

SINGLES, MIXES OR SEQUENTIALS: FOLIAR APPLICATION STRATEGIES FOR PLANT BUGS IN TENNESSEE

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Abstract

The plant bug complex in Tennessee is comprised of tarnished plant bugs, *Lygus lineolaris* Palisot de Beauvois and clouded plant bugs, *Neurocolpus nubilus* Say (Hemiptera: Miridae). Plant bugs are the most important pests of Tennessee cotton. Growers in the state average just over four foliar applications to control these insects at a cost of over \$30 per acre. This makes up about half of the foliar insect control budget. Several replicated field studies were conducted with the objective of examining insecticide efficacy for plant bug control. Using maximum rates of a single insecticide or mixing full rates of two good insecticides showed that one application, regardless of the insecticide used, is seldom better than two. Pyrethroids only have a role as a tank mix partner with top tier plant bug products such as Orthene (acephate), Bidrin (dicotophos), or Transform (sulfoxaflor). During mid-season, pyrethroids mixed or premixed with imidacloprid, abamectin, or chlorpyrifos do not provide acceptable control of plant bugs. Additionally, pyrethroids alone are not recommended for plant bug control due to insect resistance. Orthene, Bidrin and Transform are consistent and exceptional choices to be tank mixed with a pyrethroid to provide broad spectrum control of mid-season insects. The optimum timing to use Diamond in Tennessee is when immature plant bugs are just beginning to be found. In the face of high plant bug pressure, repeated applications of top tier insecticides will be necessary to keep plant bug numbers in check. For sound IPM practices, only spray when pest numbers exceed the economic threshold, use top tier plant bug products at recommended rates, and incorporate multiple modes of action into your insect control strategy.

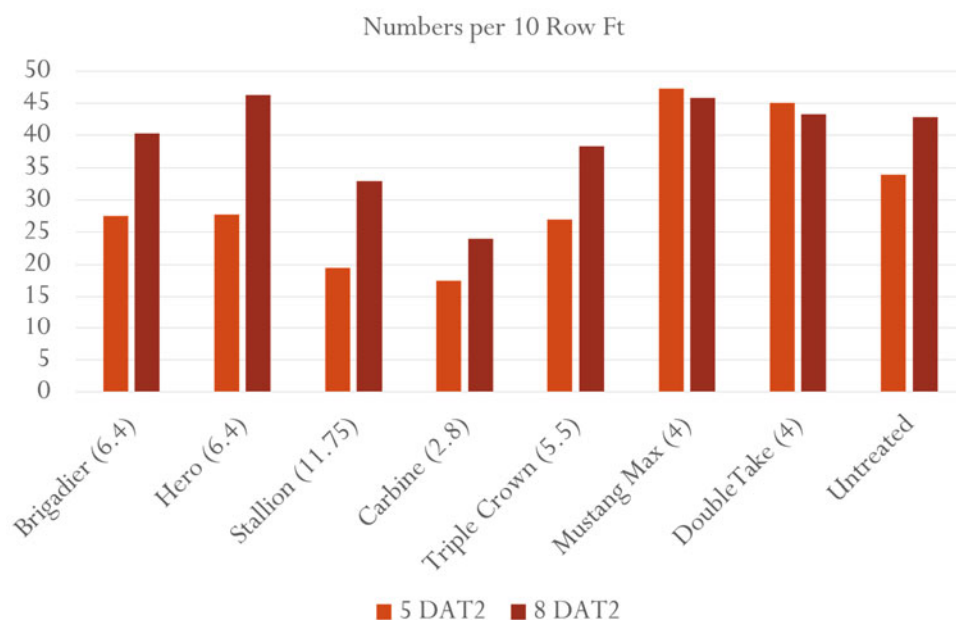


Figure 1. Mid-season plant bug control using pyrethroids mixed or premixed with imidacloprid, abamectin, or chlorpyrifos at 5 and 8 days after the second application, 2013.

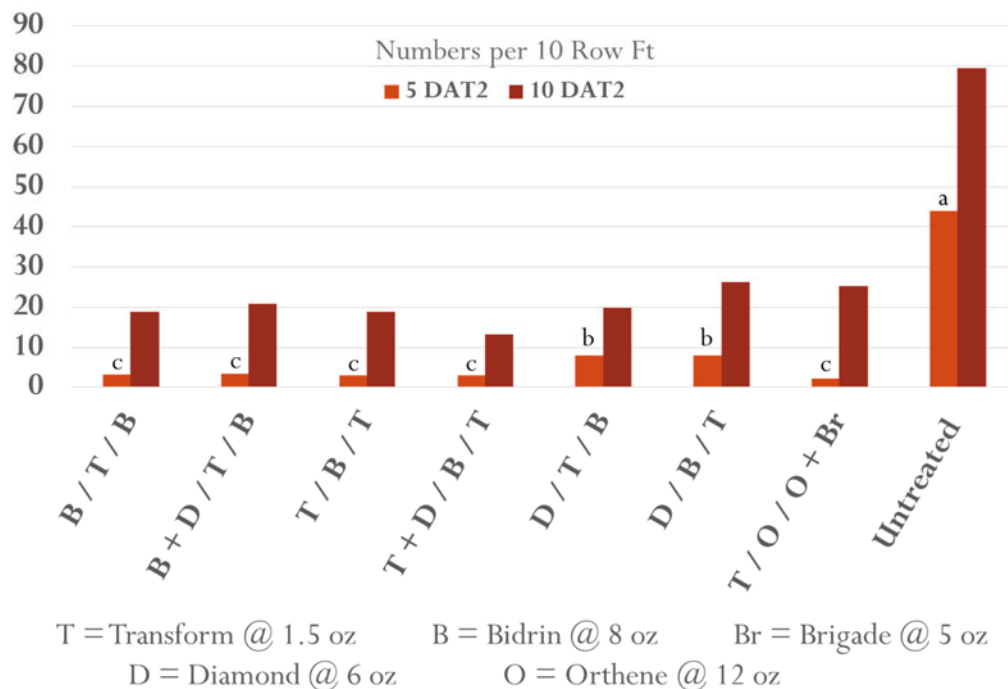


Figure 2. Efficacy of sequential applications of insecticides against plant bugs at 5 and 10 days after the second application, 2014. Slashes on x-axis indicate first, second and third applications.

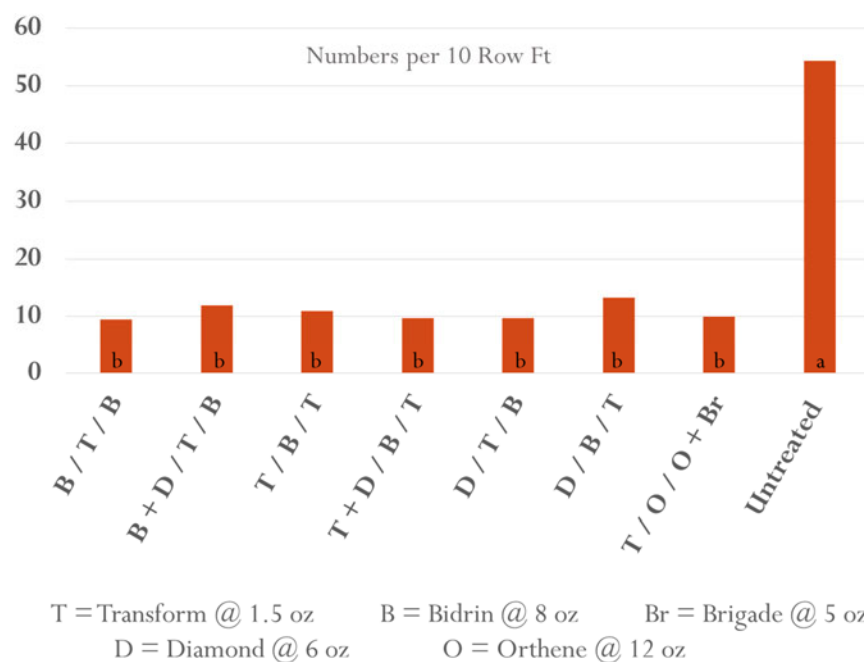


Figure 3. Efficacy of sequential applications of insecticides against plant bugs at 6 days after the third application, 2014. Slashes on x-axis indicate first, second and third applications. (Same trial as in Figure 2 above).

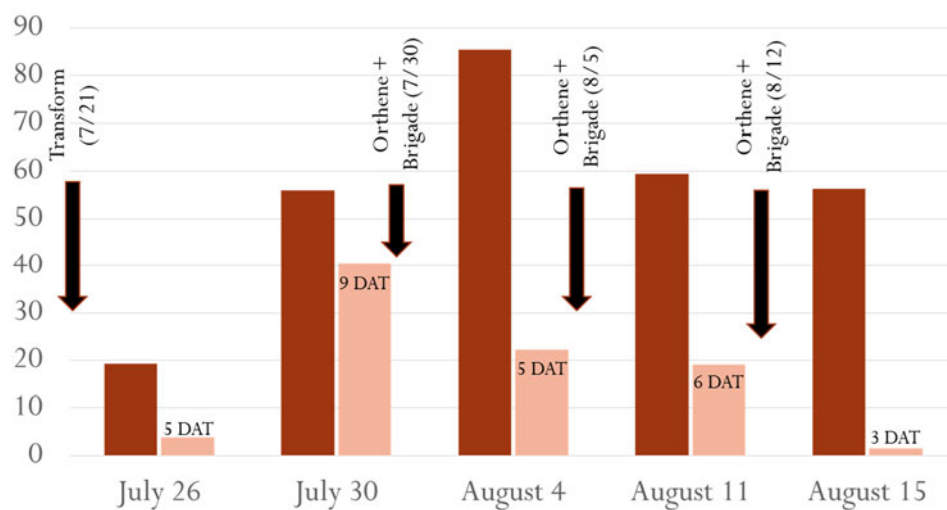


Figure 4. Numbers of plant bugs per 10-row feet in treated (light bars) and untreated plots (dark bars) when sequential applications were made during mid-season, 2014.