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Floralta Limpograss (*Hemarthria altissima*) [1]

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Floralta limpograss is a warm-season perennial grass. It has good cold tolerance and can be grown throughout the state of Florida on selected sites. It is best adapted to the wetter flatwood sites and should not be planted on upland deep droughty sands. Limpograss is especially useful to plant in those moist areas where other improved grasses are not well adapted. The need for water control is not especially critical, thus making this grass environmentally friendly. It can withstand seasonal flooding as long as the top of the grass stems are above the water. It produces more fall and early spring growth than bahiagrass. It produces relatively high yields with minimum fertility. Mature Floralta limpograss is more digestible than many other grasses, thus it has been recommended for fall stockpiling. On the other hand, protein concentration is low in mature stockpiled grass (3-5%) and supplementation may be needed to meet the protein requirements of most livestock.

Cultivars

Four cultivars of limpograss have been released. These are Floralta, Bigalta, Redalta, and Greenalta. Floralta and Bigalta have much larger stems and are more digestible than Redalta or Greenalta. Bigalta is somewhat more digestible than Floralta, but it is not as persistent under grazing as Floralta. Also, Floralta appears to have a wider soil/site adaption than Bigalta. Therefore, Floralta is the recommended cultivar for pasture establishment. Redalta and Greenalta are not recommended because of their lower quality. Bigalta can be used on specific sites where it is best adapted (moist, high organic matter sands) and if it is only harvested mechanically or where grazing is managed very carefully. In the past, most plantings of Bigalta were lost due to overgrazing and invasion by common bermuda or other weedy grasses.

Yield and Quality

Limpograss begins to grow earlier in the spring than most warm-season grasses and continues to grow later in the fall. Yields equivalent to 8-10 tons

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of hay per acre have been measured with good fertility and soil moisture. Organic matter digestibility of young grass may be as high as 70% but drops to as low as 40% in mature stockpiled grass. The protein concentration in young grass less than 6 weeks old will usually exceed 7%, especially in the cooler spring or fall periods. During the summer, the protein concentration of 6-week-old regrowth has fallen below 7%, even with 60 to 80 pounds of nitrogen (N) per acre. Twelve- to sixteen-week-old stockpiled grass (Floralta or Bigalta) may only have a protein concentration of 3%, but the digestibility and palatability are relatively high. With protein supplementation, mature and/or pregnant cows can be maintained, and in some situations body condition can be improved.

Pasture Establishment

Lime and establishment fertilizer requirements will vary depending on soil type and previous treatment of the area. Test soil to determine lime requirement. Add enough lime to reach a target pH of 5.0. This should be applied two to six months before planting. Establishment fertilizer (nitrogen (N), phosphorus (P) and potassium (K) should be applied after planting when the grass has germinated and started to grow. If the soil tests low for P and K, apply N-P_2O_5-K_2O at the rate of 30-20-20 pounds per acre. Apply an additional 60 to 70 pounds of N and 20 pounds of K_2O 30 to 50 days later.

The most desirable time for planting is during the warm, rainy season. In South Florida, some winters are warm enough so that stockpiled grass does not freeze and therefore planting material is available for early spring planting. But planting in the early spring is risky due to the April-May drought. If possible, start seedbed preparation during April-May in order to be ready to plant in mid to late June. Plantings can be made through August and perhaps even later in South Florida. Limpograss produces very few seed; therefore, it must be established vegetatively. Freshly mowed stems and stolons of two- to three-month old grass are spread over a well prepared seedbed and partially covered with a disk harrow. A cultipacker or similar implement should follow the disking operation in order to produce a smoother pasture, establish soil capillarity, and insure rooting by good soil contact. Broadcast a minimum of 1000 pounds of planting material on newly prepared native land. Increase the planting rate to 1,500 to 2,000 pounds on old fields infested with other grasses and broadleaf weeds.

Many weeds can be controlled by thorough cultivation prior to planting. Herbicide treatment is recommended on land infested with broadleaf weeds. Use Banvel herbicide. Do not use 2,4-D or Weedmaster (contains 2,4-D) since the limpograss is sensitive to this herbicide. (See publication SS-AGR-08 WEEDS IN THE SUNSHINE: Weed Management in Pastures and Rangeland-2002 for up-to-date herbicide recommendations.)

Grazing should be delayed until the limpograss is well established. It may be wise to take the first harvest as hay. This will give the grass additional time to establish before being subjected to grazing. Some producers may desire to plant aeschynomene or some other summer legume at the same time the limpograss is planted. This can be done if it is reasonably certain that weeds will not be a problem requiring the use of Banvel herbicide. Also, the normal planting rate for the legume might be reduced to avoid excessive competition with the grass.

Management of Established Stands

Liming

Lime as needed to maintain a soil pH of 5.0.

Fertilization of Pastures

For grazed, established stands, apply 60 lb N/A and all of the P_2O_5 and K_2O in late winter or early spring. Apply an additional 60 lb N in late summer or early fall. For a minimum fertilization alternative, ignore the P and K recommendation and apply only 60 lb N per year.

Fertilization for Hay, Silage, or Green Chop

Apply 80 lb N/A and all of the recommended P_2O_5 and K_2O in late winter or early spring. Apply an additional 80 lb N and 40 lb K_2O/A after each cutting, except the last in the fall. Include 20 lb of P_2O_5 in the supplemental fertilizer if the soil tested low or medium in P.

Grazing Management

During the growing season try to maintain a stubble height of 6 inches or greater, i.e., do not graze the grass all the way to the ground. During the winter the stems can be grazed all the way to the ground, but as soon as this happens animals should be removed and should not be returned until the grass has grown to a height of 12 inches or more. Then graze, but take only one-half of the top growth. As the warm season progresses, try not to let the grass get too far ahead of the animals; that is, try not to let the grass grow taller than 18 to 24 inches. Extremely tall grass results in waste through trampling. Trampling causes a buildup of mulch that increases the possibility of insect damage from spittlebug and chinchbug. Rotational grazing is recommended. Rotational grazing (rotational stocking) will increase total production from the pastures as compared to continuous grazing (continuous stocking) and should increase the persistence of limpograss.

Supplementation on Pasture

Limpograss quality decreases as it matures but digestibility (TDN) of 8 to 10 week regrowth forage is higher than bahiagrass. However, the crude protein of limpograss continues to decline as it matures and low protein often limits forage intake and digestibility (Table 1). Limpograss stems and leaves have similar digestibilities, but the crude protein concentration in the stems is about one-half of the crude protein concentration in the leaves. Consequently, the relative leaf-to-stem ratio consumed by the grazing animal will affect the need for protein supplementation. The TDN-to-crude protein ratio (TDN:CP) is a measure of the balance between digestible energy (TDN) and protein. In forages with TDN:CP ratios of 7 or below, added protein supplements usually do not result in large improvements in performance. In forages with TDN:CP ratios above 7, added protein supplements usually result in improvements in forage intake and cattle gains.

Several strategies, including protein supplementation, growing with a legume, nitrogen fertilization, and managing grazing for consumption of mostly leaves, have been successful in avoiding protein deficiencies in cattle grazing limpograss. Feeding 0.25 to 0.50 lb/day per animal of crude protein from a urea-based supplement to growing cattle that were grazing limpograss in a six-pasture rotational grazing program (5 weeks between grazings) improved gains 0.4 to 0.7 lb/day. Interseeding limpograss with aeschynomene also improved gains 0.4 to 0.5 lb/day, nearly as much as protein supplements. Higher nitrogen fertilization rates (130 lb N/acre compared to 45 lb N/acre) improved forage crude protein concentration and gains of growing cattle, but some additional improvement in gain (0.2 lb/day) was found when a urea-based supplement was fed at the higher level of nitrogen fertilization. In contrast to these trials, when growing cattle were rotationally grazed on limpograss pasture at a stocking rate allowing a significant amount of residual forage, protein supplements did not improve gains. Presumably cattle were consuming mostly leaves that were higher in protein. Protein supplements are recommended for cattle grazing stockpiled limpograss, and the quantity of supplemental protein needed increases as the plant is defoliated and a higher proportion of stems are consumed.

Overseeding Legumes

Both aeschynomene and white clover are adapted to the same moist sites where limpograss is grown. Producers have had success growing aeschynomene in combination with limpograss. It provides much needed protein from July through September and has produced significant increases in animal gain. Aeschynomene production varies from year to year. In those years with above average spring rainfall, production will be better than other years. Spring rainfall allows the aeschynomene to germinate and start growing earlier. White clover can be used where good soil moisture is maintained from November through May and where the pastures are rotationally grazed year round in contrast to being stockpiled.

Stockpiling

Floralta and Bigalta have been recommended for fall stockpiling (standing hay crop) because the digestibility of the grass remains relatively high as the plants grow older compared to that of other tropical grasses. By removing cattle in mid August

from the area where grass is to be stockpiled, followed by fertilization, significant growth can be accumulated through September and October. By waiting until late September or October to fertilize, the growth response is much less. The accumulated grass that is 12 to 16 weeks old will be low in protein. Animals grazing the stockpiled grass will need protein supplementation. Do not stockpile grass during June, July, and early August. By November, the grass that grew during this period will be very old and cattle may refuse it. This practice also encourages the buildup of spittlebugs and results in damage to the grass.

Hay or Silage

Be ready to harvest when the grass is four weeks old and try to have it harvested before it is more than six weeks old. Consider ammoniating grass that is more than six weeks old. This will increase its digestibility and protein. Limpograss dries slower than bermudagrass. Use a conditioner when possible to crush the stems and speed up drying. Some dairymen have utilized limpograss as silage. They have been able to successfully fertilize and harvest on a 5 to 6 week schedule throughout the growing season. Limpograss makes excellent grass silage as long as it is stored properly.

Use In Beef Production Systems

Limpograss has seen increased use in beef productions systems in recent years. Much of the increased acreage has been "stockpiled" and grazed during the winter. The other niche of limpograss is for developing replacement heifers. The higher digestibility of limpograss results, when properly managed and supplemented, in improved growth and reproductive performance of developing females. An advantage of limpograss is more growth at cooler temperatures compared to bahiagrass, resulting in more growth and a higher stocking rate in the stocking rate limiting months (December to May). Developing heifers using rotationally grazed limpograss in a year-around system has resulted in good growth and pregnancy rates in the heifers, relatively high stocking rates compared to bahiagrass, modest fertilizer and supplements inputs, and reasonable costs.

Pests

If not overgrazed, Floralta limpograss will compete with most weedy grasses. Vaseygrass, an undesirable plant, has invaded Floralta in a few instances when pastures were grazed too heavily during the summer. Banvel herbicide can be used to control many broadleaf weeds. Do not use 2,4-D, since limpograss will be injured by this herbicide.

Some insect problems have been observed on Floralta limpograss. Isolated cases of damage from armyworms, spittlebugs, and chinchbugs have been reported. Spittlebugs may be more of a problem if the grass is not grazed and is allowed to accumulate throughout the summer.

No major foliar diseases of Floralta limpograss have been identified.

Summary

Floralta limpograss is the recommended cultivar for planting because it is more tolerant than Bigalta to heavy grazing. All limpograss cultivars are adapted to moist sites. None are adapted to dry, deep, sandy soils. Compared to bahiagrass, limpograss has superior late fall and early spring production, especially in South Florida. Floralta is highly productive when well fertilized and competes well with broadleaf and grassy weeds. Mature limpograss is more digestible than many other grasses, but crude protein can be low in accumulated or stockpiled grass. Protein supplementation is needed when stockpiled limpograss is fed. Floralta and Bigalta are difficult to dry for hay at advanced stages of growth due to the high yield, large stems, and moist soils where they are growing.

Table 1. Effects of maturity and plant part on forage quality of bahiagrass and limpograss.

Description	Bahiagrass[a]			Limpograss[b]		
	% TDN[c]	% CrudeProtein[c]	TDN/CP	% TDN[c]	% CrudeProtein[c]	TDN/CP
Regrowth weeks						
4	59.5	10.3	5.8	60.4	9.6	6.3
6	58.2	8.6	6.8	59.9	10.2	5.9
8	54.6	6.8	8.0	59.3	5.0	11.9
10	54.6	7.0	7.8	58.7	4.5	13.1
Leaf [d]	-	-	-	53.6	9.7	5.5
Stem [d]	-	-	-	52.5	3.8	13.8

[a]Bahiagrass grown during the summer.
[b]Limpograss grown during the fall.
[c]Percent of dry matter.
[d]Limpograss grown during the summer, 6 weeks regrowth.