

**EVALUATION OF CYAZYPYR™, A NOVEL CROSS-SPECTRUM ANTHRANILIC DIAMIDE
INSECTICIDE, FOR CONTROL OF THRIPS (*THYSANOPTERA: THRIPIDAE*) IN COTTON, AND
OBSERVATIONS ON THRIPS POPULATION DYNAMICS**

J.A. Samler

D. A. Herbert, Jr.

S. Malone

D. Owens

Virginia Tech TAREC

Suffolk, VA

T. Kuhar

C. Brewster

Virginia Tech, Dept. of Entomology

Blacksburg, VA

J.M. Alvarez

H. Portillo

E. I. du Pont de Nemours and Company

Newark, DE

Abstract

Thrips are a well-known early season pest of cotton causing documented yield loss if not controlled. New insecticides have been developed which may aid in controlling thrips in cotton, but research is needed to evaluate their efficacy. This study evaluated one novel insecticide, cyantraniliprole (Cyazypyr™, Dupont, Wilmington DE), in both field trials and laboratory bioassays (only field trial data will be presented). In 2010 and 2011, Cyazypyr was applied as either a liquid in-furrow treatment or as a broadcast foliar spray. Plant injury caused by thrips feeding was assessed weekly on a 0-5 scale with 0 = no damage and 5 = dead plants. Immature and adult thrips populations were monitored weekly by collecting five plants per plot in Mason jars containing soapy water. Thrips were counted under a stereoscope following suction filtration. Adult thrips from selected treatments were identified to species using a stereoscope. Yield was determined by harvesting 2 rows of each plot (70 row ft) using a commercial 2-row cotton picker. In both years, Cyazypyr treatments reduced the severity of thrips injury to plants and numbers of adults and immatures. In 2010, treatments also resulted in higher lint yields compared with untreated controls. Cyazypyr has good efficacy against thrips and appears to be a promising new tool for their control in cotton. In additional studies, the population dynamics of adult thrips was observed based on continual sampling of adult thrips in two fields using 3x5 inch yellow sticky cards which were replaced weekly from May 2010 to April 2011. These cards will attract and capture any species of adult thrips that is flying or being blow around by the wind. Preliminary data indicate a cyclic rise and fall of the overall adult thrips population with two distinct major peaks and numerous minor peaks. These data also indicate that a pseudo-biofix for tobacco thrips, *Frankliniella fusca* (Hinds), occurs in late October. A similar biofix date for tobacco thrips is currently used in a population dynamics model developed at North Carolina State University which predicts adult emergence peaks for the following spring. A subsample of 30 adult thrips was identified to species from each sticky card. These data show the proportion of different species and how these proportions shift overtime.