

**Early Postemergence Control of Purple Nutsedge
in Cotton. Moore Farms, Waddell**

Stanley Heathman, Extension Weed Specialist, Tucson
Jon Chernicky, Plant Scientist, Maricopa Ag. Center
Charles Farr, Agricultural Agent, Phoenix

This test was to evaluate the crop safety and efficacy of butylate (Sutan +) and vernolate (Surpass) applied early postemergence for the control of purple nutsedge in long staple cotton.

Methods

The Pima long staple cotton was planted on 38 in. rows and irrigated every other row. At the time of application, May 21, 1985, the cotton was 2 to 8 in. tall, average height 6 in. and the emerged purple nutsedge was mostly in the seed rows with a height of about 5 in. The field had been cultivated 4 times prior to application of the herbicides. The soil is a sandy loam.

The herbicides were applied only in those furrows which were irrigated and on a 16 in. band in the bottom of the furrow up to the approximate water line. The rate of herbicide for the entire 38 in. distance between rows was applied on the 16 in. band in 23 GPA water. Rolling cultivators set to incorporate the herbicide into the bed and furrow followed application of the herbicides within 10 minutes. The field was irrigated within 48 hrs following application. It was hoped that the incorporation plus the irrigation would move the herbicide into the bed and seed row.

Plot size was 6 beds with 3 irrigated furrows wide and 400 ft. long, replicated 4 times in a randomized complete block design. The infestation of nutsedge varied in the field and tended to be most severe on the upper and lower ends.

Observations on crop injury and weed control were made throughout the growing season. Symptoms of herbicide injury to the cotton were similar with both herbicides. Leaf cupping and chlorosis were most evident in the mature fully expanded leaves. Where the highest rates of herbicides were used, some of the smallest cotton plants, those 2 to 4 in. tall at time of application, were the most severely injured. Some of these small cotton plants were defoliated completely and others showed symptoms on every leaf. Cotton over 4 inches tall at application exhibited fewer symptoms.

Control of purple nutsedge was satisfactory with all treatments, in the furrows that were irrigated. This control extended up both sides of the furrow to a point about 2 in. below the seed row and persisted through June. Weeds growing in the dry furrows were not effected. Because of the limited area of nutsedge control, the cotton was not released from nutsedge competition in the heavily infested areas.

Table 1. Percent Stunt of Cotton and Percent Control of Purple Nutsedge in the Irrigated Furrow

May 31, 10 days following treatment

<u>Treatment</u>	<u>lb/A</u>	<u>% injury</u>	<u>% control nutsedge</u>
butylate	1.8	0.5	74
butylate	3.2	0.4	83
butylate	4.8	2.0	92
vernolate	1.8	5.0	79
vernolate	3.2	3.0	90
vernolate	4.8	25.0	92

* Indicates percentage of cotton plants showing herbicide symptoms.

In this test:

1. Vernolate injured cotton more severely than butylate at all rates. The 4.8 lb/A application was particularly severe.
2. Butylate caused less injury to the cotton but some symptoms was evident with every treatment.
3. Control of purple nutsedge was unsatisfactory with every treatment. The herbicide was moved only a short distance from its point of application. Using these treatments in every other row irrigation does not appear to be practical.

Cotton plants showing leaf cupping and chlorosis on a few leaves were not stunted and these symptoms disappeared within 3 weeks. Small cotton plants that were defoliated did not recover. However, these were a very small percentage of the total plant population, less than 5%.