## IMPACTS OF DIAMOND (NOVALURON) ON ADULT TARNISHED PLANT BUG

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## Abstract

Tarnished plant bug (TPB), *Lygus lineolaris* (Hemiptera: Miridae) is the most economically important pest of cotton in the Mid-South region. Tarnished plant bugs are polyphagous insects and widely distributed in North America. Resistance to organophosphates and pyrethroids have been documented and new classes of insecticides are needed to help provide control. Insect growth regulators (IGR) like Diamond (novaluron) provide excellent control. Previous field research has shown that Diamond has the greatest potential to protect cotton yield when applied during peak adult migration even though it is known to kill nymphs and not adults. Laboratory studies exposing adult TPB to Diamond through the diet has shown reduced egg hatch. The current research was conducted to determine if Diamond applied to adults in a field setting impacts fecundity and/or egg hatch rate. There was no difference in fecundity between adults exposed to Diamond and the untreated control. However, fewer eggs hatched in the Diamond treated plots than the untreated control, resulting in fewer nymphs per female per day in Diamond treated plots. This explains why Diamond applied during adult migration is effective: Diamond reduces nymph populations through reduced hatch rate, plus those nymphs that still hatch are immediately exposed to Diamond residues, further increasing the impact of Diamond on TPB populations.