SULFOXAFLOR: FIELD PERFORMANCE AGAINST COTTON APHID, *APHIS GOSSYPII* GLOVER, IN COTTON

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Abstract

Sulfoxaflor is the first product slated for commercialization from the novel sulfoximine class of insecticides. Sulfoxaflor was discovered by and is proprietary to Dow AgroSciences (DAS) and is effective against a broad spectrum of sap-feeding insects affecting cotton including aphids, plant bugs and whiteflies. Once registered, sulfoxaflor will be commercialized as Transform™ insecticide (50% WG formulation) in U.S. cotton. The objective of our studies was to evaluate sulfoxaflor efficacy against cotton aphids, *Aphis gossypii* Glover, across cotton growing areas of the United States. Five university trials and two DAS trials were conducted from 2006 to 2010 in southeastern (Louisiana and Mississippi), southwestern (Texas) and western (California) cotton in a RCB design with four replicates. Plots received one or two applications using a tractor or a backpack sprayer at 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 at rates between 0.022 and 0.045 lb/acre reduced aphid population numbers significantly compared to acetamiprid (one trial), thiamethoxam (three trials), imidacloprid (one trial), flonicamid (three trials), clothianidin (two trials), dimethoate (one trial), dicrotophos (one trial) and the untreated check. It demonstrated fast acting and extended residual activity compared to these commercial standards. These results suggest that sulfoxaflor will be a valuable tool to manage cotton aphid populations. Registration on U.S. cotton is anticipated for 2012.