WEED CONTROL PROGRAMS IN ROUNDUP READY COTTON

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Abstract

The majority of our Roundup Ready research was reviewed to address the efficacy of programs with preemergence herbicides, postemergence tank mixes and Roundup rates and timings.

In the first group of studies, a standard set of preemergence treatments were evaluated in programs with two postemergence Roundup applications. These were 1) a dinitroanaline herbicide such as Prowl or Treflan, 2) Cotoran, 3) dinitroanaline plus Cotoran, 4) dinitroanaline plus Cotoran plus Command and 5) no preemergence herbicide. Rates were 0.75 lb ai/A for Treflan, 1 lb ai/A for Prowl, 1 to 1.5 lb ai/A for Cotoran and 0.5 lb ai/A for Command. A second set of studies investigated reduced herbicide inputs and compared factorial combinations of four preemergence treatments [1) Treflan alone at 0.75 lb ai/A, 2) Treflan plus Cotoran at 0.5 lb ai/A, 3) Treflan plus Cotoran at 1.5 lb ai/A, 4) Treflan plus Cotoran at 1.5 lb ai/A plus Command at 0.5 lb ai/A] and four early postemergence (3" cotton) treatments [1) Cotoran at 1 lb ai/A plus MSMA at 2 lb ai/A directed, 2) Roundup at 0.75 lb ai/A, 3) Roundup at 0.375 lb ai/A and 4) Roundup at 0.188 lb ai/A. All treatments in the second study received Bladex at 1 lb ai/A plus MSMA at 2 lb ai/A directed when cotton was 6 to 9".

In both sets of studies, weed control and cotton yields generally increased as dinitroanaline herbicides, Cotoran and Command were added incrementally to Roundup programs. In the reduced-input study, yields also generally increased with Roundup rate.

A third set of studies evaluated two POST Roundup applications under the following programs: 1) Roundup alone, 2) Prowl at 1 lb ai/A plus Cotoran at 1.2 lb ai/A, PRE 3) a layby application of 0.4 lb ai/A of Bladex plus 1.5 lb ai/A of MSMA and 4) a standard herbicide program. In these studies there was no benefit from "moving" residual herbicides from PRE timings to layby timings.

Tank mixtures of Staple and Milopro with Roundup were evaluated in a fourth set of studies; however, there was little consistency in rates in these studies. In some, but not all cases there were weed control benefits from these tank mixtures. However, a limiting factor with Staple mixtures is that Roundup costs much less and higher Roundup rates can often compensate for harder-to-control weed species.

A fifth study investigated timings and rates in Roundup-only weed control programs. Treatments were a 5 by 2 factorial combination of 0.375 versus 0.75 lb ai/A (pint versus quart rates) of Roundup and five application schemes. Application schemes were 1) 3 and 6" cotton, 2) 1 and 6" cotton, 3) 1, 3 and 6" cotton, 4) 3, 6, and 12" cotton and 5) 1, 3, 6, and 12" cotton. 1 and 3" timings were applied over-the-top and 6 and 12" timings were applied in directed sprays. A quart of Roundup provided better weed control and yield than a pint of Roundup. There were no statistical differences between application schemes.

Roundup Ready weed control programs generally benefitted from the use of preemergence herbicides. Postemergence tank mixes provided limited benefits and no benefits were observed from residual layby treatments. Weed control was better when 0.75 lb ai/A of Roundup was used versus 0.375 lb ai/A however, the exact time and number of applications had little effect.

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