

**A BELTWISE REGIONAL ECONOMIC ASSESSMENT OF WEED MANAGEMENT  
SYSTEMS IN NON-TRANSGENIC AND TRANSGENIC COTTON**

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**Abstract**

Experiments were conducted in eight states at 23 locations from 1997 through 1999 to evaluate weed management, crop tolerance, cotton lint yield, fiber quality, and net returns to land and management in non-transgenic and transgenic herbicide-resistant cotton varieties. The transgenic cotton varieties included Buctril- and Roundup Ultra-resistant varieties. Weed management systems evaluated different combinations of Treflan preplant incorporated (PPI), Cotoran preemergence (PRE), Buctril postemergence (POST), Roundup Ultra POST, Staple POST, Bladex plus MSMA late-postemergence directed (LAYBY), and Cotoran plus MSMA early postemergence-directed (EPDS). Common cocklebur, common ragweed, entire-leaf morningglory, ivyleaf morningglory, large crabgrass, pitted morningglory, smooth pigweed, and velvetleaf were controlled at least 90% with only minor differences among weed management systems. Sicklepod was controlled 91% or better with all Roundup Ultra systems while the Staple and Buctril system controlled less. Common lambsquarters, goosegrass, pitted morningglory and prickly sida were controlled greater than 90% with all weed management systems except the Roundup Ultra-only POST system. The Buctril system controlled less Texas panicum and johnsongrass than the other systems. The yields of transgenic and non-transgenic cotton varieties kept weed free were similar and there were only minor differences in yields from cotton in non-transgenic systems and Roundup Ultra systems. The Buctril system yielded similarly to three of four Roundup Ultra systems and with one of two non-transgenic systems. There were no differences in net economic returns among the non-transgenic and Roundup Ultra weed management systems. The Buctril system cotton yielded less than Roundup Ultra-resistant cotton treated with Treflan PPI and Roundup Ultra POST. These data show that there are a number of effective weed management systems for optimizing high yields and net returns.