AN OVERVIEW OF TRANSFORM™ FIELD PERFORMANCE AGAINST COTTON APHIDS, APHIS GOSSYPII GLOVER, ACROSS COTTON AREAS OF THE UNITED STATES

Boris A. Castro
Jesse M. Richardson
Melissa W. Siebert
Larry Walton
Jacquelyn Lee
Jamey Thomas
Dow AgroSciences LLC
Indianapolis, IN
David Kerns
Texas AgriLife Extension
Lubbock, TX
B. Rogers Leonard
LSU AgCenter
Winnsboro, LA
Angus Catchot
Mississippi State University
Mississippi State, MS
Larry Godfrey
University of California, Davis

Abstract

Transform™ insecticide is a 50% WG formulation slated for commercialization in cotton in the United States. Its active ingredient, sulfoxaflor, was discovered by and is proprietary to Dow AgroSciences (DAS). Sulfoxaflor belongs to the novel sulfoximine class of insecticides. It is effective against a broad spectrum of piercing and sucking insects affecting cotton production including aphids, plant bugs and whiteflies. The objective of our studies was to assess the field efficacy of sulfoxaflor against cotton aphids, *Aphis gossypii* Glover, on important cotton growing areas of the United States. Field trials were conducted from 2006 to 2011 across southeastern (Mississippi and Louisiana), southwestern (Texas) and western (California) cotton regions. Six university trials and two DAS internal trials were conducted in a RCB design with four replicates. Plots received one or two foliar applications using a tractor rig or a backpack sprayer calibrated to deliver 10 or 25 gallons per acre of final spray. Cotton aphids were counted on 10 leaves or in 5 or 10 plant terminals per plot. Insects were collected using the wash method and counted in the laboratory. Data were transformed as needed prior to ANOVA. Means were separated using Tukey's HSD (P = 0.10). Sulfoxaflor exhibited a consistent fast acting and extended residual efficacy across years and geographies at rates between 0.022 and 0.045 lb/acre compared to commercial standards such as acetamiprid, flonicamid, imidacloprid, thiamethoxam, clothianidin, dicrotophos, and dimethoate. In one Texas trial, sulfoxaflor accomplished significant control of cotton aphid populations both in the upper 50% and lower 50% of the plant canopy with extended residual activity compared to acetamiprid. These multiyear and multitrial results suggest that sulfoxaflor will be a valuable tool to manage cotton aphid populations in cotton in the United States where registration is anticipated for 2012.

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