

C13-P

PERIMETER TRAP CROP AS AN INTEGRATED PEST MANAGEMENT TACTIC IN OHIO PUMPKINS

*James Jasinski¹ and Celeste Welty²

¹ Integrated Pest Management Program, Ohio State University Extension, 303 Corporate Center Drive, Suite 208, Vandalia, OH 45377

² Department of Entomology, Ohio State University, Extension Entomology Bldg., 1991 Kenny Road, Columbus, OH 43210

Integrated Pest Management of pumpkins has been a focus for researchers over the past decade in Ohio. Some of the most recent studies have been aimed at using trap crops to reduce striped and spotted cucumber beetle feeding on seedlings, preventing disease transmission (bacterial wilt or squash mosaic virus) or protecting seedlings from being completely devoured. To investigate whether it is possible to alleviate early season cucumber beetle pressure by means other than broadcast insecticides, three separate but related research projects on trap crops were conducted. In 2000, the first experiment evaluated cucumber beetle feeding preferences for various squash (*Cucurbita maxima*) trap crops. Of the 10 different squash and pumpkin varieties tested, cucumber beetles preferred Turks Turban over other squash types during the seedling stage. In 2001, the second experiment tested the use of a perimeter trap crop of Turks Turban and the systemic insecticide, Imidacloprid (Admire), to control cucumber beetles, with the trap crop planted the same day as the pumpkins. Yield among the three treatments were significantly different, with the Admire treated plot with no trap crop posting higher yields than the plot treated with low rates of Admire surrounded by a trap crop treated with a high rate of Admire. The lowest yielding treatment was an untreated field surrounded by an Admire treated trap crop. In 2002, the third experiment also used perimeter trap crops of Turks Turban squash treated with Admire planted several weeks prior to the main pumpkin crop, but also added kairomone traps to further reduce cucumber beetle populations. There were no significant differences in yield between the trap crop and non-trap crop treated plots. The kairomone traps did not significantly reduce the amount of damage sustained by the pumpkin foliage or fruit in the treatment. To date, the use of perimeter trap crops in pumpkins instead of broadcast insecticides to effectively reduce cucumber beetle pressure or increase yields has not benefited growers who are willing to use insecticides, but could be a technique used by organic growers who have few pest management alternatives. The kairomone traps are worthy of further research in cucurbits.