COTTON VARIETY RESPONSE TO PREEMERGE APPLICATION OF ANTHEM FLEX

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Abstract

Anthem Flex is a pre-mix combination of pyroxasulfone and carfentrazone. In previous research pyroxasulfone was found to injure cotton when applied preemerge. A trial was initiated to determine if cotton varieties respond differently to preemerge applications of Anthem Flex. This trial was conducted one year (2014)- in Starkville, MS at the R.R. Foil Plant Science Research Center on a Leeper silt loam soil and in Rohwer, AR at University of Arkansas Rohwer Research Station on a Herbert silt loam. Treatments at both locations consisted of three rates of Anthem Flex -0, 3, and 6oz/A. Ten varieties were planted on 38 inch rows at both locations. Ten varieties evaluated were Stoneville 4946 GLB2, Fiber Max 1944 GLB2, Stoneville 5289 GLT, Delta Pine 1321 B2RF, Delta Pine 1311 B2RF, Nex-Gen 1511 B2RF, Pyhtogen 499 WRF, Pyhtogen 339 WRF, Phytogen 427 WRF and Dyna-Grow 2570 B2RF. Both studies were arranged in a randomized complete block design and data was analyzed using Fisher's protected LSD at P \leq 0.05 for significance. Applications were made using a tractor mounted, compressed air broadcast sprayer with Greenleaf Air-Mix nozzles on 19 in spacing at 12 gallons per acre (GPA). The main type of injury observed at 28 days after treatment (DAT) was stunting. Results show there are significant differences in stunting among the varieties at both locations. All applications of Anthem Flex caused significant injury at Rohwer. Numerically injury was greater for the 6oz/a rate with Stoneville 4946 GLB2, Stoneville 5289 GLT, and Phytogen 339 WRF at Rohwer. Delta Pine 1311 B2RF appeared to be the most sensitive variety at Rohwer, with injury above 30% for both rates of Anthem Flex. Anthem Flex injury at Starkville was highest on Phytogen 339 WRF at 14%, 28 DAT with the 6oz/a rate. All varieties were significantly injured at the 6oz/a rate over the untreated check. The 3oz/a rate of Anthem Flex did not result in significant injury for Stoneville 4946 GLB2, Phytogen 449 WRF, and Phytogen 427 WRF at Starkville. Yields at Rohwer were highest for Stoneville 4946 GLB2 and Phytogen 499 WRF regardless of Anthem Flex rate. Injury from Anthem Flex did not negatively affect yield with the exception of Stoneville 5289 GLT, where yield was significantly reduced with the 6oz/a rate. There was no difference in yield with any rate of Anthem Flex at the Starkville location.Based on the amount and consistency of injury observed in these results, Anthem Flex should not be applied as PRE in Mid-South cotton production. However, Anthem Flex provides excellent control for glyphosate-resistant pigweed in cotton and should be considered as a post-directed option, once cotton reaches the appropriate size.