

**CONTROL OF COTTON APHIDS, *APHIS GOSSYPHII* GLOVER, WITH DOW AGROSCIENCES'
SULFOXAFLO INSECTICIDE IN COTTON**

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Abstract

Sulfoxaflor is the first insecticide from the new sulfoximine chemical class. It was discovered by Dow AgroSciences (DAS) scientists and is proprietary DAS chemistry. This novel insecticide is active against a wide range of sap-feeding insects affecting cotton including aphids, plant bugs (*Lygus* spp.) and whitefly species. Previous DAS and university research studies indicate that sulfoxaflor is effective at low rates and provides fast acting and extended residual control of target pests. Efficacy against cotton aphids (*Aphis gossypii* Glover) in cotton was evaluated from 2006 to 2009 in seven private and public research trials. These trials were conducted under environmental conditions of eastern and western United States (Mississippi and California, respectively). Trials consisted of small replicated plots with four repetitions. Plots received one or two sulfoxaflor treatments compared to one or two treatments of commercial standards and an untreated check. Applications were performed during active aphid infestations at pre-squaring in eastern cotton and at squaring and boll opening in western cotton. Aphid population densities were estimated by counting numbers of live aphids in ten terminals or ten leaves per plot. Counts were conducted in the laboratory using the wash method.

Results revealed that sulfoxaflor insecticide at rates of 0.022 lb/acre and above provided superior cotton aphid control compared to dicotophos at 0.5 lb/a; thiamethoxam at 0.045 lb/a; imidacloprid at 0.045 lb/a; acephate at 0.2 lb/a; acetamiprid at 0.05 lb/a and flonicamid at 0.06 lb/a. Control was significant at 3 d in all trials compared to the untreated check. Two trials with extended aphid infestations demonstrated sulfoxaflor residual control for ≥ 20 d compared to the untreated check. Sulfoxaflor has an excellent fit in IPM programs. It will be a valuable rotational partner with other chemistries and as a tool to manage insect populations resistant to other insecticides. Registration of sulfoxaflor for U.S. cotton is anticipated in 2012.