

Abstract

Neotropical Brown Stink Bug (*Euschistus heros*) in Soybeans: What Insecticides have Maintained Effective Field Performance? †

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Abstract: High-yield soybean (*Glycine max*) fields are needed to supply the world's demand on soybean products, but insects like *Euschistus heros* (Hemiptera: Pentatomidae) often reduce the soybean quality and productivity, particularly in neotropical fields of South America. There, chemical control of *E. heros* populations is needed almost every growing season, so that selection of insecticide resistance leading to control failure is a concern. We assessed the performance of conventional synthetic and new insecticide mixtures against *E. heros*. In the 2018/2019 growing season, a randomized-block experiment with five replications was conducted in Maracaju, Mato Grosso do Sul, Brazil. The crop management practices were as usual expect for stink bug control. The insecticides, applied twice (in R5.3 and R5.4 growth stages), were as follows: acephate, bifenthrin+carbosulfan, acetamiprid+bifenthrin, imidacloprid+lambda-cyhalothrin, sulfoxaflor+lambda-cyhalothrin. Before and after applying the treatments, the number of nymphs and adults were recorded in a 1-m soybean row using a beat cloth in four different representative areas of each experimental plot. Before the first insecticidal application, there no significant difference in the total number (nymphs+adults) of stink bugs, which averaged 2/m. All the insecticidal treatments were efficacious until 14 days after the second application, maintaining 0.3–1.4 stink bugs/m. In the control, the stink bugs number were 3–6/m, significantly higher than those in the insecticidal treatments. Therefore, the insecticides effectively reduced the population density of *E. heros* nymphs and adults. These results are useful for soybean pest managers, indicating that the soybean stink bug populations can be reduced when using the insecticides properly.

Keywords: *Glycine max*; neonicotinoid; pyrethroid; acephate; sulfoxaflor; pest management

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