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FIELD AND LABORATORY TESTS OF DIAMOND 0.83 EC, A NEW IGR, AND OTHER INSECTICIDES AND VARIETAL RESPONSE TO INSECTS IN THE MISSISSIPPI DELTA

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Abstract

Efficacy data were collected on a new IGR product, Diamond 0.83 EC, and other products for control of insects in cotton. Insecticides tested were Orthene 90 S, Karate Z 2.08 SC, Diamond 0.83 EC, and Bidrin 8L. Field tests showed effective control of tarnished plant bug nymphs (Lygus lineolaris Palisot de Beauvois) with application of Diamond (0.058 lb ai/A) and Orthene (0.5 lb ai/A). Laboratory tests utilizing green beans sprayed with Diamond 0.83 at different rates (0.058 lb ai/A and 0.09 lb ai/A) and allowed to dry for up to 15 days then exposed to plant bug nymphs showed high mortality. Standard glass vial bioassays with tarnished plant bug nymphs exposed to different doses of Diamond 0.83 showed that with increased dose mortality increased. These bioassays also provided data that mortality of plant bug nymph can occur without ingestion of Diamond 0.83 at different doses.

Additional field tests were conducted with three transgenic cotton varieties (SG 215, DP 555, and DP 451) and one conventional variety (PSC 355). Very high plant bug populations were present in this test. Each variety showed higher yields in treated plots than untreated as expected. However, SG 215 and DP 555 showed 15 percent increase in yields whereas DP 451 had almost 50 percent increase compared to the untreated plots. The conventional variety showed an increase of 29 percent over the untreated areas. These responses provide some data that show large differences between treated versus untreated varieties and these tests need to be repeated for further data analysis.