

Cogongrass [*Imperata cylindrica* (L.) Beauv.]

Victor Maddox, Ph.D., Postdoctoral Associate, Mississippi State University

Charles T. Bryson, USDA-Agriculture Research Service, Southern Weed Science Research Unit, Stoneville, MS

John D. Byrd, Jr., Ph.D., Extension/Research Professor, Mississippi State University



Fig. 1. Cogongrass flowering on a highway right-of-way in the Mississippi Delta.

Fig. 2. Cogongrass rhizome mass.

Fig. 3. Silky inflorescences on cogongrass.

Introduction

Problems Caused

Cogongrass has several common names, including jagggrass, Japanese bloodgrass, Red Baron, or speargrass but its scientific name is *Imperata cylindrica* (L.) Beauv. (Incl. *I. brasiliensis* Trin.). This grassy weed spreads by seed and vegetatively. Cogongrass produces numerous underground horizontal stems, or rhizomes, which are capable of rooting at each node and producing a new stem. These rhizomes are viable, but remain dormant during winter and produce new plants the next spring. Cogongrass has been designated as the seventh worst weed in the world. It is native to tropical and subtropical areas of the eastern hemisphere. Cogongrass was both accidentally and purposely introduced into the southern United States in the teens and early 1920's into Alabama, Florida, and Mississippi. Many farmers planted cogongrass for pastures and erosion control. Cogongrass was not a good livestock feed and it was too weedy for erosion control. Unfortunately, cogongrass with reddish to maroon foliage is still sold by some nurseries as an ornamental grass called Japanese bloodgrass or Red Baron bloodgrass. Unsuspecting homeowners discover that the red color vanishes and that cogongrass spreads into other areas of the landscape.

Regulations

Cogongrass is regulated as a Federal Noxious weed. It is also a Class A Noxious Weed in Alabama, North Carolina, and Vermont. It is a state Noxious Weed in Florida, Hawaii, and Mississippi. It is a Quarantine pest in California and Oregon, a Plant Pest in South Carolina, and a Prohibited Noxious Weed in Minnesota.

Description

Vegetative Growth

Cogongrass produces numerous upright smooth stem 6 to 47 inches tall, which form loose or densely compacted stands (Figure 1). Because of the dense stems and rooting system, cogongrass usually chokes out existing vegetation (Figure 2). One unique characteristic for identification is that the midrib of the leaf is off-set (closer to one leaf margin than the other).

Flowering

Another unusual characteristic of cogongrass is its flowering pattern. It normally flowers at the beginning of the growing season (March to May), although flowering may also occur following frost, fire, mowing, tillage, or other disturbances. Most native grasses that resemble cogongrass will flower at the end of the growing season, rather the beginning. In central and south Florida, however, cogongrass may flower throughout the year. Flowers typically occur at the top of the stem, and are easily identified by silvery or whitish silky hairs attached to the seed which create the appearance of a feathery plume (Figure 3). There is one grass that may be easily confused with cogongrass. Silver beardgrass [*Bothriochloa saccharoides* (Sw.) Rydb; Syn. *Andropogon saccharioides* Sw.] looks like cogongrass, but is smaller, forms clumps rather than dense stands, and flowers in the fall. Each cogongrass plant can produce up to 3,000 seeds per season. Researchers have found that cross-pollination is necessary for seed production. Seedlings are frequently found in open sites that have been disturbed by clear cutting, burning, tillage, excavation, or grading. Seedlings begin to produce rhizomes about 4 weeks after emergence.

Dispersal

Cogongrass is typically wind dispersed, but may also be carried by vehicles or other moving objects. Since seed are wind dispersed, wind from vehicles traveling on highways may aid dispersal. Viable vegetative parts of the plant, such as rhizomes, may be carried in soil on equipment as well.

Spread By

Cogongrass is typically spread by wind, including storm events, and vehicles and equipment.

Habitat

In the Mid-South and other southern states, cogongrass usually occurs in non-cultivated sites, including pastures, orchards, fallow fields, forests, parks, and natural areas, and highway, electrical utility, pipeline, and railroad rights of way. Soil type preference is primarily sandy soils with low nutrient levels, although cogongrass will inhabit more fertile sites.

Distribution

US

Currently, cogongrass occurs as a weed in Alabama, Florida, Georgia, Louisiana, Mississippi, Oregon, South Carolina, Texas, and Virginia, and it continues to spread. Several thousand acres are infested with cogongrass in the southeastern United States, and more than 1.2 billion acres worldwide.

Mid-South

It occurs in Alabama, Louisiana, and Mississippi with the highest concentrations along the Coastal Plain.

Control Methods

Biological

No biological controls are currently in widespread use in the United States.

Chemical

Currently, there is no single treatment that effectively eliminates cogongrass infestations. Roundup Ultra or Roundup Pro at 5 quarts per acre or as a 1.5% solution will suppress cogongrass. Repeated applications each year for several years are needed for control. Applications of Arsenal at 16 ounces per acre can be used in certain areas, and has provided excellent control up to one year after application. Because Arsenal and Roundup are nonselective herbicides, applications may damage nearby desirable vegetation. Since Arsenal remains in the soil for long periods, its effectiveness on cogongrass and other plants may continue up to a year after application.

Mechanical

Cogongrass will not persist in areas that are frequently cultivated; thus frequent tillage can be used for cogongrass control in certain sites.

Physical

Mowing or burning will remove above-ground cogongrass vegetation, but opens the plant canopy for emergence of seedlings and new stems from rhizomes.

References

- Brown, D. 1944. Anatomy and reproduction in *Imperata cylindrica*. Joint Publication No. 7:15-18. Imperial Agriculture Bureaux, Great Britain. 66 p.
- Bryson, C. T. 1984. Weed Alert: cogongrass [*Imperata cylindrica* (L.) Beauv.]. Southern Weed Society Newsletter 17:8.
- Bryson, C. T. and R. Carter. 1993. Cogongrass, *Imperata cylindrica*, in the United States. Weed Technology 7:1005-1009.
- Coile, N. C., and D. G. Shilling. 1993. Cogongrass, *Imperata cylindrica* (L.) Beauv.: a good grass gone bad! Florida Department of Agriculture & Consumer Services, Division of Plant Industry Botany Circular No. 28.
- Dickens, R. 1974. Cogongrass in Alabama after sixty years. Weed Science 22:177-179.
- Holm, L. G., D. L. Pucknett, J. B. Pancho, and J. P. Herberger. 1977. The World's Worst Weeds. Distribution Biology. Univ. Press of Hawaii, Honolulu, HI.
- Hubbard, C. E. 1944. *Imperata cylindrica*. Taxonomy, Distribution, Economic Significance and Control. Imperial Agriculture Bureau Joint Publication No. 7, Imperial Bureau Pastures and Forage Crops, Aberystwyth, Wales, Great Britain.
- McDonald, S. K., D. G. Shilling, C. A. N. Okoli, T. A. Bewick, D. Grodon, D. Hall, and R. Smith. 1996. Population dynamics of cogongrass. Proceedings of the Southern Weed Science Society. 49:156.
- Patterson, D. T., E. E. Terrell, and R. Dickens. 1979. Cogongrass in Mississippi. Mississippi Agriculture and Forestry Experiment Station Research Report 46(6):1-3.
- Shilling, D. G., E. R. R. L. Johnson, J. F. Gaffney, B. Brecke, D. Colvin, D. Hall, G. Tanner, R. Querns, and H. Dozier. 1998. The influence of timing of herbicide application on cogongrass management and the influence of introduced species on cogongrass management. Final Report Hernando County Public Works.
- USDA, NRCS. 2007. The PLANTS Database (<http://plants.usda.gov>, 5 September 2007). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.