

C14-P

SYNTHETIC HOST VOLATILE AUGMENTATION OF TRAP CROPS FOR ALTERNATIVE MANAGEMENT OF COLORADO POTATO BEETLE, *LEPTINOTARSA DECEMLINEATA* (SAY)

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The attractiveness of synthetic host attractant-baited pitfall traps and trap crops to colonizing adult Colorado potato beetle, *Leptinotarsa decemlineata* (Say), and this application to a comprehensive potato trap crop pest management strategy were evaluated in a field setting. There were significantly more adult *L. decemlineata* in baited than un-baited pitfall traps and significantly more colonizing adults, egg masses, and small larvae in attractant-treated trap crops than in untreated trap crops. In a field evaluation of conventionally-managed plots compared with plots bordered by attractant-treated and untreated trap crops, significantly more egg masses, small larvae, large larvae, and adults were found in plots bordered by untreated trap crops than those bordered by attractant-treated trap crops or conventionally-managed plots. There were no significant differences in egg mass and small larvae densities between plots bordered by attractant-treated trap crops and conventionally-managed plots, but there were significantly fewer large larvae and adult beetles in conventionally managed plots than in plots bordered by untreated and attractant-treated trap crops. Insecticide application made based on established management thresholds required that the conventional plots be sprayed twice, while plots bordered by trap crops were sprayed once. Significantly less insecticide was applied to plots bordered by attractant-treated and untreated trap crops than conventionally-managed plots, while levels in plots bordered by untreated and attractant-treated trap crops were identical. Total insecticide input volume for plots bordered by trap crops was 44% less than conventionally-managed plots. Leaf area index (LAI) of conventionally-treated plots, plots bordered by attractant-treated trap crops, and plots bordered by untreated trap crops were all statistically different from one another. Mean yield (kg) in plots bordered by untreated trap crops was significantly lower than in plots bordered by attractant-treated trap crops and conventionally-managed plots. There was no significant difference between plots bordered by attractant-treated trap crops and conventionally-managed plots. Synthetic host attractant treatment of trap crops improved the efficacy of trap crop pest management in this system such that plots bordered by attractant-treated trap crop produced yields that were statistically-equivalent to conventionally-managed plots while requiring just under half the insecticide input.