

**ROUNDUP READY® COTTON FRUITING
PATTERN RESPONSE TO OVER THE TOP
APPLICATIONS OF ROUNDUP
ULTRA™ AFTER THE 4 LEAF STAGE**

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Abstract

Cotton fruiting patterns were evaluated after non-labeled applications of Roundup Ultra (glyphosate) were applied over the top of Roundup Ready cotton at the 10 and 14 node stage of growth. The nodes surrounding the non-labeled application node had lower fruit retention than either the labeled application or the standard residual treatment. Cotton fruiting was generally shifted up the plant when non-labeled applications were applied. When non-labeled application are applied, yield becomes highly dependent upon the cotton plants ability to compensate for lost fruit. In unfavorable conditions, these non-labeled applications may lead to significant yield loss.

Introduction

The development of Roundup Ready cotton has been a major advancement in weed control in cotton. Roundup Ultra provides broad spectrum control of a wide variety of grass and broadleaf weeds. The current gene construct exhibits excellent vegetative tolerance to applications of Roundup Ultra, however over-the-top applications after the 4th true leaf stage can result in yield reductions. Therefore, the label restricts over the top applications of Roundup Ultra to applications prior to the 5th true leaf stage or after 20% of the bolls have cracked. A study was conducted to determine the effect of non-labeled applications of Roundup Ultra on the fruiting pattern of Roundup Ready cotton.

Materials and Methods

PM1220RR cotton was planted on May 9 in Proctor, AR. The study consisted of 4 treatments replicated 4 times. The treatments included Roundup Ultra at 1 qt/A applied over the top of 3 node cotton, a sequential application to 3 node cotton followed by a 10 node application and a sequential

application to 3 node followed by a 14 node application. A comparison treatment with a standard residual program and no Roundup Ultra was included. All plots were maintained weed free throughout the season. Prior to each Roundup Ultra application each plot was plant mapped to determine the exact stage of cotton development. At the end of season each plot was box mapped and yields were recorded.

Discussion

Roundup Ultra applied over the top of 3 node cotton had no adverse effect on any parameter measured. This treatment had higher yields and average weight per boll than the standard residual treatment. The fruiting pattern was similar to the standard residual treatment. When a non-labeled applications of Roundup Ultra were applied over the top of 10 or 14 node cotton, fruit retention surrounding the application node was reduced. The plants attempted to compensate for lost positions in other areas of the plant. In this study, yield was not adversely affected due to compensation on later developing fruiting positions, however other studies indicate that under conditions that do not favor compensation, yield reductions will occur. These non-labeled applications can lead to a reduction in fruit retention surrounding the application node and yield becomes highly dependent upon the plants ability to compensate for lost fruit.