

HERBICIDE TOLERANCE of ANNUALS

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Without doubt, one of the toughest weed problems to deal with is perennial nutsedge. The advice that moving is the only way to rid your garden of this pest doesn't apply anymore. There are some pretty good materials that control nutsedge, in certain situations.

Bentazon(Basagran) has been shown to be effective in controlling yellow nutsedge, *Cyperus esculentus*. Halosulfuron(Manage) has been shown to be effective in controlling yellow nutsedge and purple nutsedge, *Cyperus rotundus*. Each of these products is labeled for use in certain turf and ornamental crops. Seeing the need for perennial nutsedge control in a variety of ornamental crop settings work was initiated to evaluate phytotoxicity of these herbicides on annual flowers.

Tests were conducted in 1987 and 1988, using three different annual flowers each year, to determine the tolerance of these annual flowers to Basagran T/O and Manage. Test plots were established at Idle Hour Golf Course in Macon. Plot size was 3 feet wide by 6 feet long. Three annual flowers were planted per plot on 10 inch spacing in the row and 12 inches between rows. A 1 foot border was between plots to reduce problems with spray droplet drift.

Treatments were Basagran T/O at label rate and double label rate, Manage at label rate and double label rate and control. According to label directions, an oil concentrate was added to the Basagran T/O mix and a non-ionic surfactant was added to the Manage mix.

Treatments were made, over the top, 2 weeks after annual flowers were planted with a backpack sprayer using flat fan spray tips. Two applications of the Basagran T/O treatments were made 10 days apart.

Annual flowers were: Vinca, Begonia, Salvia, Celosia, Portulaca and Verbena.

Visual ratings of the damage to plants were made 2 and 4 weeks after initial treatment.

Discussion of Manage Treatments

Salvia treated with Manage showed interveinal chlorosis, yellowing, leaf drop and flower drop. Necrotic area developed on the leaves. Salvia showed no difference in tolerance to either rate of Manage.

Begonia was devastated by both rates of Manage. Four weeks after treatment the Begonia was dead. Initial damage was stunting and loss of flowers. This quickly deteriorated to dead plants.

Vinca showed distorted leaves and slight chlorosis. Within 4 weeks of treatment the plants had recovered. There was slight stunting at the double rate of Manage.

Portulaca showed the most tolerance to Manage. Neither rate caused any noticeable damage.

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Verbena, like Portulaca, was devastated by both rates of Manage. Four weeks after treatment there was no evidence that Verbena had ever been planted.

Celosia showed leaf scorch and leaf drop from both rates of Manage. The double rate caused more damage. The plants recovered by the end of the test.

Manage is labeled for post directed treatment in woody ornamentals. It is not labeled for over the top treatment and is not labeled for herbaceous.

Discussion of Basagran T/O Treatments

Salvia treated with Basagran T/O showed slight yellowing and some bronzing of the leaf. The damage was worse in the double rate treatments. Four weeks after treatment the label rate plots had outgrown the damage.

Begonia showed good tolerance to the Basagran T/O treatments. There was a slight stunting evident at 2 weeks after treatment but not apparent at four weeks after.

Vinca showed chlorosis of the outer margin of the leaf. In the double rate treatments this damage was more evident. Toward the end of the test the plants had totally recovered.

Portulaca showed only slight stunting to the double rate of Basagran T/O. No other damage was apparent.

Verbena had no tolerance for Basagran T/O. All of the plants were destroyed by both treatments.

Celosia had significant damage from the treatments. There was no difference in rates. Leaves showed marginal scorch. After two weeks leaf drop was evident. At four weeks the leaf drop had stopped but the plants never overcame the damage.

Basagran T/O is labeled for post directed application for woody ornamentals. It is labeled for over the top application on several species of woody ornamental. It should not be used on Verbena and only if necessary on Celosia, with the understanding that yellow nutsedge control will be good but the plants will suffer. The damage seen on the other annuals was acceptable in order to get nutsedge control.

Always read and follow label directions on all pesticides.

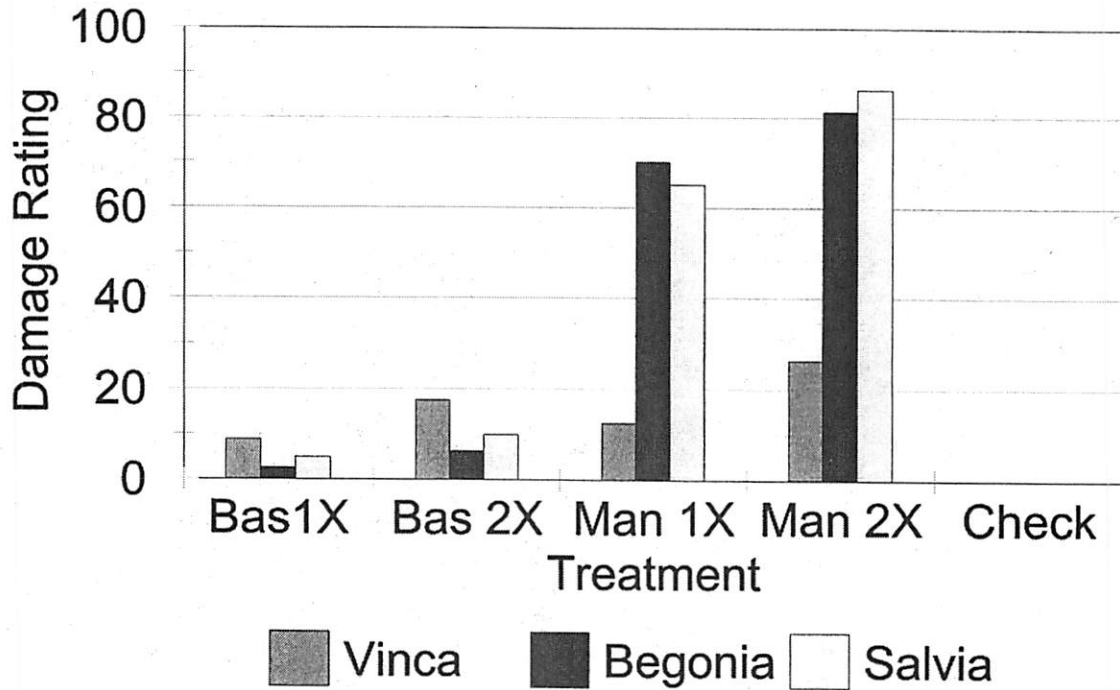
Testing on other annuals will continue in 2000. Input on annuals to test for tolerance to these herbicides is welcomed. Contact the author at uge2021@arches.uga.edu.

Charts of test results on the next page.

Dr. Tim Murphy served as study director on this project.

Damage Ratings-1997

Herbicide Toxicity



Damage Ratings-1998

Herbicide Toxicity

