



## Pastures and Forage Crops for Horses <sup>1</sup>

C. G. Chambliss and E. L. Johnson<sup>2</sup>

Pastures can be grown in nearly all locations in Florida. Variations in soil and climatic conditions make some locations and sites better suited to forage production than others. Also, a particular forage species may be better adapted to a given site than other species.

The role of improved pastures in supplying forage varies from farm to farm, depending on the type of livestock operation, available facilities, quality of these facilities, and personal preference of the operator. It is possible for animals to receive a large portion of their feed from pastures; however, if this is to be achieved, careful consideration must be given to planning and carrying out a forage production and utilization program.

Major factors that must be considered in improved pasture production are: site to be used, forage varieties, liming and fertilization, and grazing management.

### SITE

The pasture site provides space for livestock and permits controlled grazing. The site also provides a storehouse of water, plant nutrients, and all other requirements to grow forage plants. The soil on any

given site can vary in its ability to support improved productive pastures. Several soil characteristics should be considered. Soils with a high organic matter content or clay content will have a higher fertilizer retention capacity and require fewer applications of fertilizer. Soil moisture holding capacity can vary depending on organic matter content, texture, depth to subsoil, and depth to water table. Very deep sandy soils that are excessively well drained, and low in organic matter, will tend to be more droughty than other soils and less productive. Soil pH is a measure of soil acidity. Soils with a very low pH (especially below 5.0) may need to be limed in order to support the growth of improved forages. The native soil fertility can vary from one soil to the next and should be checked when starting a new pasture program.

Soil samples can be tested and subsequent fertilization recommendations can be provided by the Extension Soil Testing Lab of the University of Florida. If the soil is acidic (low pH), the acidic condition can be corrected by liming. If the soil is deficient in certain nutrients required for plant growth, these can be supplied by the addition of fertilizer that contains the needed nutrients. But nothing practical can be done about the "natural"

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2. C. G. Chambliss, associate professor, Agronomy Department and E. L. Johnson, associate professor, Animal Science, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611. The use of trade names in this publication is solely for the purpose of providing specific information. It is not a guarantee or warranty of the products named and does not signify that they are approved to the exclusion of others of suitable composition.

moisture holding capability of the soil or its "fertilizer retention capacity." Florida has two major types of sites that are used by the horse industry; these are flatwoods and upland sands.

In general, the flatwoods sites have a higher water table, higher organic matter content, and thus better soil moisture holding capacity than the upland sands. Therefore, they are generally more productive. Soils on upland sites that contain some clay or silt are generally more productive than those that are nearly pure sand.

Pastures should be fertilized in the spring when the grass starts to grow. Pastures overseeded with a cool-season annual such as ryegrass may be fertilized in the fall and spring. The three major nutrients required for growing plants are nitrogen, phosphorus, and potassium. Nitrogen is the most important nutrient used for growing grass. Where there are good stands of legumes, nitrogen will not be needed since these plants can take nitrogen from the air and use it for their own growth and later provide nitrogen to the grass. Nutrients are recycled back onto the pasture through the manure and urine. This reduces the need for fertilizer as compared to that needed by a hay crop or other crops that are harvested and removed from the land.

## VARIETIES

Characteristics that should be considered when choosing species and varieties (cultivars):

- Adaptation to soils and climate.
- Growth cycle.

### Perennial Summer Grasses

**Bahiagrass** is an ideal general use pasture grass. Once established it can stand heavier grazing pressure than the other pasture grasses in common use. Therefore, horses are less able to destroy a stand of bahiagrass when pastures are overstocked and grass production is inadequate to meet their needs. Bahiagrass is not as productive as some grasses, and its quality is often low during July, August, and September. When mature, all of the bahiagrasses are extremely fibrous and low in feeding value, but the quality of the pastures can be improved by

overseeding some of the pastures with a summer legume such as alyceclover.

Recommended cultivars include Tifton-9 Pensacola, Pensacola, Argentine, and Paraguay 22. Tifton-9 Pensacola produces more top growth than other cultivars but may be less tolerant of overgrazing. Both Tifton-9 Pensacola and Pensacola are more frost resistant than Argentine or Paraguay 22. Argentine and Paraguay 22 have wider leaves than the two Pensacola cultivars. Argentine can develop the disease ergot on the seed.

**Digitgrasses** are more productive and responsive to fertilization than bahiagrasses in southern Florida. They require careful management, including adequate fertilization, controlled grazing, and occasional spittlebug and sugarcane aphid control.

Recommended cultivars include Pangola, Slenderstem, Transvala, and Taiwan. Transvala is resistant to sting nematodes, and Pangola is resistant to stunt virus. None are recommended for northern Florida because of winter injury.

**Improved hybrid bermudagrass** covers rapidly from vegetative plantings and is vigorous and highly productive. Like digitgrass it is both more responsive to fertilization and has higher requirements for its growth than bahiagrass. It makes an excellent hay crop when harvested frequently (every 4 to 5 weeks). Bermudagrasses require careful management and can be severely damaged by continuous overgrazing. They should not be planted on sites that flood or have very poor drainage.

Recommended cultivars include Coastal, Suwannee, Coastcross-1, Callie, Tifton-44, Florakirk, and Tifton 85. Tifton 85 is a new variety that is vigorous, high yielding, and has improved digestibility. All current data indicate that Alicia, an older but popular variety, is less digestible and less productive than Tifton 85. All of the improved hybrid bermudagrasses must be established from vegetative planting material. Common bermudagrass can be established by planting seed, but the common types are usually more susceptible to leaf diseases and are not particularly well suited for use in Florida.

The **stargrasses** are related to the bermudagrasses and are adapted only to south-central Florida. Three cultivars - Ona, Florona, and Florico are recommended. These grasses are very productive when grown under high fertility. It should be noted that the potential for prussic acid poisoning does exist with stargrasses.

Other perennial summer grasses include the following:

- **St. Augustine** requires a high fertility level and is a top producer on organic soils in the Everglades. Chinch bug is a serious pest on sandy soils.
- **Limpograss** (*Hemarthria altissima*) is adapted to the wetter flatwood sites. Floralta is the recommended cultivar, but no horse performance information is currently available.
- **Callide Rhodesgrass** is adapted to southern Florida. Little information is available, but it should tolerate controlled grazing by horses.
- **Suerte** is a new grass. It may tolerate light grazing by horses but should not be used as a general horse pastures.

Perennial summer grasses that are not recommended, because of their low production or low quality, but may invade a horse pasture are: common bermudagrass, centipedegrass, carpetgrass, and torpedograss. Common bermudagrass, if highly fertilized, can be quite productive. It will often provide ground cover in high traffic areas where other grasses will not. Centipedegrass is adapted to areas with good drainage, and carpetgrass and torpedograss which are adapted to moist flatwood sites have low productivity. These grasses tolerate close grazing and may invade more productive grasses when pastures are overstocked.

### Annual Summer Grasses

**Pearlmillet** is useful as a supplement to perennial summer grasses. It is highly productive under adequate fertility. It will not tolerate flooding.

**Sorghum-sudangrass** hybrids CANNOT be recommended for horse pastures because of prussic acid poisoning and problems with the urinary tract.

### Annual Winter Grasses

**Small grains** including oats, rye, and wheat all furnish good grazing during December, January, February, and March if planted in October. They will not tolerate flooding and cost of land preparation, planting, and fertilization is high.

**Ryegrass** has less seedling vigor than the small grains but can be a valuable winter forage crop. It has a high moisture requirement and responds to liberal fertilization. It can be planted alone or in mixture with small grains and/or various cool season legumes.

### Summer Legumes

**Rhizoma peanut** is a persistent perennial rhizomatous legume adapted to the well-drained soils over the entire state. Florigraze is the recommended cultivar, and it is propagated from rhizome sections. This crop is slow to establish and often requires two seasons to develop complete ground cover. The perennial peanut is best established in a clean seed bed and any perennial grass to be mixed with it should be planted later. Forage quality of summer pasture is increased by the addition of Florigraze (Circular S-275).

**Alyceclover** is a high quality annual legume that is readily accepted by both grazing cattle and horses. Seedings can be made from March through June at a rate of 15 lb/A. Alyceclover types currently available are susceptible to attack by root knot nematodes. It should not be planted on soils subject to long periods of flooding. It is an excellent hay crop and is frequently planted following watermelons to take advantage of the residual fertility.

### Winter Legumes

**Clovers** make excellent winter pastures for horses especially when mixed with the small grains or ryegrass for overseeding bermudagrass and bahiagrass sods. A mixture of clover is usually recommended. White and red are better adapted to the wetter sites while crimson and arrowleaf are better adapted to the well-drained locations. For other

information see Agronomy fact sheet SS-AGR-49 Winter Forage Legume Guide.

**Alfalfa** has met with good success by some growers in recent years on moderate- to well-drained sites. It requires intensive management including high levels of fertility and favorable moisture conditions. Excellent hay can be made from this plant, but high humidity in Florida makes drying difficult.

## PASTURE MANAGEMENT

### Establishing Pastures

1. Soil testing should be conducted to determine the fertilization and liming program. Most native Florida soils will require lime for optimum production.
2. A clean, tilled, weed-free seedbed is essential for all perennial crops.
3. See rate, date, and time to graze information in Table1 for each crop.
4. Winter annual legumes, grasses, and summer annual legumes can be overseeded on sods by either broadcast or sod drilling, or they can be seeded into prepared seed beds. When overseeding, the sod should be grazed very heavily, mowed, or burned to remove the top growth. The small grains (rye, wheat, oats, and triticale) may perform poorly when overseeded on a bahiagrass sod unless the sod has been disturbed by disking or chopping. Bahiagrass should be cultivated (disked) to obtain 30 to 50% disturbance in order to provide good seed to soil contact and reduce the competition from the bahiagrass.

### Maintaining Pastures

1. Soil testing is needed to develop an efficient fertilization program.
2. Weed control can be accomplished through a combination of grazing management, herbicide applications, and mowing.

3. Manure should be spread with a light drag. Do this during hot, dry weather. Internal parasites will be killed by the hot sun. Mowing areas where horses do not graze and dragging pastures to spread manure piles will improve the quality and the utilization of the pasture.
4. Insects are not usually severe enough to justify insecticide application, but occasional outbreaks can be controlled.

Rotational grazing can be one of the most valuable management practices employed. It calls for 2 to 10 pastures which can be grazed in sequential order. This allows the forage to recover in a given pasture while another pasture is being grazed. This helps prevent "sand spots." Having more than one gate and alternating the one used can help prevent these spots from developing near the gates.

Stocking rate is about 2 to 2 1/2 acres of pasture for each horse. This may vary to some degree, depending on location, type of grass, and size of the horse. In general, when the pasture area is less than one acre per horse, exercise becomes the main use of the pasture and its use as a source of feed becomes secondary. **Avoid a situation where there are too many horses on too few acres for too long a period of time.** This results in destruction of the pasture grass and encroachment of weeds.

**Table 1.** Planting guide for forages.

Crop	Planting rate(lb/A)	Planting material	Planting date**	Months from planting to grazing
<b>Grasses</b>				
Bahia	15 - 20	seed	Feb 15 - Aug 15	3 - 12
Bermuda	1200	sprigs or green tops	Jan 15 - Aug 15	3 - 12
Digit	1200	green tops	Jun 1 - Aug 15	3 - 12
Ryegrass	20 - 30	seed	Oct 1 - Nov 15	1 - 2
Pearlmillet	24 - 30	seed	Mar 15 - Jun 30	1 - 2
<b>Small Grains</b>				
Rye	84 - 112	seed	Oct 15 - Nov 15	1 - 2
Wheat	90 - 120	seed	Oct 15 - Nov 15	1 - 2
Oats	96 - 128	seed	Sep 15 - Nov 15	1 - 2
Triticale	84 - 112	seed	Oc. 15 - Nov 15	1 - 2
<b>Legumes</b>				
Rhizoma Peanut	80 bu.	rhizomes	Jan 15 - Mar 15	8 - 15
Alfalfa	12 - 20	seed	Oct 1 - Nov 15	4 - 7
Alyceclover	12 - 15	seed	Apr 15 - Jun 30	2
Crimson	20 - 26 *	seed	Oct 1 - Nov 15	2 - 3
Red	12 - 15 *	seed	Oct 1 - Nov 15	3 - 4
Arrowleaf	8 - 10	seed	Oct 1 - Nov 15	3 - 4
White	3 - 4	seed	Oct 1 - Nov 15	3 - 4
<p>* Assumes broadcast planting on bahiagrass or other perennial grass sod. Solid stands drilled into a prepared seedbed can be seeded at lower rates. Seeding rates would be reduced approximately 20% for each component if a mixture were used.</p> <p>** For fall planted cool season annuals, producers in North Florida may begin planting in the early part of the planting date range. Producers in South Florida should wait and plant in the latter 1/2 to 1/3 of the planting date range.</p>				