

**MANAGEMENT OF TARNISHED PLANT BUG, *LYGUS LINEOLARIS*, IN MID-SOUTHERN U.S.  
COTTON WITH DOW AGROSCIENCES' SULFOXAFLOR INSECTICIDE**

**M. Willrich Siebert  
L.C Walton  
R.B. Lassiter  
R.A. Haygood  
J.D. Siebert  
J.D. Thomas  
Dow AgroSciences LLC  
Indianapolis, IN**

**Abstract**

Sulfoxaflor is a new proprietary insecticide within a novel chemical class developed by Dow AgroSciences. It is active against a broad range of sap-feeding insects including aphids, *Aphis gossypii*, tarnished plant bugs, *Lygus lineolaris*, whiteflies, planthoppers, and scales. Sulfoxaflor was characterized for activity against tarnished plant bug, *Lygus lineolaris*, in the mid-south U.S. cotton during 2008-2010. A robust testing program included 48 trials in 11 locations, conducted by both public and private researchers. Sulfoxaflor insecticide was evaluated over a wide range of environmental conditions and tarnished plant bug infestation levels. Transform<sup>TM</sup> will be the brand name used for sulfoxaflor in U. S. cotton.

Results from three years of testing demonstrated sulfoxaflor insecticide (0.045 lb ai/acre) provided knockdown of tarnished plant bug infestations at  $\leq 5$  d and residual control for  $\geq 7$  d. Efficacy was equal to or better than acephate (1.0 lb ai/acre), thiamethoxam (0.047 lb ai/acre), dicotophos (0.5 lb ai/acre), and thiamethoxam+ $\lambda$ -cyhalothrin (Endigo, 4.5 oz/acre). In addition, cotton treated with sulfoxaflor protected lint yield equal to or superior than cotton treated with acephate (1.0 lb ai/acre) in 23 trials. As with most insecticides, the performance of sulfoxaflor in cotton will be dependent upon tarnished plant bug population level and intensity of infestation. Based upon the three years of research, multiple applications of sulfoxaflor may be required and the interval between applications may vary in cotton for tarnished plant bug management. Sulfoxaflor insecticide will have an excellent fit in cotton IPM programs based on the molecule's spectrum and properties, as a rotational partner with other chemistries, and as a tool for management of insect resistant populations. Recommended scouting techniques for tarnished plant bugs and IPM practices should continue to be utilized. A registration decision on sulfoxaflor for U.S cotton is anticipated in 2012.

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