

ARKANSAS CORN and GRAIN SORGHUM REPORT Progress Report 2008

Title: Evaluating the Length of Residual Activity and Rain-fastness of Recommended Foliar Insecticides against Southwestern Corn Borers

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Crop: Field Corn

Plots of a non-Bt corn hybrid were planted under a lateral over-head irrigation system at the Northeast Research and Extension Center in Keiser, AR on May 29.

Insecticide	Rate/Acre	Insecticide	Rate/Acre
1. Untreated		11. Sevin 4F	3 qts
2. Intrepid 2F	4 oz	12. Cobalt	28 oz
3. Intrepid 2F	6 oz	13. Tracer 4SC	3 oz
4. Intrepid 2F	8 oz	14. Belt 4SC	3 oz
5. Mustang Max 0.8EC	3.2 oz	15. Lorsban 4E	2 pts
6. Asana XL 0.66EC	7 oz	16. Lannate LV	1.5 pts
7. Brigade 2EC	3.2 oz	17. Coragen 1.67 SC*	0.044 lb ai
8. Baythroid XL	2.8 oz	18. Coragen 1.67 SC*	0.066 lb ai
9. Karate Z 2.08CS	1.6 oz	19. Coragen 1.67 SC*	0.088 lb ai
10. Furadan 4F	1 qt	20. Hero	6.4 oz

* Coragen is not currently labeled for use on field corn.

Newly hatched southwestern corn borer larvae were placed on 10 plants in each plot at the following timings after application:

Residual timings: 1, 3, 7, 10, 14, 21, 28 days after application.

Summary:

All pyrethroids (Asana XL, Baythroid, Brigade, Hero, Karate, Mustang Max) caused above 75 percent mortality at 3 days after treatment. Mortality dropped significantly by 7 days with Mustang Max and Asana XL. Karate Z and Baythroid XL had 90 percent mortality up through 7 days, but dropped to 60 percent by 10 days. Brigade and Hero had the longest residual with over 80 percent mortality at 10 days. Mortality from all pyrethroids dropped below 40 percent by 21 days and was at 0 by 28 days. Mortality from the carbamate insecticides (Furadan, Sevin, Lannate) dropped below 20 percent by 7 days. Furadan had the longest residual of the carbamates lasting 3 days. Lorsban was the only organophosphate tested, having good residual up to 3 days. Cobalt is a mix of a pyrethroid, Proaxis, and Lorsban. The addition of the pyrethroid increased residual mortality to 7-10 days. Residual mortality for Intrepid appears to be dependent on rate with longer residual from higher rates. Mortality from the 4 oz rate began to decline after 3 days. The 6 oz rate began to decline after 10 days. The 8 oz rate did not decline until 14 days. Belt is a new insecticide from Bayer CropScience giving good residual mortality up to 7 days. Tracer had high mortality up to 3 days and then dropped sharply afterward. Coragen is not currently labeled for field corn. However, it gave near 100 percent mortality at the higher rates up to 14 days after treatment.

Overhead irrigation within 4 hours after application reduced the efficacy of all insecticides tested. The greatest reduction was with the carbamates, Lorsban and Tracer. When the pyrethroids, Intrepid, Belt and Coragen were on plants for 1 day they appear to be rain-fast with a slight reduction in mortality following overhead irrigation.