

## Smutgrass Control in Perennial Grass Pastures<sup>1</sup>

J. A. Ferrell, M. B. Adjei, J. J. Mullahey, and P. Mislevy<sup>2</sup>

### SITUATION

Smutgrass, a native bunch grass of tropical Asia, is a serious weed problem in improved perennial grass pastures, roadsides, and waste areas in Florida. Results of a survey conducted in 1998 indicated that more than 60 per cent of south Florida ranches had approximately 30 per cent of their pastures heavily infested with this weed. Smutgrass ranked second to dogfennel as the most widespread weed pest in permanent pastures in south Florida.

### DESCRIPTION

Two species of smutgrass found in Florida are small smutgrass (*Sporobolus indicus*, Figure 1) and giant smutgrass or West Indian dropseed grass (*Sporobolus indicus* var. *pyramidalis*, Figure 2).

Small smutgrass is often infected with a black fungus on the seedheads which gives them a compact appearance. It produces in excess of 1,400 seeds per seedhead and 45,000 seeds per plant. Seed production occurs throughout the growing season and the reddish seeds remain attached to the seedheads for some time



**Figure 1.** Small smutgrass (*Sporobolus indicus*).

after maturing. They are spread by adhering to livestock, water, and wind. Natural seed germination averages less than 9% because of a hard seed coat and seed remain viable in the soil for more than two years.

Giant smutgrass generally has an open panicle seedhead with no fungus and broad leaf blades at the

1. This document is SS-AGR-18, one of a series of the Agronomy Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. First published February 2000. Revised February 2006. Reviewed: November 2006. Please visit the EDIS Web site at <http://edis.ifas.ufl.edu>

2. J. A. Ferrell, assistant professor, Department of Agronomy; M. B. Adjei (deceased), associate professor, Range Cattle Research and Education Center; J. J. Mullahey, professor, West Florida Research and Education Center--Milton FL; P. Mislevy, professor, Range Cattle Research and Education Center--Ona FL, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611.

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**Figure 2.** Giant smutgrass, or West Indian dropseed grass (*Sporobolus indicus* var. *pyramidalis*).

base. Information is lacking on seed production and germination of giant smutgrass, but it has all the indicators of a prolific seeder as well.

Mature smutgrass plants are unpalatable to livestock, but new regrowth which is similar in quality to that of bahiagrass, is consumed for several weeks after burning or mowing.

### **MOWING, BURNING, OR RENOVATION?**

Cultural practices to control smutgrass could include mowing, burning, or renovation of the pasture.

Research has shown that mowing or burning do not control smutgrass, but instead promote the spread or germination of seed. The diameter of plants decreased under continuous mowing, but the number of plants increased. When mowing was discontinued, plants returned to their previous density. Burning is an inexpensive method to remove stemmy old growth on smutgrass plants and clean up a pasture if a rancher plans to graze the smutgrass during spring before spraying in summer. Alternatively, complete pasture renovation is expensive and gives variable results

because of smutgrass re-establishment from seed reserves in the soil.

### **CHEMICAL CONTROL**

In south-central Florida, broadcast spraying with 2qt/A (1.0 lb a.i./A) Velpar®, plus 0.1% v/v silicone surfactant to actively growing plants between July and early September resulted in 90% control of giant smutgrass in bahiagrass pasture. Greater than 90% control of small smutgrass was achieved with 1.5 qt/A (0.75 lb a.i./A) Velpar®. Mowing giant smutgrass to a 3-inch stubble and allowing the plants to regrow back to a 12-inch height before spraying with 2 qt./A Velpar® did not provide better smutgrass control than a non-mowed treatment. In southwest Florida studies, more than 90% control of giant smutgrass was obtained by applying 1.5 qt/A Velpar® in late July. Mowing 3 times at 30-day intervals prior to treating with Velpar® did not improve giant smutgrass control.

The timing of Velpar® application during the summer months is extremely important because rainfall is a necessary component to good smutgrass control. It is equally important to read the Velpar® label for complete instructions on application, safety, and cattle withdrawal interval (60 days).

Velpar® is a highly effective herbicide, but it is also quite expensive. Experiments were recently conducted to determine when Velpar® should be applied to maximize smutgrass control and return on the herbicide investment. It was concluded that Velpar® should not be applied until smutgrass densities reach approximately 50%. Applications made prior to this level of infestation will not result in enough additional bahiagrass (ie, ability to increase stocking rate) to justify the cost of Velpar® application.

### **PASTURE GRASS RECOVERY**

Bahiagrass will turn slightly yellow about 15 to 20 days after spraying with Velpar®. However, bahiagrass will recover and turn dark green within about 40 days after Velpar® application. This green color will be darker than the non-treated pastures.

Mowing prior to herbicide application did not improve bahiagrass recovery. Bahiagrass ground cover at one year after treatment averaged 85%, a 50% increase over the previous year. However, in the southwest Florida studies, where pasture was mowed 3 times before Velpar® application, bahiagrass recovery was greater in the mowed areas, which resulted in more grazeable forage. Smutgrass control with Velpar® in Pangola digitgrass and Floralta limpograss is possible provided the pasture stand is more than 12 months old and the rate of Velpar® application does not exceed 1.0 qt/A (0.5 lb a.i./A). Velpar® application at 2 qt/A (1.0 lb a.i./A) induced only slight injury to the leaves of a one-year-old *Suete atra paspalum* pasture with a July treatment.

## RECOMMENDATIONS

### General

- Do not apply Velpar® within 100 feet of oak trees because it will cause death.
- Read the Velpar® label for complete instructions on re-application interval, safety and cattle withdrawal interval.
- Cattle should be removed for a period of 60 days after applying Velpar®.
- If the initial smutgrass density covers greater than 80% of the area (if 8 out of 10 regular steps touch the base of smutgrass plants), complete renovation should be considered, since little bahiagrass is available for stand recovery. However, studies indicate bahiagrass will do an excellent job of recovery even at 70 to 80% smutgrass infestation.

### Bahiagrass Pasture

- Smutgrass infestation should be approximately 50%.
- Graze pasture in the spring until the end of June.
- Remove cattle and allow smutgrass to regrow.
- Apply 2 qt/A (1.0 lb a.i./A) Velpar® between July and early September. Apply herbicide when

plants are actively growing and there is good soil moisture.

- Fertilizing after Velpar® application will increase forage production and allow the bahiagrass to quickly fill the open areas created by smutgrass control.

### Floralta Limpograss and Pangolagrass (pasture must be more than one year old)

- Graze pasture until the end of June.
- Remove cattle and allow pangolagrass to regrow until mature and completely headed.
- Apply 1 qt/A (0.5 lb a.i./A) Velpar® between July and September.
- After 12 months, a second application of 1 qt/A (0.5 lb a.i./A) Velpar® may be necessary for successful control.
- Higher rates of Velpar® will result in significant damage to limpograss (>2 lb ai/A) and pangola digitgrass (>1 lb ai/A).

### Suete atra paspalum (one-year and older pasture)

- Graze lightly in spring until June
- Remove cattle and allow smutgrass to regrow.
- Apply 2 qt/A (1.0 lb a.i./A) Velpar® between July and September.

### Stargrass

Present information indicates Velpar® will kill stargrass.

### Literature Review

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