# CONTROL OF *LYGUS HESPERUS* AND COTTON YIELD RESPONSE WITH BELAY INSECTICIDE (CLOTHIANIDIN) IN THE WESTERN UNITED STATES

**Patrick Clay**
**Mike Ansolabehere**
**Carlos Granadino**
**Valent U.S.A. Corporation**
**Walnut Creek, CA**

## Abstract

Belay is a neonicotinoid insecticide (IRAC Group 4A) with activity against aphid, plant bug, stinkbug, and whitefly (suppression). In 2008 and 2009, studies were conducted by Dr. Peter Ellsworth (University of Arizona), Dr Larry Godfrey (University of California – Davis) and Mr. Steven Wright (University of California Farm Advisor) to determine if Belay rates of 4.5 and/or 6.0 fluid oz product/acre (fl oz/A) would provide equal or greater control of *Lygus hesperus* compared with commercially available insecticides. Core comparison treatments in trials were Carbine (flonicamid) at 2.8 fl oz /A and/or Orthene 97 (acephate) at 1.0 lb product/A (lb/A). Plot size in all studies ranged from 12 to 16 rows wide by 40 to 75 feet in length. Ground application equipment was calibrated to deliver an application volume ranging from 16 to 20 gallon per acre. Experimental design was a randomized complete block with treatments being initiated based on locally established action thresholds. In 2008 (Maricopa, AZ and Shafter, CA), Belay and commercial standards required three applications at threshold to manage lygus populations. Belay provided control of lygus equal to Carbine. Seed cotton yield in Belay treated plots was numerically greater than Carbine at both locations. Belay and Carbine treatments resulted in seed cotton yields statistically greater than the untreated check. In 2009 (Maricopa, Arizona), both Belay and Carbine required three applications at threshold to manage lygus. In contrast, Orthene 97 required four applications. There did not appear to be an advantage from increasing the rate of Belay from 4.5 to 6.0 fl oz/A. Seed cotton yield was numerically greatest in Carbine treated plots but was statistically equal to Belay and Orthene 97. Belay (4.5 and 6.0) oz/A, Carbine, and Orthene 97 yields were statistically greater than the untreated check. Two trials were conducted in CA in 2009. At Shafter CA, Belay provided control of lygus similar to Carbine and Orthene 97. At the Tulare location, one application of Belay provided numerically greater control of lygus nymphs compared with Carbine.