SOIL-APPLIED FOMESAFEN (REFLEX) AS A COMPONENT IN A ROUNDUP READY (GLYPHOSATE- TOLERANT) COTTON WEED MANAGEMENT SYSTEM

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Abstract

Field studies were conducted in 1998 and 1999 at the Wiregrass Substation in Headland, Alabama and at the Zeneca Research Site in Slocomb, Alabama to evaluate preemergence (PRE) herbicide treatments alone and followed by glyphosate applied postemergence to genetically modified cotton (*Gossypium hirsutum* L.). The objectives were to determine if PRE applications of fomesafen and/or fomesafen combinations were needed in Roundup Ready cotton and to determine if soil-applied residual herbicides could reduce the number of glyphosate applications in Roundup Ready cotton weed management systems. Fomesafen, 0.28 and 0.42 kg a.i./ha; fluometuron, 1.39 kg a.i./ha; and pyrithiobac, 0.052 kg a.i./ha were used alone or in combination as PRE treatments. Glyphosate, 0.56 kg a.i./ha, was used for the postemergence over-the-top (POT) and postemergence directed (PDS) applications. The POT application occurred at the 4-leaf stage of cotton. The PDS treatment was applied at the 8 to 10-leaf stage. Weed control and crop injury were evaluated by visual control ratings using a scale of 0 to 100% (0 = no control, 100 = total control). Also, seed cotton yields were taken to evaluate the crop response. Sicklepod (*Senna obtusifolia* (L.) Irwin & Barneby) and common cocklebur (*Xanthium strumarium* L.) were evaluated in these trials.

Fomesafen and its combinations did not provide adequate (>70%) control of sicklepod when used as a PRE application. Glyphosate was necessary for season-long control of sicklepod. In 1998, only a POT application of glyphosate was needed for sicklepod control because of a lack of rainfall in the growing season which limited weed growth. In 1999, a POT followed by a PDS application was needed to control sicklepod due to abundant rainfall throughout the season. PRE treatments provided good to excellent (80 to 100 %) early-season control of common cocklebur, but glyphosate was needed to provide season-long control. As with sicklepod in 1998 and 1999, rainfall determined the number of glyphosate applications to control common cocklebur.

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