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M. Sc. Thesis Title

EVALUATION OF SUGAR-BASED FEEDING STIMULANTS' EFFECT ON IMIDACLOPRID (CONFIDOR® 70WG), COMMONLY USED TO CONTROL THRIPS IN CHILLIES (*Capsicum annum*)

Abstract

Thrips have become a major worldwide problem in agriculture particularly in horticulture, with their pest status seemingly increasing on a wide range of crops. Two field experiments were conducted in two seasons to evaluate the effect of different sugar based thrips feeding stimulants on the efficacy of imidacloprid (Confidor® 70WG; Neonicotinoid) in management of thrips in chillies. The first experiment was conducted to evaluate the effect of sugar (Attracker®) on the efficacy of Confidor® on thrips in chillies. Three rates of Attracker® which consisted of 1 ml/L water, 2 ml/L water (recommended), and 4 ml/L water were evaluated with Confidor® against two controls which were Confidor only and untreated control. The second experiment was carried out to compare the ability of three sugar based compounds; Attracker®, sugar and molasses to increase the efficacy of Confidor® against thrips in chillies. Three rates of each of the three sugar based products were evaluated with Confidor® against the control treatments of Confidor® only, untreated control and each of the three sugars applied alone at their standard rates. In both experiments, treatment applications began at the flowering stage when thrips population exceeded a standard action threshold level of 10 thrips per blue sticky trap card.

During the two planting periods, three species of thrips (*Scirtothrips dorsalis*, *Frankliniella occidentalis* and *Megalurothrips sjostedti*) were identified in the chilli crop established for these experiments. This study showed that inverted beet sugar in the sugar based feeding stimulant (Attracker®) significantly ($P < 0.001$) increased the efficacy of imidacloprid on thrips compared to spraying

	<p>imidacloprid only. Imidacloprid applied with Attracker[®], molasses and white sugar at different rates differed significantly ($P < 0.001$) on the mean number of adult and larval stages thrips captured on the blue sticky cards and those observed in flowers compared to the controls. Attracker[®] and molasses at their highest rates of 4 ml/L water achieved the highest control of thrips. White sugar had the least effect on the efficacy of Confidor against thrips among the three sugar based products. This study also showed that Attracker[®], molasses, and sugar have an effect on the efficacy of Imidacloprid against thrips albeit with varying magnitudes. Attracker[®] 4 ml/L water and molasses 4 ml/L water reduced the number of repeat sprays required to control thrips by 60% and 55% respectively and realized better returns on investment compared to Confidor[®] only.</p>
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