ENTOMOLOGY

INFLUENCE OF TEMPERATURE ON THE EFFICACY OF INSECTICIDES TARGETING SUGARCANE APHID IN GRAIN SORGHUM

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"LOWER TEMPERATURES CAN REDUCE THE EFFICACY OF BOTH SIVANTO AND TRANSFORM AGAINST SUGARCANE APHID IN GRAIN SORGHUM. GROWERS SHOULD CONSIDER WEATHER FORECASTS BEFORE MAKING AN APPLICATION."

Jeff Gore

The sugarcane aphid, *Melanaphis sacchari* (Zehntner), is a relatively new, and very damaging pest of grain sorghum in Mississippi. Currently, flupyradifurone (Sivanto, Bayer Crop Science) is the only insecticide labeled for this pest in grain sorghum. Additionally, Mississippi and many other states also received a Section 18 Emergency Exemption to use sulfoxaflor (Transform WG, Dow AgroSciences). Both of these insecticides provide acceptable control of sugarcane aphid under optimum conditions. However, poor control was experienced in several fields throughout Mississippi during the 2014 growing season. A cold front that resulted in lower than normal temperatures was believed to be the primary cause of those control issues.

Laboratory bioassays using sorghum leaves sprayed in the field were conducted during 2015 and 2016 to determine the impact of air temperature on the efficacy of both Sivanto and Transform against sugarcane aphid. Leaves were removed from treated plots at one, three, five, seven, and 10 days after treatment. Aphids infested on treated leaves were placed in growth chambers at two different temperatures, 60º F or 84º F.

Both insecticides provided good control of sugarcane aphid at 85º F. In general, both insecticides provided good initial control, but Sivanto provided better residual control of sugarcane aphid than Transform. Additionally, the efficacy of both insecticides was significantly reduced at 60º F compared to 85º F. Both Transform and Sivanto are valuable tools for sugarcane aphid management in grain sorghum. In situations where temperatures are lower than normal, these data suggest that growers should consider weather forecasts and delay applications if temperatures are expected in increase within a few days.