GLUFOSINATE AND INSECTICIDE CO-APPLICATION EFFECTS ON LIBERTY LINK COTTON

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Abstract

Field studies were conducted at the Northeast Research Station near St. Joseph, LA, the Dean Lee Research Station near Alexandria, LA, and the Macon Ridge Research Station near Winnsboro, LA to evaluate effects of insecticides on Liberty Link cotton tolerance when co-applied with Ignite in multiple applications. Study design was a randomized complete block with a factorial arrangement of Ignite/insecticide co-application (Ignite at 22 oz/A alone or co-applied with insecticides Acephate at 0.5 lb ai/A, Baythroid at 0.033 lb ai/A, Bidrin at 0.4 lb ai/A, Centric at 0.047 lb ai/A, Dimethoate at 0.25 lb ai/A, Diamond at 9 oz product/A, Carbine at 0.088 lb ai/A, Zephyr at 5 oz product/A, Oberon at 5 oz product/A, or Vydate at 0.4 lb ai/A) and application timing (2 to 3 leaf, 2 to 3 leaf followed by 6 to 8 leaf, or 2 to 3 leaf followed by 6 to 8 leaf followed by 1 week after flowering). Treatments were applied to each 6.67' x 30' plot with a CO_2 backpack or tractor mounted compressed air sprayer at 15GPA. Cotton variety FM 1735 LLB2 was planted in early May at each location. Blanket insecticide applications and Ignite hooded sprayer applications were made as needed to the entire test area to ensure lack of weed or insect interference with results. Maintenance applications were not made within 14 days of treatment applications. Parameter measurements included visual assessment of crop injury 7 and 14 d after treatment (DAT), plant height prior to harvest, seed cotton yield.

At 7 DAT for the 2 to 3 leaf application in Alexandria, injury in the form of leaf speckling with Ignite co-applied with insecticides Zephyr and Oberon was 8 and 4% respectively, and greater than all other co-applications. At 14 DAT, injury for these two co-applications was 14 and 4%, respectively, and greater than all other treatments. Injury for this early application was no greater than 2% at the St. Joseph and Winnsboro locations. At all locations, injury following the later application timings was no greater than 4%. Cotton height prior to harvest ranged from 108 to 118 cm, 108 to 177 cm, and 112 to 117 cm at the Alexandria, St. Joseph, and Winnsboro locations, respectively, and was equal for all Ignite-insecticide co-applications when averaged across application timings. At the Alexandria location, averaged across application timings, seed cotton yield was lower for the 2 to 3 leaf application (1656 lb/A) and 2 to 3 leaf followed by 6 to 8 leaf application (1669 lb/A) when compared to the 2 to 3 leaf followed by 6 to 8 leaf followed by 1 week after flowering application (1808 lb/A). Insecticide co-applications had no impact on lint yield. At the St. Joseph and Winnsboro locations, cotton lint yield was not impacted by insecticide co-application or application timing.