



Five basic steps to successful perennial pasture grass establishment from vegetative material in South Florida

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Published in *The Florida Cattleman and Livestock Journal*, August 2024

Establishment of perennial pastures is critical and there are several basic steps that are important to minimize the risk of establishment failure and to guarantee effective stand growth. Warm-season perennial grasses are the foundation for Florida's livestock industry. In south Florida, these grasses are represented by: bahiagrass, stargrass, bermudagrass, and limpograss. Except for bahiagrass, all require vegetative propagation for establishment. This article describes the different steps to minimize establishment failure and lead to a favorable outcome of a dense stand of perennial pasture grass.

Reestablishment or total renovation appears to be the most effective way to renovate unproductive pastures that have been lost to pest damage, overgrazing, prolonged drought, and instances of multiple freezing temperatures during late winter, etc. This practice destroys the entire sod, allowing for a clean seedbed for reestablishment to new, desirable grasses.

While replanting damaged bahiagrass pastures with alternative improved grasses such as stargrass, bermudagrass, or limpograss is expensive with approximate costs of \$700/acre, the investment should pay for itself with greater forage production and carrying capacity.

STEP 1) A CLEAN SEEDBED READY FOR PLANTING

A few reasons for preparing a seedbed are to incorporate lime, level the soil, and control weeds, among others. Preparing a clean seedbed for perennial grass planting can take several forms. The preferred option is to seed a winter annual crop, such as annual ryegrass, during the fall of the year on the pasture that needs renovation. This is accomplished by moldboard plowing, disking, seeding, and packing. The following spring, when the winter annual dies and dry conditions prevail, the land should be tilled at 2- to 3-week intervals until planted to the desired perennial grass. Another land preparation choice is to spray approximately 4 qt/acre of glyphosate on the deteriorated pasture in early spring (March) when vegetation is about 6 inches tall. Allow 3 to 4 weeks for plants to die, followed by tillage during the dry season. A third method would be to completely turn over the sod with a moldboard plow in April to desiccate the sod, followed by repeated disking until planting. In any of these situations, repeated tillage is necessary, especially if the pasture being renovated was infested with cogongrass, torpedograss, or other perennial grass species with rhizomes. The repeated tillage operations will help desiccate these unwanted rhizomes and will minimize reinvasion of these species.

STEP 2) PRECONDITIONING CLEAN PLANTING MATERIAL

Planting material should be obtained from a pure-grass stand with no common bermudagrass or weeds and preconditioned as follows: a) Apply 400 lb/acre of a 20-10-20 (P₂O₅-K₂O) analysis fertilizer in March to increase top-growth and b) Two weeks before cutting plant material, apply 50 lb N/A to initiate growth of shoots at the base of each leaf node. These shoots develop into new plants faster when planted if they receive N fertilizer prior to cutting. One acre of preconditioned plant material should provide enough planting material to cover approximately 5-10 planted acres.

STEP 3) TIME YOUR PLANTING FOR GOOD SOIL MOISTURE

It is best to wait for at least 2 to 3 inches of rainfall before planting vegetative material (tops) of perennial grasses. Generally, good rainfall should prevail in the immediate period-to-weeks after planting.

In south Florida, early July plantings work in most years for stargrass, bermudagrass, and limpograss. However, fall planting of limpograss has been preferred by many producers because the planting area may be too wet with limited opportunity for mechanization during the summer. Research conducted at the Range Cattle Research and Education Center tested the fall planting of limpograss and Jiggs bermudagrass, with or without annual ryegrass. Plots were planted on November 10th 2018 and 2019 and harvested on January 30th, February 27th, and March 28th, and May 15th in 2019 and 2020. Limpograss + annual ryegrass had greater herbage accumulation than limpograss only in the winter/spring months (3,500 vs. 500 lb DM/acre); however, there was no difference in the May harvest between limpograss + annual ryegrass and limpograss only (2,500 lb DM/acre). The areas planted with limpograss only had better ground cover than limpograss + annual ryegrass (75 vs. 60%) in May of the subsequent year after planting. Similarly, plots planted with Jiggs + annual ryegrass had greater herbage accumulation in the winter/spring than Jiggs alone (4,100 vs. 200 lb DM/acre). Jiggs did not establish well and both treatments had limited ground cover in May (15%). It was concluded that limpograss can be planted in the fall with or without annual ryegrass, but the success of this management practice is highly dependent upon the rainfall during the planting dates. Conversely, Jiggs bermudagrass did not establish well when planted in the fall.

STEP 4) ADOPTION OF GOOD PLANTING TECHNIQUES

Preconditioned grass material must be baled immediately after cutting. The vegetative material must be loosened and uniformly spread on a prepared seedbed (Figure 1) on the same day as baled and incorporated into the soil within 15 minutes after spreading. This can be accomplished by disking or crimping material into the soil with a crimper machine also called a "pizza cutter" (Figure 2). The amount of plant material recommended is 1,200 lb/acre.

Several producers and grass planting service providers are using haybusters (Figure 3) to decrease the labor required to plant vegetative plant material. Although this method is a viable option to plant vegetative material, the amount of vegetative material must be increased to at least 2,500 lb/acre due to the damage caused by the haybuster on the plant material.



Figure 1. Using a spreader to uniformly distribute planting material on seedbed (photo by Bridget Stice).



Figure 2. Crimper or 'pizza cutter' used to push planting material into soil with a roller behind it to firm the soil. A second rolling in a perpendicular direction is required (photo by Bridget Stice).

Finally, the land should be rolled firmly in two directions immediately after disking or crimping material into the soil. The objective of this final step is to minimize drying of planting material and improve plant-soil moisture contact. This will allow for a successful establishment even if no rain is received within two to four days after planting.

STEP 5) IMPLEMENTATION OF GOOD WEED CONTROL AND FERTILIZER PROGRAM AFTER PLANTING

Weedmaster (2,4-D + dicamba) will control seedlings of many sedges and broadleaf weeds in vegetatively planted stargrass and bermudagrass. Spray newly planted fields of those species with Weedmaster at 2 pt/A, 7 days after planting. Banvel (dicamba) herbicide should be applied to control sedges and broadleaf weeds in newly planted limpograss. Fertilize establishing grasses 7 days after planting with 300 lb/A 10-10-10 (N-P₂O₅-K₂O) and an additional 50 lb N/A at 35 days after planting.

This article is a summary of EDIS publication entitled “Five Basic Steps to Successful Perennial Pasture Grass Establishment from Vegetative Cuttings on South Florida Flatwoods”, which can be found at: <https://edis.ifas.ufl.edu/publication/AG125>. If you have any questions about establishing new pastures, please contact Joe Vendramini at jv@ufl.edu.



Figure 3. Haybuster used to plant vegetative material (photo by Bridget Stice)

Upcoming Event

See our website calendar for more information on upcoming event.

Aug. 20, 11:00 – 11:45 a.m. Ona Highlight ‘Florida Cattlemen’s Association: History, structure, and an activity report on state and federal legislation plus other news and helpful information’ with guest presenters Dale Carlton, President and Rick Moyer, President Elect.

Aug. 23, 9:30 a.m. – 3:00 p.m. - Wild Hog Management Workshop at the UF/IFAS Range Cattle REC, Ona. Lunch provided. Call Lacey McClenithan to register: 772-696-3587

UF/IFAS Range Cattle REC - 3401 Experiment Station Rd., Ona - <http://rcrec-ona.ifas.ufl.edu/>