STAPLE AND MSMA SYSTEMS FOR WEED CONTROL IN COTTON

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Abstract

Research was conducted at three locations in North Carolina to evaluate Staple, MSMA (Bueno 6), and Staple plus MSMA tank mixtures for weed control and cotton yields in conventional- and no-till production systems. For conventional systems Treflan was applied PPI at 0.75 lb ai/ac to all plots while Dual at 1.0 lb ai/ac was applied PRE to all plots in no-till systems for annual grass weed control. Management systems included a factorial arrangement of PRE, early postemergence, and LAYBY options for a total of 26 management systems. PRE options were 1) none or 2) Cotoran at 1.5 lb ai/ac. Early postemergence options were 1) nothing, 2) Cotoran at 1.0 lb ai/ac plus MSMA at 2.0 lb ai/ac applied early post-directed, and the remaining options were applied postemergence over-the-top and included 3) Staple at 0.064 lb ai/ac, 4) Staple at 0.032 lb ai/ac, 5) Staple at 0.064 lb/ac plus MSMA at 1.0 lb/ac, 6) Staple at 0.032 lb/ac plus MSMA at 1.0 lb/ac, and 7) MSMA at 1.0 lb ai/ac. Staple was applied with a nonionic surfactant at 0.25% of the spray volume. All herbicides were applied at 15 GPA at 19 to 30 PSI.

Staple alone at either rate failed to control sicklepod (Senna obtusifolia). However Staple at either rate provided greater than 90% early-season control of all Ipomoea morningglories, prickly sida (Sida spinosa), coffee senna (Cassia occidentalis), velvetleaf (Abutilon theophrasti), and bristly starbur (Acanthospermum hispidum). Cotoran applied PRE alone controlled sicklepod less than 60% and control was not improved by an EPOST treatment of Staple. The tank mixture of Staple plus MSMA generally improved sicklepod control to at least 70%. Excellent sicklepod control (greater than 90%) required a system of Cotoran applied PRE followed by an EPOST treatment of Staple plus MSMA or MSMA EPOST , or an EPDS application of Cotoran plus MSMA, followed by a LAYBY application of Bladex plus MSMA. Cotton yields reflected the levels of weed control with highest yields being achieved with weed management systems that used Cotoran PRE, and EPOST or EPDS treatment of an MSMA containing treatment, followed by a LAYBY treatment of Bladex plus MSMA.

Reprinted from the *Proceedings of the Beltwide Cotton Conference*
Volume 1:771-771 (1997)
National Cotton Council, Memphis TN