A LOOK AT EARLY SEASON MANAGEMENT METHODS OF TARNISHED PLANT BUGS IN COTTON Michael Huoni Jeff Gore Whitney Crow Don Cook Mississippi State University, DREC Stoneville, MS Angus Catchot Mississippi State University Starkville, MS

Abstract

Tarnished plant bug, *Lygus lineolaris* (Palisot de Beauvois), is the most important insect pest of cotton, *Gossypium hirsutum*, in the mid-south region of the United States. Cotton is susceptible to damage from tarnished plant bugs from the formation of the first square to physiological maturity. The greatest yield losses from tarnished plant bug typically occur from late-squaring to early bloom. Tarnished plant bugs inject salivatory enzymes when feeding on squares and small bolls causing abscission from the plant. The first fruiting structures lower in the canopy and at the first fruiting position contribute to the majority percentage of cotton yield, so adequate protection is important to growers. Foliar applications of neonicotinoids, organophosphates, pyrethroids, sulfoximines or sometimes a mixture of two of these insecticide classes are generally used for control. Each of these insecticide classes have different modes of action, levels of efficacy, and prices in regard to tarnished plant bug management in pre-bloom cotton. ThryvOn is a genetically engineered trait in cotton that utilizes novel Bt genes and can provide season long suppression of tarnished plant bug, and ultimately reduce the number of foliar applications needed. With the addition of this technology, it may be possible to improve integrated pest management practices in cotton compared to previous practices. The current study will attempt to evaluate the efficacy of different insecticide classes from initial squaring to first white flower to preserve square retention and minimize yield losses. The study will be replicated in both ThryvOn and non-ThryvOn cotton varieties across multiple locations in the Mississippi Delta.