AGRONOMIC IMPACT OF IN-FURROW NEMATICIDES/INSECTICIDES TREATMENTS ACROSS THE COTTON BELT

Tom Barber
Division of Agriculture—University of Arkansas
Little Rock, AR
Charles H. Burmester
Belle Mina, AL
C. Dale Monks
Auburn University
Auburn University, AL
D.M. Dodds
Mississippi State University
Mississippi State, MS
S. M. Brown
Department of Crop and Soil Sciences
The University of Georgia
Tifton, GA
D. Wright
University of Florida
Quincy, FL
Bob Hutmacher
University of California
Shafter, CA
A. M. Stewart
LSU AgCenter, Dean Lee Research Station
Alexandria, LA
K. L. Edmisten
North Carolina State University
Raleigh, NC
J. C. Banks
Oklahoma Cooperative Extension
Altus, OK
Mike A. Jones
Clemson University
Florence, SC
Christopher Main
University of Tennessee
Jackson, TN
R. K Boman
Texas Cooperative Extension
Lubbock, TX
Robert G. Lemon
Texas Cooperative Extension
College Station, TX
J. Faircloth
Virginia Polytechnic Institute and State University
Suffolk, VA
Randall Norton
University of Arizona
Safford, AZ
S. Duncan
Kansas State University
Manhattan, KS

Abstract

This project was conducted by the Extension Cotton Specialists Working Group (ECSWG). The ECSWG was founded in 2007 by extension cotton specialists across the cotton growing regions of the USA. The cotton specialists hope to enhance the understanding of new products, varieties or technology by examining them over a wide range of environments and agronomic practices. Uniform trial protocol implementation and cooperation of counterparts across state lines will provide for powerful data to answer new questions on upcoming products and technology.

The objective of this study was to measure agronomic (vigor, yield, lint quality, etc.) and in pest injury levels when several seed and in-furrow treatments are utilized in the presence and absence of Orthene foliar application. This study was conducted in 10 states: Alabama, Arkansas, Florida, Georgia, Louisiana, North Carolina, South Carolina, Tennessee, Texas and Virginia. Plots were set up in a split plot design with seed and in-furrow treatments as the main plot and applications of Orthene vs. no Orthene as the sub plots. Main plot treatments included Aeris, Avicta, Cruiser/Dynasty and Temik at 5lb/A in-furrow. All main treatments were compared to an untreated check, where no seed treatment or in-furrow insecticide/nematicide was applied. Orthene applications were applied on one half of each plot at 1-2 leaf cotton with a follow up at 2-3 leaf cotton if needed. Data were subjected to analysis of variance and no interactions between seed/in-furrow treatments and Orthene applications were observed, therefore main effects of seed/in-furrow treatment and Orthene applications will be discussed.

There were no differences found among seed/in-furrow treatments for seedling vigor, thrips rating or cotton lint yield when data was analyzed over locations. However when analyzed by state, differences in vigor, thrips damage and lint yield were apparent. Significant increases in seedling vigor were observed in 6 out of 10 locations where all treatments displayed increased vigor over the untreated check. However in those 6 locations no significant seedling vigor was observed among seed or in-furrow treatments. Only 2 locations reported significant increases in seedling vigor for additional Orthene applications. One location in South Carolina displayed significant decreases in seedling vigor for the Aeris seed treatment.

In regards to thrips damage, 6 out of 10 locations displayed significant thrips damage when no seed treatment or in-furrow applications were used. However, these locations displayed no differences in thrips damage among seed or in-furrow treatment. Aeris treatments displayed significantly more thrips damage than Temik in 3 locations, with all other seed treatments equal to Temik. Aeris and Avicta were similar in reducing thrips damage in all but 2 locations, in Virginia, Avicta treatments showed increased thrips damage and in Arkansas Aeris treatments were more damaged than Avicta, with all other treatments being equal.

Yield differences from main effects of seed/in-furrow treatments or Orthene applications were not observed in 6 out of 10 locations. In the other 4 locations the seed/in-furrow treatments yielded significantly higher than the untreated check. Out of 14 total locations, there was only one instance when Orthene applications significantly increased yield. The one-year data indicates that in locations with a history of high thrips populations, utilizing a treatment on the seed or in-furrow is the most important factor. Seedling vigor and yield were not significantly affected across locations among seed or in-furrow treatments.