

THE EFFECT OF INSECTICIDE APPLICATIONS TO MELON CROP ON MELON APHID AND ITS NATURAL ENEMIES

(Abstract)



XA9952528

J. GUERRA, J.E. GONZALEZ, J. CEBALLOS, B. CHECA
Instituto de Investigacion Agropecuaria de Panama (IDIAP),
El Dorado, Panama

Melons are an important export crop for Panama and are cultivated on more than 1000 ha of land. Long growing season, extending well into January, allows several generations and build up of heavy populations of an important insect pest, *Aphis gossypii*, the melon aphid. Growers find it difficult to cultivate melons without several applications of insecticides. Although the insecticide applications control the aphids, they may also have adverse effects on the natural enemies of the aphid, in particular the two predatory insects *Cycloneda sanguinea* and *Chrysoperla carnea*. The purpose of this research was to evaluate the impact of insecticide applications on these insects and on the yield of melons, and to estimate residues of the applied insecticides in soil. The insecticides were applied as four different type of treatments to melon crop. The treatments were (i) three periodic applications of endosulfan (Thiodan 35EC), each at 0.52 kg a.i./ha, (ii) three applications of fenitrothion (Sumithion 50WP), each at 0.35 kg a.i./ha, (iii) two applications of fenitrothion and one of endosulfan, and (iv) grower's treatment, which included applications of six different insecticides. The effect of the insecticide applications was evaluated by estimating numbers of each of the three type of insects before and within 72 hours after the applications and estimating yield of melons. All insecticide treatments reduced the populations of *Aphis gossypii*, but they also reduced the numbers of the beneficial insects. Endosulfan was somewhat less toxic to *C. carnea* than the other insecticides were, since greater number of *C. carnea* were recorded from the plots treated with endosulfan than the other treated plots. The best yield of melons was recorded in the plots which were sprayed with fenitrothion, followed by the plots sprayed with endosulfan. and then those with grower's insecticides. Soon after the application of endosulfan the residue in the soil was 0.2 mg/kg, but it declined to less than 0.1 mg/kg in 10 days.

NEXT PAGE(S)
left BLANK