

3390: Exploitation of insect and plant semiochemicals as tools for real-time control and detection of pests in crops

Thursday, September 29, 2016

01:45 PM - 02:00 PM

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Introduction: One of the great challenges in Neotropical Agriculture is the development of new technologies to control pests that reduce the indiscriminate use of pesticides. Semiochemicals can be applied in the field to manage pests and natural enemies.

Methods: In this study, different semiochemicals were evaluated to manage natural enemies. Methyl salicylate (MeSa) and (*E,E*)- α -farnesene (EEFar) attracted and retained natural enemies in behaviour assays and *cis*-jasmone (*cis*J), when sprayed onto soybean plants, induced the soybeans' indirect defences. These 3 compounds were evaluated in field conditions aiming to enhance and retain the population of egg parasitoids in crop areas. The experiments were conducted in a small area of 1 hectare, which was divided into 2.5 x 3.0 m² parcels; each parcel had 25 soybean plants. *cis*-Jasmone was sprayed onto soybean plants and EEFar and MeSa were impregnated on rubber septa.

Results/Conclusion: The results show that areas treated with *cis*J attracted a higher number of Platygasteridae parasitoids than untreated parcels and EEFar, alone or combined with MeSa, also attracted a higher number of parasitoids than untreated parcels. These results suggest that the use of semiochemicals to manage natural enemies is feasible. It is necessary to develop new devices to take semiochemicals to the field in a manner that is safer for non-target species and the environment; sentinel plants, instrumentation, and/or nanotechnology could be developed to reach this goal.

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