

Five Basic Steps to Successful Perennial Pasture Grass Establishment From Vegetative Cuttings on South Florida Flatwoods¹

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Introduction

Perennial grasses (bahiagrass, limpograss, stargrass, bermudagrass, pangolagrass, digitgrass, rhodesgrass, and atra paspalum) provide the nutritional foundation for Florida's livestock industry. Bahiagrass occupies about 70% of Florida's 3.5 million acres of improved pasture, with the remaining 30% consisting of various acreage of other grasses. These perennial grasses are used basically for grazing, with limited amounts as hay and haylage. Bahiagrass, rhodesgrass and atra paspalum are planted from seed, but the others are vegetatively propagated.

It may be desirable to renovate an old pasture for a number of reasons: 1) Producers lose several thousand acres of bahiagrass pastures yearly from mole cricket infestation, overgrazing, prolonged drought, and instances of multiple freezing temperatures during late winter etc. 2) Observations at the Range Cattle REC indicate that relatively new pastures (1- to 5- years old) respond much better to

fertilization under dry spring conditions than old pastures. At Ona during the spring of 2001, a 1-, 2-, and 14- year old stand of Florona stargrass was fertilized with the same rate and on the same day. All three fields received the same rainfall, but by mid-April the 1- and 2- year old stands were 25 to 30" tall while the 14- year old stand was 8 to 10" tall. However, when summer rains came and adequate soil moisture was obtained, even the old pasture produced well.

Growers should consider reestablishing at least one pasture annually, especially pastures that have shown considerable deterioration. Reestablishment appears to be the best way to rejuvenate old pasture stands. This practice destroys the entire sod, allowing for a clean seedbed for reestablishment to new, desirable grasses. Mechanical chopping or aeration practices appear to have little effect on forage yield. Studies in Florida, Oklahoma, Mississippi, Tennessee, and Alabama have shown that various types of aeration machines did not increase forage yield.

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While replanting damaged bahiagrass pastures with alternative improved grasses such as stargrass, bermudagrass or limpograss is expensive and will normally cost \$250 to \$300/A, the investment should pay for itself with greater forage production and carrying capacity. The purpose of this report is to provide guidance on successful perennial grass establishment from vegetative cuttings.

Step 1) A clean, moist seedbed ready for planting.

One reason for preparing a seed bed is to control weeds. Preparing a clean seedbed (Figure 1) for perennial grass planting can take several forms. The preferred option is to seed a winter annual crop such as 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 at least 2 qt/A of Roundup® (2lb/A glyphosate) on the deteriorated pasture in early spring (March) when vegetation is about 6 inches tall, followed by another application of 2 qt/A 3 days later. 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.



Figure 1. A clean, moist seedbed ready for planting.

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/A of a 20-10-20 (P_2O_5 - K_2O) analysis fertilizer in March to increase topgrowth. b) Two weeks before cutting plant material, apply 50 lb N/A to initiate growth of shoots at the base of each leaf node (Figure 2). 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 13 to 15 planted acres.



Figure 2. Preconditioned planting material with new tillers (shoots).

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 cuttings (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.

Step 4) Adoption of good planting techniques

Preconditioned grass material must be cut and baled fresh within 5 minutes (Figure 3).

Material must be loosened and uniformly spread on a prepared seedbed (1500 lb/A) (Figure 4) the same day as baled, and followed within 15 minutes by



Figure 3. Cutting, baling and loading clean, preconditioned planting material at the same time.



Figure 4. Using a sprigger to uniformly distribute planting material on seedbed.

disking or crimping material into the soil with a crimper machine also called a "pizza cutter" (Figure 5).



Figure 5. 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.

Finally, the land should be rolled firmly in two directions immediately after disking or crimping material into the soil. The objective of step 4 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 for two to four days after planting.

Step 5) Implementaion of good weed control and fertilizer program after planting

Weedmaster will control seedlings of many sedges and broadleaf weeds in vegetatively planted stargrass, bermuda grass, and pangolagrass. Spray newly planted fields of those species with Weedmaster® at 1 lb/A, 7 days after planting. Young limpograss shoots are **killed** by Weedmaster™®; hence, 0.75 lb/A of Banvel™® herbicide should be applied to control sedges and broadleaf weeds in newly planted limpograss. Fertilize establishing grasses 7 days after planting with about 350lb/A 10-10-10 (N-P₂O₅-K₂O) and an additional 50 lb N/A at 35 days after planting.

The steps outlined allow new stargrass and bermudagrass fields to be grazed or harvested for hay within 60 to 70 days after planting (Figure 6). This will ensure long-term, clean, pure fields if managed properly thereafter.



Figure 6. Newly established Florakirk bermudagrass pasture 51 days after planting.

Summary

1) Prepare a clean seed bed

2) Precondition clean, pure planting

material by:

a) Applying 400 lb/A of a 20-10-20
(N-P₂O₅-K₂O) fertilizer 90 days
before harvest

b) Applying 50 lb N/A at 15 days before
harvest

3) Plant in early July to coincide with good
rainfall or after adequate rainfall.

4) Practice good planting techniques by:

a) Cutting and baling planting material
within 5 minutes.

b) Uniformly spreading 1500 lb planting
material/A.

c) Crimping or disking-in plant material
within 15 minutes after spreading
on clean seed bed.

d) Rolling land firmly in two directions
immediately after crimping or disking.

4) Adopt good weed control and fertilization

programs by:

a) Applying Weedmaster® (1 lb/A)
on bermudagrass, stargrass and
pangolagrass or Banvel® (0.75 lb/A)
on limpograss 7 days after planting.

b) Applying 350 lb/A of a 10-10-10
(N-P₂O₅-K₂O) fertilizer 7 days after
planting.

c) Applying 50 lb N/A at 35 days after
planting.