The study aimed to found out the potential efficacy of some bio- and synthetic insecticides used against Tuta absoluta (Lepidoptera: Gelechiidae) in tomato greenhouses. Chlorantraniliprole+abamectin, metaflumizone, azadirachtin, emamectin benzoate, spinosad, Bacillus thuringiensis and B. thuringiensis+azadirachtin mixture were applied by spraying method on tomato leaf, which 5 third-stage larvae existed on. Distilled water was used as a control to compare with insecticides. Each of the applications was performed in six replications. The assessments were done at the 1, 3, 5 and 7 DAA (Days After Application) according to the number of live individuals and larval weight.

Mean numbers of live metaflumizone-, azadirachtin-, Bacillus thuringiensis- and B. thuringiensis+azadirachtin treated larvae at the 7 DAA were recorded as 0.33, 1.17, 0.67 and 0.33, respectively. Growth inhibition indexes of same larvae groups were 0.64, 0.17, 0.65 and 0.80, respectively. All individuals in chlorantraniliprole+abamectin-, emamectin benzoate- and spinosad-treated larvae were died at the 7 DAA. Growth inhibition indexes of these larvae groups were 0.97, 0.82 and 0.89, respectively. Pupations of metaflumizone-, azadirachtin-, Bacillus thuringiensis- and B. thuringiensis+azadirachtin-treated larvae were determined as 6.67, 20.0, 16.67 and 6.67 percent, respectively.

Azadirachtin-treated larvae showed the success of adult emergence in the rate of 6.67%. However, none of the larvae treated with other insecticides could show the success of adult emergence. Mean weight of the control larvae group gradually decreased and also, the rate of pupation and adult emergence in this group were 56.67 and 50.00 percent. In addition, it was determined that B. thuringiensis+azadirachtin mixture constituted a synergistic effect on the pest.