Establishing Your Florida Lawn

L. E. Trenholm

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 not currently available. Seed establishment also requires a longer period of time to have complete grass cover.

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. Table 1 shows recommended seeding rates for the species that can be planted by seed.

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.

Seeding Time and Rate

Year round planting is commonplace in most parts of 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 most quickly 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...
and before roots have developed, many of the seedlings dry out at any time after the seeds have begun to swell for germination. If the surface of the soil is allowed to be moist but not excessively wet until seeds have germinated. 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 frequency of waterings is decreased, 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. Table 2 shows recommended planting rates for each turfgrass species.

Sod

Sodding is more expensive than sprigging or plugging but it produces a so-called “instant lawn” (Figure 1). Without proper site preparation and post-installation care, however, the sod can die almost as easily as any other newly planted area. Before buying sod, inspect it carefully to ensure 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. If cracks are evident between pieces, they should be filled with cut up pieces of sod. Lay the sod in a staggered brick pattern so that the seams are offset between sod pieces. 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. Keep the grass 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.
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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 2). There is no adhering soil on a sprig. Sprigging is simply the planting of individual grass stems at spaced intervals. A suitable sprig should have two to four nodes from which roots can develop (Figure 3). Sprigs can be bought by the bushel, but more commonly sod is used and cut or pulled apart into sprigs.

There are several methods of planting sprigs. One 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.

Figure 1. Sodding produces an instant ground cover. Lay sod pieces in a staggered pattern so that the seams are offset between pieces. Credits: R. Black, UF/IFAS

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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

Figure 2. An individual sprig with roots and shoot. Credits: L. Trenholm, UF/IFAS

Figure 3. A stolon (above ground stem) with multiple sprigs. Credits: L. Trenholm, UF/IFAS

Figure 4. Sprigs planted in soil. Credits: L. Trenholm, UF/IFAS
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 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 5). Over time, the above ground stems grow new root and shoot systems and fill in the bare spots between plugs. 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 5. Plugs planted in ground. The above ground stems will eventually fill in the bare areas. Credits: L. Trenholm, UF/IFAS](image)

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. 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.

**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.

**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. 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. The first fertilizer application should be at a rate of 1 lb N per 1,000 square feet.

**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.

**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 to ensure success of the new lawn.
- Is the existing grass the best choice for the site conditions? If so, will you replace with the same grass species? If not, what species will replace the existing lawn?
- Is over 50% of the present lawn in need of renovation? Are there adequate time and resources available for renovation and subsequent maintenance?
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 glyphosate to completely remove existing vegetation. A second application should be made approximately 14 days after the first. If removing bermudagrass, a third application is advisable. Remove as much of the dead vegetative material as possible to provide good soil contact for roots. A soil test should be done at this time to determine fertilization requirements or necessary pH adjustments. Any required irrigation should also be installed prior to planting. Any soil amendments or organic matter should be tilled into the soil prior to planting grass.
Table 1. Seeding rates for Florida turfgrasses.

<table>
<thead>
<tr>
<th>Turfgrass Species</th>
<th>Seed Quantity (lbs per 1,000 square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahiagrass</td>
<td>5–10</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>2–4</td>
</tr>
<tr>
<td>Centipedegrass</td>
<td>0.25</td>
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</tbody>
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Table 2. Spacing and planting material from sod for vegetative planting (non-broadcast).

<table>
<thead>
<tr>
<th>Turfgrass</th>
<th>Spacing (inches)</th>
<th>Amount of Sod ([sq. ft.) per 1000 sq. ft.]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>St. Augustinegrass</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 inch plugs</td>
<td>12</td>
<td>30–50</td>
</tr>
<tr>
<td>Sprigs</td>
<td>12</td>
<td>10–15</td>
</tr>
<tr>
<td><strong>Centipedegrass</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 inch plugs</td>
<td>6</td>
<td>100–150</td>
</tr>
<tr>
<td>Sprigs</td>
<td>6</td>
<td>30–50</td>
</tr>
<tr>
<td><strong>Zoysiaagrass</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 inch plugs</td>
<td>6</td>
<td>100–150</td>
</tr>
<tr>
<td>Sprigs</td>
<td>6</td>
<td>8–15</td>
</tr>
<tr>
<td><strong>Bermudagrass</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 inch plugs</td>
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</tr>
<tr>
<td>Sprigs</td>
<td>12</td>
<td>2–5</td>
</tr>
</tbody>
</table>

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.