Purple nutsedge Weed Control in Cotton, Yuma Valley Experiment Station

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This test was intended to measure the effectiveness of El 171 for the selective control of purple nutsedge. It is also designed to determine the persistence of the herbicide in a Yuma Valley soil. A border was selected on the Yuma Valley Station with a heavy infestation of purple nutsedge. The soil was a clay loam. The previous crop was sweet corn with no herbicides used.

Herbicides were applied full coverage in 30 GPA of water on April 5, 1978. The soil had been plowed and disced. After application of herbicides the field was double disced prior to furrowing out, on 40 in. beds, pre-irrigation, mulching and planting DPL 16 Cotton, a single row on the bed. The beds were high 5 in. and the herbicide was mixed into 6 or 8 in. of soil. Plot size was 4 beds, 25 ft. long, replicated 4 times in a randomized complete block design.

Cotton stand evaluations were made May 19 when the cotton was 2 to 4 leaf stage. Weed control estimates were attempted during the growing season but were difficult due to cotton lodging and continuous emergence of new nutsedge plants. Harvest was October 18 with a 2 row picker harvesting the center 2 rows of each treatment. One entire replication was lost to harvest due to heavy foot traffic passing through the test area going away from the Mexican border.

Cotton Plants Per Ft. of Row, % Cotton Stunt May 19,
% Control of Purple Nutsedge August 10 and Yield of Seed Cotton in Pounds Per Acre October 18.

Treatment	lb/A	Cotton plants per ft. of row	% Cotton stunt	% Control purple nutsedge	Yield of seed cotton
El 171	0.2	2.7	0	0	2744 a*
El 171	0.4	3.8	0	77	2816 a
El 171	0.8	3.3	15	90	2772 a
El 171	1.0	2.7	20	85	2706 a
El 171	2.0	2.6	42	95	2156 b
Treflan	.75	3.3	15	0	2794 a
Treflan + El 171	0.75 + 0.2	3.3	15	15	2816 a
Check		3.6	0	0	2684 a

* Means in the same column followed by the same letter are not significantly different at the 5% level of probability.

In this test:

1. The cotton in this test was planted at a date later than normal for the Yuma Valley. Purple nutsedge was not competitive to the cotton seedlings.

2. The stand of cotton was not effected by herbicides. However El 171 at 1.0 lb/A or more caused some cotton seedling chlorosis. Cotton was severely stunted with El 171 at 2.0 lb/A.

3. Yield of seed cotton was reduced significantly by applications of El 171 at 2.0 lb/A. Yields were not effected by other treatments.

4. Control of purple nutsedge was difficult to evaluate at any specific date. As nutsedge plants turned chloroticor white and died, new plants would emerge. Control of purple nutsedge was most effective with El 171 at rates of 0.8 lb/A or greater.