2003 BELTWIDE COTTON CONFERENCES, NASHVILLE, TN – JANUARY 6-10

WEED MANAGEMENT IN ROUNDUP READY FLEX COTTON

Kent A. Croon*, R. Ihrig, C.B. Coots, D. Pitts, D. Haines, L. Hawf, C. Corkern, A. Mills, R. Montgomery, L. Ganann, D. Jost, and S. Murdock
Monsanto Company
St. Louis, MO

Abstract

In 2002, 'enhanced' Roundup Ready® cotton was tradenamed Roundup Ready® Flex cotton by Monsanto Company. Roundup Ready Flex cotton technology has been tested to date in various tolerance, agronomic, regulatory and weed management systems trials by a variety of academists, crop consultants and Monsanto personnel.

Based upon research conducted to date, an expanded window of application (over-the-top) is expected with the use of Roundup® on Roundup Ready Flex cotton. This expansion is due to an increased margin of cotton crop safety during sensitive reproductive stages. This improvement in technology is expected to provide the grower with added convenience in terms of cotton weed management.

In 2002, weed management studies were initiated with Roundup Ready Flex cotton at sites across the Cotton Belt. Trials were established on both conventional and reduced tillage systems looking at a number of difficult-to-control species including morningglories (*Ipomoea* sp.), pigweeds (*Amaranthus* sp.), sicklepod (*Senna obtusifolia*) , hemp sesbania (*Sesbania exaltata*) and others. Both randomized complete block (RCB) and split plot designs were utilized in these technical trials and crop injury and weed control data were collected.

A number of parameters impacting weed efficacy were examined in these trials and including Roundup rates, application timing and method of application (over-the-top versus post-directed applications). In addition, limited testing was initiated which examined combinations of Roundup with other herbicide products.

Little or no visible vegetative or reproductive injury was observed in the trials from over-the-top or post-directed applications of Roundup agricultural herbicide to Roundup Ready Flex cotton. In terms application timing, a timely first application to small weeds (2-3") was critical as delaying initial applications of Roundup resulted in significant cotton growth reduction. This was due to the effects of weed competition on the developing cotton crop and reinforces with growers the need for continued early initial applications of Roundup herbicide in this weed management system.

Increasing the rate of Roundup appeared to be less important than timely application. Some advantage with increased rate may be expected on difficult-to-control annual and perennial weed species. In these trials, over-the-top and post directed applications of Roundup performed equally and were dependant upon the cotton crop canopy and weed coverage.

Finally, in limited testing Roundup was combined with a number of other herbicide products. The addition of other herbicide products with Roundup increased the potential for crop injury while adding varying levels of increased efficacy dependant upon application timing. An additional application of Roundup herbicide provided an equivalent or greater level of weed control in the same trials.

Roundup Ready Flex cotton testing is expected to continue in 2003 with expanded testing in regulated trials across the Cotton Belt.