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ENH-03

Establishing Your Florida Lawn[1]

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The two primary methods of establishing turfgrass are seed and vegetative propagation. Vegetative propagation includes sodding, sprigging and plugging. Although propagating vegetatively is labor-intensive, all warm-season grasses can be planted by this method. Seeding is usually the easiest and most economical method of planting grasses, but not all warm-season grasses can establish from seed. For example, St. Augustinegrass seed is rarely found. Seed establishment also requires a longer period of time to achieve complete grass cover. Tables 1 and 2 show recommended planting rates for each turfgrass species.

Regardless of the method of planting, it is essential that a proper seedbed be prepared before planting. A healthy, attractive, long-lived lawn can be established only if you select high quality seed or planting material and select turfgrasses that are well adapted to the soil and climate. Refer to ENH2, "Preparing to Plant a Florida Lawn" for instructions on site preparation and grass planting.

Seeding

Seeding is the easiest and most economical way to establish a lawn. Success depends on seed quality, proper seeding time, rate, and method of seeding.

Seed Quality

In order to successfully establish a lawn from seed, top quality seed must be used. Federal and state laws require that each container of seed have a tag listing turfgrass species and cultivar, purity, percent germination and weed seed content. Purity tells the amount (as a percentage) of the desired seed and any other seed and inert matter. Percent germination tells the amount of seed expected to germinate under optimum conditions. The quantity of weed seeds is also listed. Read the tag thoroughly to be sure you are purchasing good quality seed. Try to purchase seed that has a purity of 90% or higher and a germination of 85% or higher. Always select the best quality seed of the cultivar you wish to plant. Seed with poor germination (<50%) and poor purity (<80%) are sometimes used to save money, but usually result in poor establishment and subsequent weed invasion. Figure 1 is an example of a seed label.

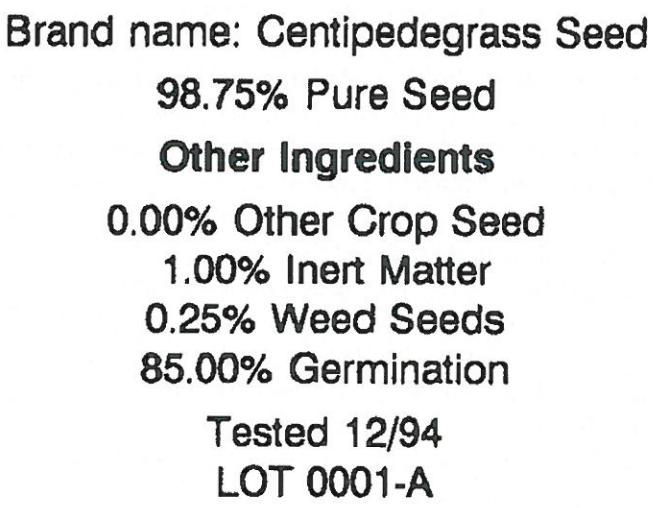

Figure 1. Seed Label

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Seeding Time and Rate

Year round planting is commonplace in Florida, and good quality lawns can be produced; however, the best time to seed warm-season grass is during the spring and summer months. This is the time when the grass will grow the quickest, and, in many parts of Florida, it allows for the grass to establish before cold weather.

In south Florida, year-round planting may produce a good quality lawn. In north Florida, young seedling grasses may be winter-killed if they are planted too late in the fall. Spring and summer seeding also takes advantage of Florida's rainy season and may greatly reduce irrigation requirements.

Seeding rates are shown in Table 1. Rates vary with species and cultivar of grass. The seeding rates suggested will give adequate coverage and produce a mature lawn with good post-planting care. Rates vary from 4 ounces per 1000 square feet for centipedegrass, which has a very small seed, to 10 pounds per 1000 square feet for bahiagrass, which has a large seed. Seeding rates can be reduced, but the trade-off is a more open turf area subject to weed invasion and erosion. Many seeding methods are used, ranging from planting by hand to the use of mechanical equipment for large turf areas. No matter what method you use, it's important to distribute seeds evenly to keep the lawn uniform. The seedbed should be moist, well prepared, and leveled. Rake the entire area with a heavy garden rake to produce furrows into which the seeds are planted. Seed may be applied mechanically either with a drop-type or rotary spreader (Figure 2). Mechanical seeders provide a more uniform distribution of seed than hand seeding (Figure 3). For best distribution of seed, apply one-half the required amount in one direction and apply the remainder at right angles to the first seeding (Figure 4). When sowing very small seed like centipedegrass and bermudagrass, you will find the seed is more easily and uniformly applied if you mix it with sand, top soil, or another convenient carrier that adds bulk to the spreader.

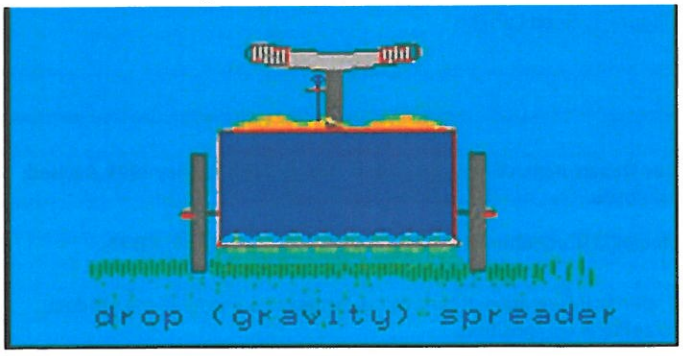

Figure 2. Drop Spreader

Figure 3. Drop Spreader

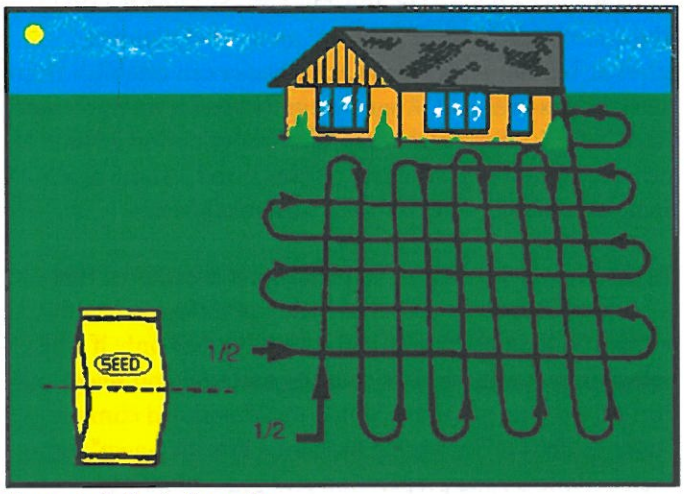

Figure 4. Path of a Spreader

After sowing, cover the seed lightly by working it into the soil with a rake. Ideally, seed should be topdressed with 1/4 to 1/2 inch of soil, but this may not be practical for most home lawns. In the absence of topdressing, seeds can be covered reasonably well by raking. If the seedbed was furrowed before seeding, then raking or dragging with a board will work the seed into the furrows and adequately cover it. Roll the seeded area with a lightweight roller to firm up the soil and to ensure good contact between seed and soil. The area should then be mulched with weed-free grass, hay, or straw, so that 50 to 75% of the bare ground is protected (Figure 5). Mulching helps conserve soil moisture, moderates soil temperature, and prevents erosion of topsoil and washing of seed. As a general rule, 1 bale of hay will cover approximately 1000 square feet.

Figure 5. Mulching

Proper watering is the most critical step in establishing turfgrasses from seed. The soil must be kept continuously moist but not excessively wet until seeds have germinated. Supplying water two or three times a day in small quantities for approximately 2 weeks will ensure adequate moisture for germination. If the surface of the soil is allowed to dry out at any time after the seeds have begun to swell and before roots have developed, many of the seedlings will die. *Improper watering is the most common cause of seeding failure.* Initial watering should be from a fine spray if possible, or from sprinklers with a low precipitation rate. Coarse spray and high water pressure or high precipitation rates will wash the soil and uncover buried seeds. Avoid overwatering and saturating the soil. This can cause the seeds to float, and increases the incidence of disease that can kill the seedling plants. As the seedlings mature and root systems develop, the number of waterings can decrease, but the volume should increase so that the entire root zone is wetted, not just the soil surface. If irrigation water is not available, avoid planting during dry months or times of drought.

Vegetative Planting

Vegetative planting is simply transplanting large or small pieces of grass. Solid sodding covers the entire seedbed with vegetation. Plugging or sprigging refers to planting of pieces of sod or individual stems or runners called stolons or rhizomes.

Sod

Sodding is more expensive than sprigging or plugging but it produces a so-called "instant lawn" (Figure 6). Without proper site preparation and post-installation care, however, the sod can die almost as easily as any other newly planted area.

Figure 6. Cracks in Sod

Before buying sod, inspect it carefully to guarantee the absence of visible weeds, insects, or stressed areas. Sod should be planted as quickly as possible after delivery, but if there are delays, store the sod in a cool, shady place until ready to plant. Sod life on pallets during summer is less than 48 hours. The area to be planted should be properly prepared (e.g., tilled and raked smooth) prior to sod delivery and should be moistened at the time of laying sod. Sod pieces should be fitted together as tightly as possible, but the sod should not be stretched to fit an area (Figure 7). If cracks are evident between pieces, they should be filled with cut up pieces of sod. Tamp or roll the sod to remove air pockets and ensure good soil contact. Make sure the roots have good contact with the underlying soil so that it does not dry out during establishment.

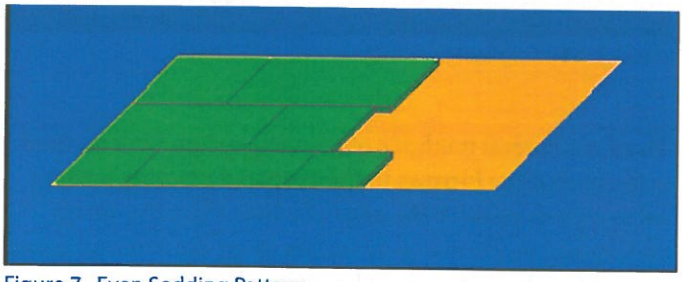

Figure 7. Even Sodding Pattern

Keep the soil moist for the first 7 days after planting with brief spritzes of water 2-3 times during the day. Sodding is expensive, but is recommended where immediate cover is desired for aesthetics or prevention of soil erosion.

Sprigs

Sprigging is the cheapest vegetative planting method. A sprig is an individual stem or piece of stem of grass with at least one node (joint), which has the potential to develop into a grass plant (Figure 8). There is no adhering soil on a sprig.

Figure 8. Sprigs

Sprigging is simply the planting of individual grass stems at spaced intervals (Figure 9). A suitable sprig should have two to four nodes from which roots can develop. Sprigs can be bought by the bushel, but more commonly sod is used and cut or pulled apart into sprigs.

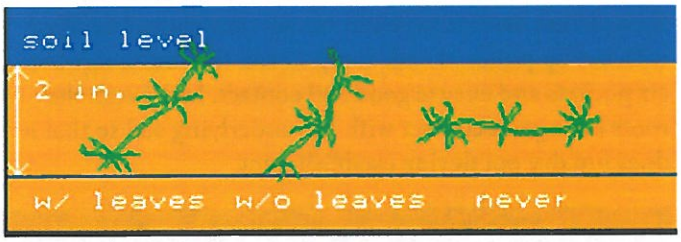

Figure 9. Planting Sprigs

There are several methods of planting sprigs. One method is to cut shallow furrows in the prepared planting area by using a push-plow or the edge of a hoe. Place the sprigs end-to-end or every 6 to 12 inches along the row and cover a part of each sprig with soil and firm by rolling or stepping on the furrow. The closer together the sprigs are planted, the faster the grass will cover the soil. Rows should be placed no more than 6 to 8 inches apart. A second method is to place the sprigs on the soil surface at the desired interval end-to-end, about six inches apart, and then press one end of the sprig into the soil with a notched stick or blunt piece of metal like a dull shovel. A portion of the sprig should be left above ground exposed to light. Each sprig should have some leaves, but a node will do if the stolon has no leaves. Regardless of the planting method, each sprig should be tamped or rolled firmly into the soil. This will help keep the sprigs from drying out and dying. As with seeding, soil must be kept continually moist—not wet—until adequate rooting has occurred. Watering lightly once or twice daily will be required for several weeks after planting. Mulching can also be used in vegetative planting for moisture conservation and erosion control.

Another method of sprigging, which is used where rapid cover is needed, is stolonizing or broadcast sprigging. The sprigs are prepared by mechanical shredding or hand tearing of sod into Establishing Your Florida Lawn 5 individual sprigs, or are purchased by the bushel (most common with bermudagrasses). The material is broadcast, like a mulch, over the area by hand. Sprigs are then cut into the soil with a light disc or covered with 1/2 inch of soil topdressing, rolled, and watered. This method provides very fast coverage. Since the sprigs are planted at a shallow depth, they are very susceptible to drying out. Light, frequent waterings are necessary until roots become well established. This is the method often used to plant bermudagrass golf greens and fairways.

Plugs

Plugging is the planting of 2- to 4-inch circular or block-shaped pieces of sod at regular intervals (Figure 10). Three to ten times as much planting material is necessary for plugging as sprigging (). Several turfgrasses are currently available commercially as plugs in trays. These commercial plugs usually have well-developed root systems and are treated as other plugs described in Table 2.

Figure 10. Plugs

Plugs can also be cut from sod pieces with a shovel, axe, or machete. The plugs are then placed in corresponding-sized holes made in the soil. These should be planted on 6- to 12-inch centers (Figure 11). Wider spacing prolongs the establishment phase. Plugs will grow in more slowly than sprigs, but they are less susceptible to dessication. Mulching will help improve moisture retention and prevent erosion of the soil between the plugs.

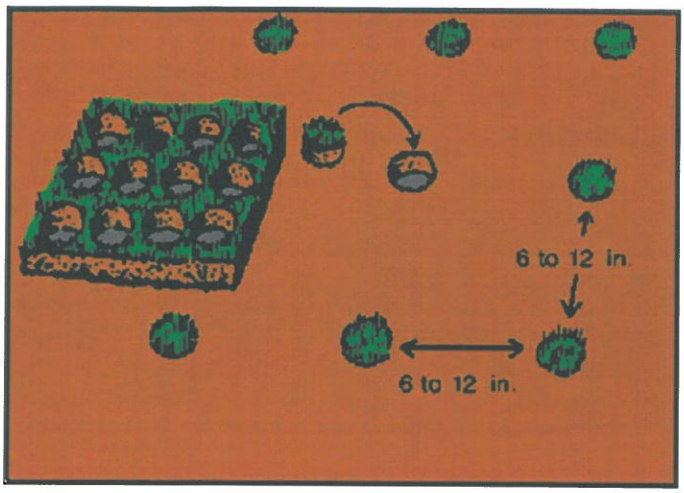

Figure 11. Square Plugs

Post-Planting Care

As previously mentioned, proper water management after planting is crucial. For seeded areas, keep the seedbed continuously moist with light frequent sprinklings several times daily. Do not flood the seedbed or apply water in a hard stream, as this can cause seed movement and soil erosion. As the seedlings or planting material take root and grow, decrease watering frequency and increase the amount applied each time (Figure 12).

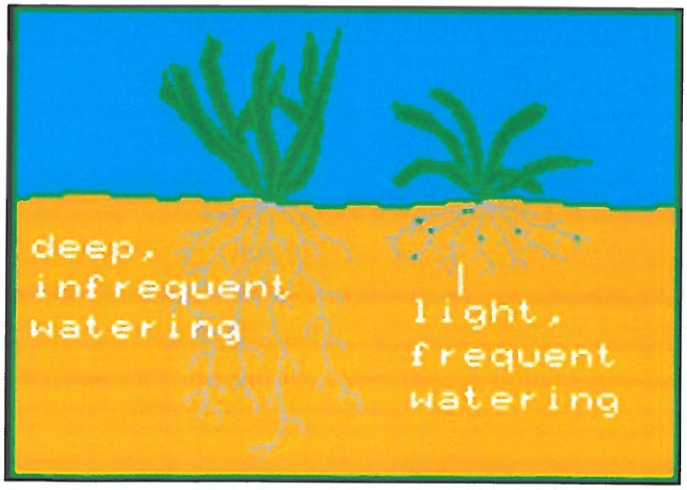

Figure 12. Watering Frequency

Fertilizing Newly Planted Turf

Newly planted grass, whether it has been established by seed, sprigs, or plugs, has less ability to take up nutrients due to lack of a deep root system. Research on fertilization of newly sodded grass indicates that a high percentage of the nitrogen can leach through the soil if applied in the first 30 days. For seeded, plugged, or sprigged grass, wait until there is a fairly uniform cover (the length of time to achieve this will vary based on time of year, environmental conditions, and location in state) before fertilizing. Then apply a complete (NPK) fertilizer with nitrogen in a slow-release form at a rate of 1 lb N per 1,000 square feet. This should be at least 30-60 days after seeding. For information on how to properly apply this amount of fertilizer, refer to ENH962, "Figuring out Fertilizer for the Home Lawn," http://edis.ifas.ufl.edu/ep221.

For sodded grass, application of fertilizer should again wait at least 30 days after planting to allow roots to establish to a point where they are able to take up the fertilizer. Most sod has received fertilizer application prior to harvest and will generally have ample levels of needed nutrients in the plant tissue.

Mowing

Begin mowing as soon as the grass roots have pegged down and the grass will no longer "lift" when pulled on at the edges. Use a mower with a sharp blade. Do not mow when the grass is wet. If clippings are heavy enough to shade the grass, catch them or rake and remove them. Otherwise, clippings should be left on the ground.

Newly planted areas often become infested with weeds. Proper mowing height and frequency are the best method of controlling many weeds in newly established lawns. Remaining weeds may be controlled with herbicides or removed by hand. *Do not apply herbicides until the lawn has been mowed at least three times.* Refer to "Weed Management in Home Lawns," ENH884 (http://edis.ifas.ufl.edu/ep141), for the latest herbicide recommendations.

Renovation

Prior to renovating an established lawn, ask these questions:

- were improper management practices the cause of the need for renovation? If so, then these practices should be reviewed and adjusted
- will another turf species replace the current grass?

- is over 50% of the present lawn in need of renovation? Are there adequate time and resources available for renovation and subsequent maintenance?

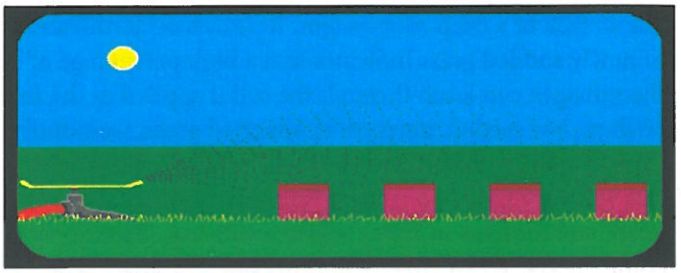

Figure 15. Increase Mowing Height

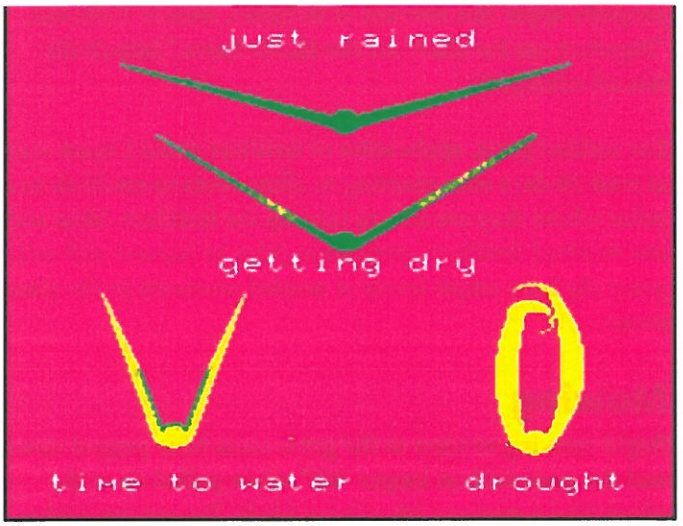

Figure 16. When to Water

If an area is to be completely replanted, and if over 50% of plants currently present are weeds, or if the turf species is changed, the areas should be treated with a nonselective herbicide, such as glyphosate (Roundup). It will typically require more than one application of Roundup to completely remove existing vegetation. A second application should be made approximately 14 days after the first. If removing bermudagrass, a third application may be advisable. This area should then be dethatched using a verticutter, power rake, or slicer/groover. A soil test should be done at this time to determine fertilization requirements or necessary pH adjustments. Depending on soil test results, starter fertilizer may be added. Any required irrigation should also be installed prior to planting. If establishing by seed, lightly rake sown seeds to encourage contact with soil. If the area is replanted by vegetative means, such as sprigs or sod, the glyphosate-treated turf should be removed with a sod cutter, the surface regraded, soil amendments and starter fertilizer added and then the grass may be planted. If the existing area does not need treatment with a nonselective herbicide, sprigs may be planted directly into the current turf. For more information on preparing soil for planting, please refer to ENH02, "Preparing to Plant a Florida Lawn," http://edis.ifas.ufl.edu/lh012.

Table 1. Seeding Rates for Florida Turfgrasses

Turfgrass	Quantity (lb/1000ft^2)
Bahiagrasses	7-10 (scarified)
Bermudagrass (common)	2 (hulled)
	4 (unhulled)
Carpetgrass	2
Centipedegrass	0.25

Table 2. Spacing and Planting Material From Sod for Vegetative Planting (Non-Broadcast)

TURFGRASS	SPACING (inches)	AMOUNT OF SOD [(sq. ft.) per 1000 sq. ft.]
St. Augustinegrass		
2 inch plugs	12	30-50
Sprigs	12	10-15
Centipedegrass		
2 inch plugs	6	100-150
Sprigs	6	30-50
Zoysiagrass		
2 inch plugs	6	100-150
Sprigs	6	8-15
Bermudagrass		
2 inch plugs	12	30-50
Sprigs	12	2-5

*Based on estimates of 1 sq. ft. of sod = 80 linear ft. of sprigs; 1 sq. yd. of sod = 1 bushel of sprigs; and 1 sq. yd. of sod yields 324 two-inch plugs. The numbers in the column refer to the square feet of solid sod from which either 2-inch plugs or sprigs can be obtained.

**Broadcast sprigging or stolonizing is used for planting large areas such as golf courses, football fields, etc. Usually 5 to 10 bushels of sprigs are required per 1000 sq. ft. (approximately 200 to 400 bushels/acre) for best results.