



Result Demonstration Report

Sugarcane Aphid Adjuvant-Insecticide Evaluation

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Summary

Grain sorghum, because of its drought tolerance and low potential for insect pressure, has historically been used (along with corn) to rotate with cotton. According to USDA Farm Service Agency data, in 2015, grain sorghum replaced cotton as the most planted crop in Fort Bend County with just over 37,000 acres, accounting for slightly less than fifty percent of annual field crop acreage. With this increase in acreage, it is important to evaluate best management practices to provide producers with up-to-date information to make important production decisions. One recent management issue for grain sorghum is the sugarcane aphid. Since first being detected in 2013, this pest has contributed to yield loss and harvest issues in Fort Bend County and throughout sorghum producing areas in Texas and the southern United States. Adjuvants are commonly used to increase coverage or absorption, or decrease drift when applying pesticides and were purported to have benefit when managing sugarcane aphid in grain sorghum.

Objective

The objective of this result demonstration plot was to evaluate the addition of surfactants to the commonly used insecticide, Transform WG, to see whether or not efficacy was improved.

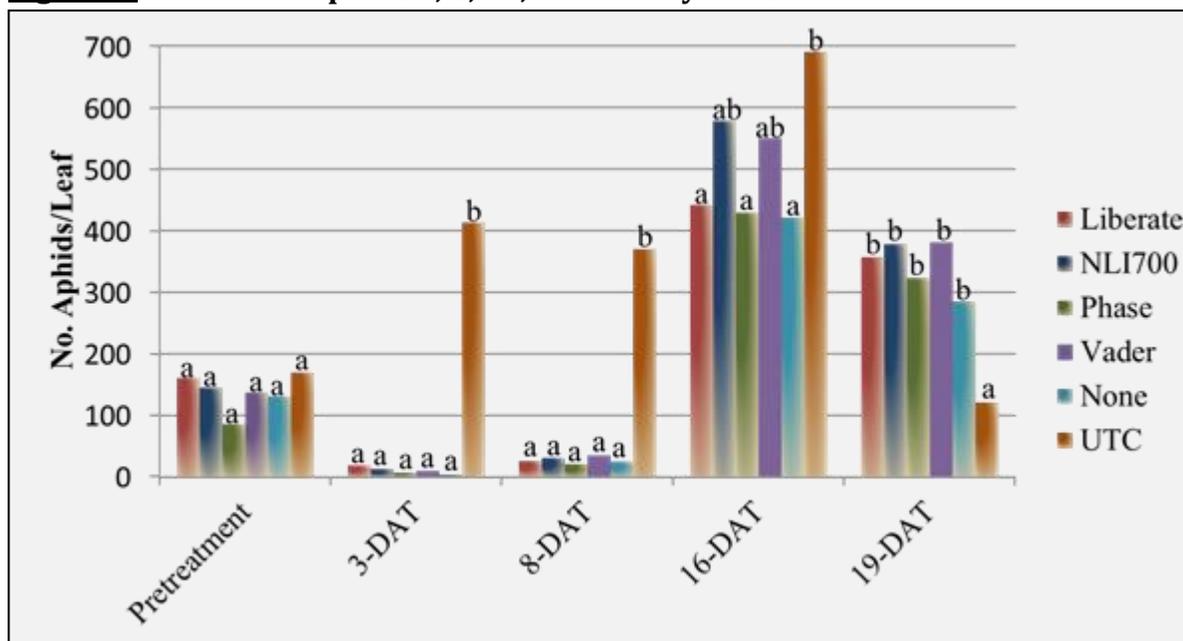
Materials and Methods

The performance of four adjuvants (Liberate, LI 700, Phase, and Vader) at concentrations of 0.5% v/v co-applied with Transform WG insecticide at 0.5 oz./acre were evaluated, along with Transform WG (0.5 oz./acre) alone, for efficacy against sugarcane aphid in a commercial grain sorghum field near Rosenberg. Plots measured 20 feet by 4 rows with 40" spacing arranged in a randomized complete block design with 3 replications. The trial was performed on re-growth of Dekalb DKS 53-67 that was initially harvested in July; the primary crop was never sprayed for sugarcane aphid. Plots were sprayed on September 6 with pre-treatment sugarcane aphid counts made three days prior to insecticide applications. Sorghum was pre-boot to boot stage. Insecticide applications were made with a hand-held CO₂ assisted boom sprayer with total spray volume of 13.5 gallons per acre. 20 random leaves (10 each from upper and lower canopy) were sampled from the inner two rows of each plot at 3, 8, 15, 19, and 23 days after treatment. Data were analyzed using analysis of variance and mean separation was performed using LSD.

Results

There were no differences in efficacy of the four adjuvants co-applied with Transform WG, compared to Transform WG alone (Figure 2). Compared to the non-treated check, aphids were well controlled by all treatments until 16 days after treatments when aphid populations rebounded, which is consistent with results from other studies.

Figure 1: Number of Aphids 3, 8, 15, and 19 Days After Treatment¹



¹From left to right, treatments are Liberate+Transform WG, LI700+Transform WG, Phase+Transform WG, Vader+Transform WG, Transform WG alone, and Non-Treated for pretreatment, 3, 8, 16, and 19, days after treatment.

Summary and Conclusions

Initial efficacy and residual activity of Transform WG is not improved by the addition of any of the spray adjuvants used in this study. Results from other studies conducted in 2016 found similar results. Increased coverage by use of higher total spray volume is believed to be more effective in ensuring control, compared to use of an adjuvant. As of the date of this publication, Transform WG is not labeled for use on sugarcane aphid in grain sorghum. Please consult product label for information regarding target pest and rates. The objective of this result demonstration was met and it will provide grain sorghum producers with insecticide efficacy data for products available for management of sugarcane aphid.

For Additional Information and Data for other Insecticide-Adjuvant Trials, Please Visit:

<http://ccag.tamu.edu/sorghum-insect-pests>

Acknowledgements

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