

**A SOUTHEASTERN REGIONAL ANALYSES OF  
ZORIAL AND POST HERBICIDES  
IN BXN COTTON**

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**Abstract**

Field experiments were conducted at six locations in North and South Carolina, Georgia, and Florida to evaluate soil and postemergence herbicide systems for cotton tolerance, thrips control, weed control, and cotton yield in BXN cotton. Treflan applied at 0.5 lb ai/ac preplant incorporated (PPI) and Bladex at 0.8 lb ai/ac plus Bueno 6 at 2.0 lb ai/ac applied at LAYBY were blanket treatments for all plots. Herbicide systems were composed of a factorial arrangement of PRE (preemergence) and early postemergence (EPOST) treatments. PRE herbicide options were 1) none, 2) Zorial at 0.75 lb ai/ac PPI fb (followed by) Zorial at 0.75 lb/ac PRE [hereafter referred to as Zorial split], 3) Cotoran at 1.5 lb ai/ac PRE, 4) Zorial split plus Cotoran at 1.5 lb/ac PRE, 5) Zorial at 1.5 lb/ac plus Cotoran at 1.5 lb/ac PRE, and 6) Command at 1.0 lb ai/ac plus Cotoran at 1.5 lb/ac PRE. EPOST herbicide options included 1) none, 2) Buctril at 0.5 lb ai/ac EPOST, 3) Staple at 0.063 lb ai/ac EPOST, and 4) Cotoran at 1.0 lb/ac plus MSMA at 2.0 lb/ac early post-directed (EPDS). EPOST and EPDS herbicides were applied when cotton was 4 to 6 inches tall. Di-Syston was applied in-furrow when Command was applied PRE. All other treatments received Temik in-furrow for early season insect control. Staple was applied with a nonionic surfactant at 0.25% (v/v). Herbicides were applied at 15 to 20 gpa with backpack and tractor mounted booms. Standard small plot research methodology was used at all locations.

Zorial plus Cotoran PRE, Cotoran PRE, and Command plus Cotoran PRE provided similar levels of pigweed and Palmer amaranth control (about 80 to 85%) when rated late season. Staple was the most effective postemergence option for pigweed and Palmer amaranth control when no residual soil-applied herbicides were used. All residual soil-applied herbicides except Treflan alone provided excellent control of common lambsquarters, Florida beggarweed, and redweed. Buctril, Staple, and MSMA are very effective postemergence options for Florida beggarweed control. Buctril controls common lambsquarters while Staple does NOT.

Cotoran PRE alone did not provide adequate season-long control of prickly sida or spurred anoda. Control was improved to greater than 90% by the addition of Zorial or Command to Cotoran. Tropic croton was controlled nearly 100% season-long with a PRE application of Command plus Cotoran. Cotoran plus MSMA EPDS was the most effective postemergence option for tropic croton control. Buctril also is an effective postemergence herbicide for tropic croton control. Bristly starbur control was approximately 85% with Cotoran PRE, Zorial split plus Cotoran PRE, and Command plus Cotoran PRE. Staple and Buctril are very effective postemergence herbicides for bristly starbur control. Staple must be applied to bristly starbur less than 2 inches tall for adequate control.

Morningglories were controlled approximately 95% with a Zorial split plus Cotoran PRE application while Command plus Cotoran PRE controlled 90%. Morningglory control with systems that used soil and postemergence herbicides was similar. Staple EPOST and Cotoran plus MSMA EPDS were more effective for season-long control of morningglories than Buctril. These differences are probably attributed to the residual activity of Staple and Cotoran on morningglories. Buctril provides only burndown control of morningglories.

The best season-long sicklepod control (80%) from soil-applied herbicides was obtained with a Zorial split plus Cotoran PRE treatment. Control with soil-applied programs was consistently improved with Cotoran plus MSMA EPDS. Adequate common cocklebur control required soil and postemergence herbicides with control being more consistent with systems that used Cotoran plus MSMA EPDS or Staple EPOST.

Cotton injury was less than 5% for all soil-applied herbicides except Command where injury was approximately 20 to 25% at 15 to 25 days after planting. Thrips damage was less than 5% for Temik treated cotton while Di-Syston treated cotton was damaged approximately 20%. Zorial split plus Cotoran PRE was the highest yielding soil-applied system at 1,050 lb lint/acre. When averaged over EPOST herbicide treatments, Buctril EPOST systems yielded from 1,150 to 1,200 lb/acre; Staple EPOST systems from 1,000 to 1,050 lb/ac; and Cotoran plus MSMA EPDS systems from 950 to 1,050 lb/ac. As seen in other crops, the highest yielding weed management systems in this research used soil and postemergence-applied herbicides.