitoid of the green stink bug *Nezara viridula*, previous electroantennography and behavioural experiments tested the parasitoid's response to extracted headspace volatiles and a synthetic blend of buckwheat volatiles indicated that *T. basalis* females have sensitive and selective olfactory responses to some major buckwheat, *Fagopyrum esculentum*, flower volatiles, such as 3-methylbutanoic and 2-methylbutanoic acids. This suggests that antennal olfactory sensilla play an important role in buckwheat volatile compound perception. Based on these findings we examined the sensitivity of antennal olfactory sensilla to seven individual compounds of buckwheat plant volatiles to determine the major active component using single sensillum recording technique (SSR). All seven buckwheat volatiles elicited responses from some ORNs but 3-Methylbutanoic acid and p-benzoquinone were the most active compounds which were showing consistent responses. These results represent a first step toward the identification of specialized ORNs for *T. basalis* which could help in enhancing its activity in the field as a biological control agent using 'attract and reward' strategies where synthetic companion plant volatiles are provided from dispensers to attract the egg parasitoid to the crop.