Abstract

Bactericera cockerelli is one of the most important pests in solanaceous crops in Mexico. Insecticides use is the most common control strategy against this pest, but recently the parasitoid Tamarixia triozae was proposed as part of IPM programs; thus, the objective of the present research was to explore compatibility of insecticides and parasitoids. We evaluated, under laboratory conditions (25 ± 2 ºC, 60 ± 5% R. H.), azadirachtin, spinosad, imidacloprid and abamectin toxicity on T. triozae y B. cockerelli. All insecticides showed toxicity for both species, but toxicity level depended on species, insecticide, stage-specific, doses and route of exposure. Abamectin and spinosad were the most toxic products (IOBC category 3), following by imidacloprid and azadirachtin (IOBC category 1). Psyllid nymphs were more tolerant than adults to insecticides; toxicity increased when psyllid nymphs and parasitoid pupae were submerged in insecticides. Imidacloprid at 1 L ha-1 avoided the parasitoid emergence. Residual toxicity against B. cockerelli was longer for spinosad (29 d post-application), and abamectin presented the same residual toxicity against T. triozae. Under laboratory conditions none of the insecticides used in this research showed compatibility with the parasitoid when they are used at the same time, because some were ineffective to control B. cockerelli in the way and time exposed in this study (azadirachtin and imidacloprid) or because high toxicity to T. triozae (abamectin and spinosad). In this paper the compatibility of these control strategies is discussed and we indicated the importance of conducting field evaluation of the same products.

Keywords

Psyllidae, pesticides, biological control, pest management.