



XXIV International Congress of Entomology

'New Era in Entomology'

August 19-25, 2012 | Daegu, Korea

ICE 2012 DAEGU KOREA

PS2M181

Physiology

P2

Identification of sex pheromone components in *Trissolcus brochymenae* females

Gianandrea Salerno¹, Gianfranco Anfora², Alessia Iacovone³, Francesca Frati⁴, Eric Conti⁵

¹University of Perugia, Italy, ²Research and Innovation Centre, Fondazione Edmund Mach, Italy, ³University of Perugia, Italy, ⁴University of Perugia, Italy, ⁵University of Perugia, Italy

Long- and short-range sex pheromones appear to play a crucial role in the mate finding and courtship behavior of most parasitic Hymenoptera. Yet these parasitoids have been rarely investigated and only a few pheromones have been identified. Recent studies have shown that sexual communication in *Trissolcus brochymenae* (Hymenoptera: Platygasteridae), a quasi-gregarious egg parasitoid of the harlequin bug, *Murgantia histrionica* (Heteroptera: Pentatomidae), starts before contact between males and females and is mediated by chemical compounds produced by virgin females, which triggers the courtship behavior in males. In this study, the pheromone components involved in the short-range recognition of *T. brochymenae* females by males were investigated using electrophysiological and behavioral methods. Female body extracts were analyzed through EAG and GC-EAD and the active compounds were identified through GC-MS. Then the behavioural responses of virgin males to the GC-EAD active compounds were evaluated in closed arena bioassays. Two electrophysiologically and behaviorally active compounds were identified as sex pheromone components, tetradecyl acetate and (Z)-11-hexadecen-1-yl acetate. Both compounds triggered intense male antennation and mounting when applied on solvent washed female cadavers. Dose-response tests showed different curves for the two compounds. This is the first study on the identification of sexual pheromones in Platygasteridae. The difficulties of sex pheromone investigations on such minute egg parasitoids and the possible exploitation of these new findings in IPM are discussed.

Keywords: Platygasteridae, egg parasitoid, electrophysiology, tetradecyl acetate, (Z)-11-hexadecen-1-yl acetate, courtship behavior

All abstracts are subject to approval once submitted with the attendance certification issued by ICE2012