ROUNDUP READY COTTON PERFORMANCE

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Abstract

Roundup Ready Cotton technology is of interest to growers across the cotton belt. Experiments were established in North Texas and Southeast Arkansas to evaluate the performance of this new technology. Seed cotton yields were reduced with over-the-top applications at the 12-node cotton growth stage in Arkansas and with a 9 node over-the-top application in Texas when compared to the weed-free check. In Texas, control of common cocklebur, Palmer pigweed, and devil's claw were greater than 80% with single application timings of Roundup ranging from 4 to 10 node. Two applications of Roundup at the 4 and 8 node growth stage controlled ivyleaf morningglory control greater than 80%. Seed cotton yields were greater than 1500 lb/A with a single 6-node application and with 2 application applied at the 4 and 6 node growth stage.

Introduction

Two experiments were established one near Childress, TX on the Bruce Inman farm, and one at the Southeast Research and Extension Center near Rowher, AR. Treatments include a weed-free check, a Roundup (glyphosate) program (POST + 1 or 2 applications post directed [PDS]), a standard residual program, and Roundup applied over-the-top at the 4 node cotton (Gossypium hirsutum L.) growth stage followed by either a 6, 9, or 12 growth stage application over-the-top. The 6, 9, and 12 node applications were also applied at either 16, 24, or 32 fl oz/A. Trials in both Texas and Arkansas were kept weed-free season long to evaluate the effects of over-the-top applications of Roundup on cotton yield and performance. A third trial was established near Thalia, Texas on the Eldon Whitman farm. Roundup was applied once at 24 fl oz/A over-the-top at the 4, 6, 8, and 10 node cotton growth stage. A 4 node over-the-top application of Roundup was also followed by a 6, 8, or 10 node over-the-top application. Weed control, as well as, cotton yield and performance were evaluated at this location.

Discussion

Cotton injury (chlorosis) greater than 20% were observed with all 4 leaf applications at the Arkansas location. Late season injury was less than 10% with all treatments in Arkansas. Seed cotton yields were reduced with all rates of Roundup compared to the weed-free check when applications were made at the 12 node cotton growth stage. Applications at the 6 and 9 node applications did not reduce yields compared to the weed-free check in Arkansas. Cotton injury was less than 10% season long in Texas with the exception of the standard residual program. Seed cotton yields were only reduced with Roundup applied at 32 fl oz/A and at the 9 node growth stage in Texas. Common cocklebur (Xanthium strumarium L.), Palmer pigweed (Amaranthus palmeri S. Wats.), and devil's claw [Proboscidea louisianica (Mill.) Thellung] control was greater than 80% with all single applications of Roundup. Only 2 applications of Roundup one at the 4 and a second at the 8 node cotton growth stage controlled ivyleaf morningglory (Ipomoea hederacea L.) greater than 80%. Seed cotton yields were increased over the untreated check with single applications of Roundup at the 4 and 6 node growth stage and with 2 applications one at the 4 node and the second at either the 6 or 8 node growth stage.

Summary

Roundup can be a useful weed control tool for cotton producers. Mid to late season applications of Roundup over-the-top of cotton may reduce cotton yields. Often times these late applications may not be as effective controlling target weeds, as well.

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