

**COTTON RESPONSE TO FLUOMETURON  
AND PYRITHIOBAC APPLIED  
POSTEMERGENCE**

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**Abstract**

Pyrithiobac (Staple) was developed and is registered for use as a postemergence herbicide in cotton (Gossypium hirsutum L.). It is low in mammalian toxicity, has a low leaching potential, and effectively controls common cocklebur (Xanthium strumarium L.), pigweeds (Amaranthus spp.), and other broadleaf weeds. However, it is less effective on large morningglories (Ipomoea spp.) and does not control sicklepod (Cassia obtusifolia L.). An additional tank-mix herbicide may be necessary to overcome these weaknesses.

Two studies were conducted from 1995 (two sites) through 1996 (one site) to evaluate the effect of tankmixing fluometuron (Cotoran and others) with pyrithiobac on weed control and cotton response. Weed control treatments included pyrithiobac (0.062 lb ai/A), fluometuron (1.0 lb ai/A), fluometuron (2.0 lb/A), pyrithiobac (0.062 lb/A) plus fluometuron (1.0 lb/A), and pyrithiobac (0.062 lb/A) plus fluometuron (2.0 lb/A), each applied with nonionic surfactant (0.25% v/v) or crop oil concentrate (1 qt/A). Treatments were arranged in a factorial design with four replications. A cotton response test was conducted using the same treatments with an additional postemergence over-the-top (POT) vs. post-directed (DIR) variable and a similar experimental design. All treatments were applied using a tractor-mounted sprayer delivering 20 gpa at 3 mph. Weed control data included morningglory control at 7 and 28 days after treatment (DAT) and yield. Cotton response data included injury ratings and heights at 7 and 28 DAT, plant mapping, boll counts for earliness, and yield from the center two rows each year.

Crop oil concentrate decreased the activity of pyrithiobac on pitted morningglory (Ipomoea lacunosa L.) at the Prattville site in 1995 but increased the activity of fluometuron at the same site. Fluometuron controlled morningglory better in 1995 at Belle Mina but not in 1996. In the cotton response test, injury was higher and cotton was shorter when treatments were applied POT in 2 out of 3 site years. Cotton yield was decreased by the tank-mix treatments in 1995 at Prattville only. Cotton height (28 DAT), percent abscission of first position fruit, and number of reproductive nodes were not affected by treatment regardless of the site year.