

**NUTSEDGE (*CYPERUS ESCULENTUS*)  
MANAGEMENT IN CONTINUOUS COTTON  
WITH ZORIAL-BASED SYSTEMS**

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**Abstract**

Much of the recent attention on weed management in cotton as focused on annual broadleaf weed control with the new POST biotechnology options. Despite many advances and new registrations, nutsedge species remain very troublesome and difficult to control. Nutsedge species infest 35% and 58% of cotton grown in North Carolina and Georgia, respectively and reduce net income by an estimated 2.1 to 11.4 million dollars. Studies were conducted in Williamson, GA and Lewiston, NC to evaluate various soil-applied programs with cultivation, with two applications of MSMA PDS + cultivation, and with Staple + MSMA and MSMA PDS + cultivation for nutsedge control over a two year period.

Data were obtained in the form of nutsedge shoot-number counts, cotton injury and cotton yield. Nutsedge control is calculated by dividing the number of shoots in the treated plots by the number of shoots in the non-treated control. Herbicides included: a blanket treatment of Treflan at 1.5 pints/A PPI and other soil-applied options consisted of Cotoran at 1.5 quarts/A PRE, Cotoran + Command at 1.0 lb ai/A (4EC in GA and 3ME in NC), Zorial at 1.68 pounds product/A + Cotoran, and Zorial split (0.84 pounds PPI and 0.84 pounds PRE) + Cotoran. POST options were: 1) one cultivation, 2) MSMA at 2.0 pounds ai/A early-Post directed (EPDS) and again late-Post directed (LPDS), followed by (fb) cultivation, or 3) Staple at 1.2 ounces of product/A plus MSMA EPDS fb MSMA LPDS fb cultivation. All plots were cultivated after the late PDS application.

Yellow nutsedge shoot numbers in GA were reduced from 42 per 2 square feet to 6 per 2 square feet in the plots that received Treflan + Cotoran and cultivation; an 87% reduction. Plots that received Treflan + Cotoran and cultivation had a 90% shoot-number reduction in GA. In North Carolina, yellow nutsedge shoot numbers were 105 per square yard in 1996 and 22 per square yard in 1997 in the plots that received only Treflan + Cotoran + cultivation;

a 79% reduction. Across both locations and years a Zorial split + Cotoran was the most effective soil applied treatment fb Zorial PRE + Cotoran, fb Command + Cotoran fb Cotoran alone. Two applications of MSMA + cultivation improved yellow nutsedge control to 80% compared to 62% control with soil-applied herbicides + cultivation. Staple + MSMA fb MSMA and cultivation provided 86% control compared to 80% control with MSMA and cultivation. Cotton yields were highest with the Zorial split + Cotoran. Second highest yields resulted from Zorial PRE + Cotoran then Command + Cotoran. No one management input will successfully control yellow nutsedge in cotton. The most consistent control and high yields were obtained with a Zorial split + Cotoran fb two applications of MSMA or MSMA tank mixtures and cultivation.