

'Callide' Rhodesgrass ¹

J. Vendramini, A.R. Blount, and J. C. B. Debeux²

'Callide' rhodesgrass (*Chloris gayana* Kunth.) is a robust warm-season perennial grass native to Africa. It was first imported to the United States in 1903. Rhodesgrass cultivation is limited to peninsular South Florida because of severe winter killing at northern locations in the state. It has both erect stems and stolons. It is commonly established from seed. At full seed, plant height can vary from about 2 feet in the cool season (short days) to about 6 feet in the summer (long days). Callide rhodesgrass is better adapted to flatwoods than upland sands in central and south peninsular Florida. Callide can tolerate periodic flooding but does not tolerate long periods of standing water. It is a productive, good quality grass with better cool-season growth than bahiagrass and similar to limpograss (*Hemarthria* sp.), which may make Callide especially useful in southern Florida for fall and winter grazing. Callide can also be used as a hay crop. As with most tropical grasses, frost will damage Callide foliage, but regrowth after a frost or freeze can be rapid.

Establishment

A renovation program consisting of fall plowing, planting of a cool-season annual grass, then tillage again in April

or May before planting the rhodesgrass has been successfully used to establish a new pasture. If planting on an old bahiagrass pasture, a producer may choose to kill the existent grass with glyphosate in the fall, disk in the spring, and plant in early summer. In southern Florida, Callide can be planted from early spring to early fall. The seeding rate is 10–12 lb/A of seed. The seed can be broadcast on the surface after the last disking and then rolled to press seed into soil. The seed may be shallowly covered by dragging light chains or tree branches stripped of their leaves over the land ahead of the roller, but rolling alone usually gives sufficient coverage. Disking (harrowing) to cover the seed is not recommended because it can place the seed too deep in the soil. Because the seed is very light and fluffy, it will not flow properly in most mechanical seeders. In order to plant the seed, the usual practice has been to mix the seed with a filler to improve the uniformity of seed distribution.

Producers have experienced variable results with Callide seed germination. This may be due to variation in seed quality, insect damage, or poor seedbed preparation and planting technique.

1. This document is SS-AGR-59, one of a series of the Agronomy Department, UF/IFAS Extension. Original publication date March 2000. Revised June 2006, March 2010, and September 2013. Reviewed January 2017. Visit the EDIS website at <http://edis.ifas.ufl.edu>. This publication was originally written by C. G. Chambliss and M. B. Adjei. This publication is also a part of the *Florida Forage Handbook*, an electronic publication of the Agronomy Department.
2. J. Vendramini, associate professor and forage specialist, UF/IFAS Range Cattle Research and Education Center; A. R. Blount, professor, UF/IFAS North Florida REC; and J.C.B. Dubeux Jr, associate professor, UF/IFAS NFREC; UF/IFAS Extension, Gainesville, FL 32611.

The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication do not signify our approval to the exclusion of other products of suitable composition.

All chemicals should be used in accordance with directions on the manufacturer's label. Use pesticides and herbicides safely. Read and follow directions on the manufacturer's label.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county's UF/IFAS Extension office.

U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, dean for UF/IFAS Extension.

Management of Established Stands

Grazing

A new planting should not be grazed until the plants are 1 ½–3 feet tall. Rotational grazing of an established stand with periodic rest periods that allow the grass to recover from grazing is recommended. In the spring, fertilize and start grazing when new growth is 1 ½–2 feet tall. Graze to a stubble height of 8–10 inches. Remove cattle and permit Callide to reach a height of no more than 2 feet before re-grazing. Excess accumulation of forage during the summer is not recommended because it may create an environment favorable to spittle bugs and stand damage may occur.

Hay

Under favorable rainfall conditions and adequate N fertilization, two hay crops could be made prior to June and possibly two in the fall prior to the first frost. The forage should be harvested at 4–5 week regrowth intervals for better nutritive value (approximately 12% CP and 55% TDN). A 5-inch stubble height is recommended for hay harvest. Whenever a hay crop is removed, phosphorus and potassium should be applied according to soil test recommendations. Producers using Callide as a hay crop should be aware that armyworms and grass loopers can be a problem as they are on other highly fertilized improved grasses.

Fertilization

The target soil pH for Callide rhodesgrass optimum growth is 6.0. Annual P and K fertilization rates should be the same as those recommended for Pangola or stargrass. Callide pastures should be fertilized in the fall or early spring with 60 lb N/A; for increased production, two applications of 60 lb N/A are recommended. Hay fields should be fertilized with 60–80 lb N/A after every harvest. Phosphorus and K should be applied according to soil test recommendations. Yields and crude protein concentration of Callide increase with increasing N application rates, so the producer has the flexibility to fertilize based on how much grass is needed or the category of cattle to be grazed. Grass fertilized in the early fall may be especially susceptible to worms (caterpillars). Therefore, if fertilizing for grazing or a hay crop, producers may want to delay fall fertilizer application until after mid-October as a strategy to avoid this potential problem.

Production and Quality

There is not abundant scientific data in the literature about Callide herbage production and nutritive value. The results of a N fertilization experiment at Ft. Pierce are shown in Table 1. In this test, the crude protein concentration of the grass increased as the rate of N increased, while yields and digestibility tended to also increase, but not consistently. The average fall forage yield was 3,600 lb DM/A (62 day regrowth), with crude protein and digestibility of 10% and 52%, respectively. No direct comparisons have been made of yield and quality between Callide and other perennial grasses grown in southern Florida. It is expected, but not confirmed, that the cool-season growth of Callide will be equal to or better than that of Floralta limpoglass (*Hemarthria altissima*), with protein being greater and digestibility slightly lower.

Table 1. Response of Callide to fall fertilization at the Indian River Research and Education Center, Ft. Pierce, FL

N Fertilization (lb of N/A) ¹	Dry Matter Yield (lb/A)	Crude Protein (%)	Digestibility (%)
50	3,200	9.1	52
100	3,000	12.0	52
150	3,700	13.3	53

¹ Fertilized Oct. 16; Harvested at 6 weeks regrowth.

Pests

Weed Control

Herbicides normally used to control broadleaf weeds or water sedge can be used without damage to established Callide. Common bermudagrass and sedges' competition at establishment are the most important weeds on Callide pastures and hay fields. There are no selective herbicides to control common bermudagrass on Callide stands.

Insects and Diseases

Fertilization in the June to September period is not recommended because of the potential attacks of armyworms and grass loopers. Young stands are more susceptible to armyworm infestation. Chinch bugs can kill plants during a dry summer. To prevent or reduce infestations, tall (18–36 inches) Callide should be moderately grazed and maintained at a height of 14–18 inches through the summer to prevent trampling and thatching. Heavy thatching from trampled Callide stems plus N fertilization with accompanying unusually dry weather provide an ideal environment for chinch bugs to cause heavy plant damage. Also, these conditions combined with high rainfall provide an ideal environment for development of the two-lined spittle bug that can damage or kill grass. Although there are

a few diseases that attack Callide, they are not of economic importance in southern Florida.

Summary

Callide rhodesgrass is a tropical/subtropical perennial grass established from seed with a superior fall growth. It can be used for either grazing or hay. This grass requires careful grazing management. Without annual fertilization and controlled grazing, stands will likely be lost.

References

Kretschmer, A. E., Jr. 1975. "A Rhode Grass (*Chloris gayana* Kunth) for Permanent Pasture in South Florida." *Fla. Soil Crop Sci. Soc. Proc.* 33:5-6.

Quesenberry, K. H., D. A. Sleeper, and J. A. Cornell. 1978. "Heritability and Correlations of IVOMD, Maturity, and Plant Height in Rhodes Grass." *Crop Sci.* 18:847-850.