

APPLICATION OF PHEROMONE-BASED CONTROL OF *TUTA ABSOLUTA* IN GREENHOUSE TOMATO IPM IN CAMPANIA, SOUTHERN ITALY

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Greenhouse tomato in Campania is cultivated mainly during the spring-autumn season when different pests, including the borer *Tuta absoluta*, the whiteflies *Trialeurodes vaporariorum* and *Bemisia tabaci*, and the thrips *Frankliniella occidentalis*, can injure the crops simultaneously. While *T. absoluta* and whiteflies can be controlled effectively by inoculations of biocontrol agents, the most effective of which is the predator *Nesidiocoris tenuis*, and natural populations of parasitoids and predators, the efficacy of *F. occidentalis* biological control on tomato remains elusive. Farmers use frequent insecticide sprayings to control thrips, so disrupting the biological control of other pests, with the consequence that additional insecticides must be applied to control borers and whiteflies. In a three-years field trial (2012–2014) we used the false trail following techniques (FT) to control *T. absoluta* in combination with a) insecticides applied specifically to control thrips or b) biocontrol agents. We found that: *T. absoluta* male ability to respond to calling females is inhibited by the pheromone dispensers distributed within the greenhouses; FT in combination with *Bacillus thuringiensis* and chemical control of thrips is effective in reducing the number of chemical insecticide applications by 40% compared with the farmer chemical control strategy and preventing yield losses due to *T. absoluta*; FT in combination with the predator *N. tenuis* and other biocontrol agents is effective in preventing yield losses due to *T. absoluta* as the farmer chemical control strategy; fruit injury by thrips (direct damage) and whiteflies (indirect damage) did not differ between the FT-based IPM and the farmer chemical control strategy. Our data suggest the use of FT as a mean to improve Integrated Pest Management and sustainability of greenhouse tomato production at least in Southern Italy.

