

# Asulam in St. Augustinegrass

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## INTRODUCTION

St. Augustinegrass (*Tenotaphrum secundatum*) (Waltz.) Kuntze) is one of the most prevalent and economically important lawngrasses in tropical and semitropical areas of the world. In Florida, this grass comprises over 300,000 acres of turf including 46% of home lawns.

Atrazine has been used for almost two decades to control broadleaf weeds in St. Augustinegrass. However, grassy weeds are the most prevalent and difficult to control in this turfgrass. Currently, there are no practical means of post-emergent control of monocots by either chemical or mechanical means. Due to the long growing seasons, numerous applications of preemergent herbicides are required for nominal grassy weed control resulting in higher costs and sometimes injury to the turf, especially on lighter sandy soils.

Thirty-five experiments were conducted during 1975 and 1976 at the Agricultural Research Center at Ft. Lauderdale, Florida and other areas of the State to determine the effectiveness of asulam (Asulox®) for selective post-emergence control of established weeds in turf.

## METHODS AND MATERIALS

Test areas included both clean and weedy turf sites, and mowed areas of weeds, alone. Varieties of St. Augustinegrass used in the testing included common, Floratine, Floratam, Bitter Blue and an experimental selection. Experiments were conducted during all seasons of the year to determine the effects of climate and photoperiod. Randomized complete block designs with 3 or more replications were utilized and plots varied in size from 1 to 3m in width and 6 to 83 meters in length. A soluble salt formulation of asulam containing 3.34 lb ai/gal was tested at rates of 1.00, 1.67, 2.00, 3.34, 4.00 and 6.68 lb ai/A delivered in 44-45 gallons per acre of water.

Asulam is a foliar absorbed, translocated herbicide. Applications were made without surfactants and surface irrigation was discontinued for at least 24 hours after application to allow for plant uptake.

Most plots were treated with single applications using a compressed air sprayer and fan jet nozzle tips mounted on a garden tractor unit. Combination treatments tested were applied as tank mixes with 2.00 lb ai/A of atrazine (80% WP) or 2.00 lb ai/A of MCP (2.0 lb aiEC).

## RESULTS AND DISCUSSION

Better than 80% control was achieved with asulam at 2.2 kg/ha on problem monocots including crabgrasses (*Digitaria* spp.), goosegrass (*Eleusina indica*), bullgrass (*Paspalum supinum*), and sandbur *Cenchrus incertus*). In addition, significant suppression of bahiagrass (*Paspalum notatum*), common bermudagrass (*Cynodon dactylon*), smutgrass (*Sporobolus poiretii*), torpedograss (*Panicum Repens*) and crowfootgrass (*Dacyloctenium aegyptium*) was found at the 2.2 kg/ha rate with a single application. A 4.4 kg/ha rate gave 80% or better control of all the aforementioned grassy weeds growing in St. Augustinegrass turf. Control of weeds growing in turf was usually superior to that of weeds in a non-turf situation due to competition from the turf. Control of young and actively growing weeds was faster and more complete than with mature weeds. In addition, young weeds did not produce seed. Treatments made during winter months required 8-10 weeks for acceptable control while spring and summer treatments required about 4-6 weeks.

Several species of broadleaf weeds were also selectively controlled by asulam at 2.2 kg/ha. These include creeping beggarweed (*Desmodium* spp.), Spanish needles (*Bidens bipinnata*), mares tail or horseweed (*Erigeron canadensis*) and dog fennel (*Eupatorium capillifolium*). The use of tank mixes of asulam plus atrazine of MCP increased the spectrum of weed control without significantly increasing injury to the turf.

Injury to all varieties of St. Augustinegrass at the 2.2 kg/ha rate was negligible. A slight yellowing was noticeable about 3 weeks post-application but about 7 weeks post-treatment a more lush and intense color than in the untreated checks had occurred. At 4.4 kg/ha, yellowing was more noticeable at 3 weeks, but complete regreening again occurred and no actual injury to the turf was detected.

In general, turf which was maintained under healthy cultural practices including frequent mowing, irrigation and fertilization was less susceptible to herbicide injury, showed quicker recovery and accelerated weed kill by the herbicide.

Areas needing additional research include the effects of multiple and split-applications, timing intervals for multiple applications, and combinations of asulam and other herbicides.

## SUMMARY

Results from 35 experiments demonstrated the potential of asulam for the selective control of several species of monocotyledonous and dicotyledonous weeds in St. Augustine-grass. Susceptible weed species included crabgrasses, sandbur, paspalums, goosegrass, creeping beggarweed, Spanish needles and dog fennel.

## Questions & Answers About Asulox<sup>®</sup>

Q. *What types of crabgrass are susceptible to Asulox<sup>®</sup> ?*

A. All varieties of crabgrass commonly found in Florida are susceptible to a single 4 to 5 pints per acre application of Asulox<sup>®</sup> .

Q. *What about using Asulox<sup>®</sup> on other bermudagrass varieties?*

A. Extensive testing has shown that common Bermuda, Tifgreen 328, and Tifdwarf varieties are susceptible to injury by Asulox<sup>®</sup> at the recommended rates for good weed control.

Ormond Bermuda is susceptible to Asulox<sup>®</sup> discoloration, particularly where accidental overlapping of spray occurs, and is therefore not recommended.

Q. *What rate of Asulox<sup>®</sup> should I use?*

A. Use 4 to 5 pints of Asulox<sup>®</sup> per acre.

Dilute Asulox<sup>®</sup> in 40-50 gallons of water per acre.

Don't cut the rate. You risk poor weed control..

Q. *When should I apply Asulox<sup>®</sup> ?*

A. Asulox<sup>®</sup> is a translocated herbicide which performs best when weeds are young and actively growing. Treatment of mature weeds (when seed heads have begun forming) will result in less than satisfactory control.

Asulox<sup>®</sup> is a foliar absorbed compound, and weeds should have sufficient exposed leaf surfaces when sprayed.

Q. *What about application equipment?*

A. It is essential that spray equipment be properly calibrated, and all spray nozzles on a boom be of uniform size and spray pattern.

Spraying in the early morning while dew is present will aid the operator in seeing where he has and has not sprayed.

Avoid overlapping. It is wasteful, and may cause undue turf injury.

Always turn off your sprayer when slowing, stopping or turning.

Q. *What about mowing?*

A. It is best not to mow turf for several days before treatment to insure good foliage on weeds for uptake of Asulox<sup>®</sup> .

Turf should not be mowed for at least 48 hours after Asulox<sup>®</sup> treatment to allow herbicide translocation into the plants.

Do not apply Asulox<sup>®</sup> to turf mowed less than 1" in height as this turf is under stress, and can induce herbicide injury. (Do not treat tees or greens with Asulox<sup>®</sup> .)

Q. *What about irrigation?*

A. Do not irrigate turf for at least 8 hours after Asulox<sup>®</sup> treatment to allow for plant uptake.

Turf should be irrigated normally on subsequent days, and should not be subjected to moisture stress.

Q. *Is turf discoloration dangerous or unusual?*

A. Under certain conditions, a slight and temporary discoloration of the turfgrass may occur at 10-14 days after application. This is temporary, and does not adversely affect the turf.

Healthy turf is always less susceptible to herbicide injury. Turf under stress from lack of moisture, nutrients, disease, or insects should not be treated with herbicides.

Q. *Can I mix Asulox<sup>®</sup> with other chemicals?*

A. Do not mix Asulox<sup>®</sup> with other pesticides or fertilizers as these may inhibit its uptake or cause turf injury.

Do not use a surfacant with Asulox<sup>®</sup> as this reduces its selectivity and causes injury to the turfgrass.

Q. *How does Asulox<sup>®</sup> work?*

A. Don't expect overnight results since Asulox<sup>®</sup> is thoroughly translocated within the plant before it begins killing the entire plant.

Schedule of Asulox<sup>®</sup> action:

- Weeds cease growing and are no longer competing with turf
- Browning of weeds will become noticeable
- Susceptible weeds are nearly all brown
- Susceptible weeds are controlled