

LOUISIANA HOME LAWN SERIES

A guide to maintaining a healthy Louisiana lawn



Plug Establishment

Plug Basics

Plug Establishment is a vegetative method for propagating laterally growing turfgrasses. Plugs are small sections of sod that include both shoots and roots. Plugs are planted in a manner similar to the planting of annual flower plugs. Over time the turfgrass will spread laterally through rhizomes or stolons to cover an area. Turfgrass species, plug spacing, fertility and the environment are factors that will affect the speed of establishment. Plugs are typically planted for small areas rather than for large areas. Plugs can also be an economical method to establish small areas within an existing lawn that has suffered damage and requires turfgrass to be reestablished. Plugs can be established anytime during the growing season. However, planting plugs earlier in the growing season allows more time for establishment before dormancy.

January	February	March	April	May	June	July	August	September	October	November	December
Turfgrass dormant		Turfgrass active growth season								Turfgrass dormant	

Site Preparation

STEP 1: Evaluate and determine the soil characteristics, drainage pattern and any other existing conditions (e.g., shade) that will affect turfgrass establishment and growth. This evaluation will help you determine the proper turfgrass species for the site and identify other issues that may need to be corrected before establishment.

STEP 2: Collect a soil sample and submit for fertility analysis several weeks prior to beginning establishment. For larger areas or an area with differing soil types, more than one soil sample may be necessary. For information on how to collect a soil sample, see publication 3624-PPP.

STEP 3: Destroy any existing vegetation. Destroying vegetation can be accomplished through mechanical methods, solarization or nonselective herbicide application. The method chosen will determine the duration needed before implementing Step 4.

STEP 4: Once the existing vegetation is destroyed, till the soil to a depth of 4 to 6 inches and remove dead vegetation and debris. Tilling aerates the soil and can allow slight contouring of the area for better surface drainage. If adjustments in soil pH or fertility are recommended based on soil test results, then the required amendments or fertilizer can be incorporated.

STEP 5: Rake the area to remove any remaining debris and shape the area to allow for drainage. In-ground drainage and/or an irrigation system can be installed at this time if needed.

STEP 6: Establish the final grade and lightly compact the soil surface with a roller so that it will hold the desired contour.

STEP 7: Select the proper turfgrass species. In Louisiana, centipedegrass (publication 3624-QQ), St. Augustinegrass (publication 3624-AA), zoysia (publication 3624-TT) and bermudagrass (publication 3624-OO) are able to be established from plugs.

Considerations for Purchasing Plugs

Turfgrass plugs can be purchased from a variety of sources. Be prepared to purchase an additional 5% to 10% of the total area calculated for plugging. Make sure to purchase turfgrass species that grow laterally through rhizomes and/or stolons. Inspect plugs to make sure they are properly rooted in the media prior to planting. Plugs can also be collected from existing turfgrass in the lawn and planted into small areas that need to be reestablished. If plugs are collected from the surrounding lawn, remember to fill in the holes where the plug was collected with soil.

Turfgrass Species	Recommended Plant Spacing
Bermudagrass	6 - 12 inches
Centipedegrass	6 - 12 inches
St. Augustinegrass	12 - 24 inches
Zoysiagrass	6 - 12 inches

Calculating the Number of Plugs Required to Establish an Area

The number of plugs necessary to establish an area can be calculated following these steps:

STEP 1: Determine the area (square feet) that is to be established using plugs.

STEP 2: Determine the plant spacing in feet (12 inches = 1 foot) that will be practiced.

STEP 3: Calculate the number of plugs needed per square foot of area.

Formula:
$$\frac{1 \text{ plug}}{\text{Plant spacing (ft.)} \times \text{Plant spacing (ft.)}} = \frac{X}{1 \text{ square foot}}$$

Example: Centipedegrass plugs established on 6-inch centers

$$\frac{1 \text{ plug}}{0.5 \text{ ft.} \times 0.5 \text{ ft.}} = \frac{X}{1 \text{ square foot}}$$

Cross multiply to get $1 = 0.25x$

$$x = 1 \div 0.25 \text{ where } x = 4 \text{ plugs per square foot}$$

STEP 4: Calculate the total number of plugs required for the area

Formula: Establishment area $\div$ Answer from STEP 3 = Required number of plugs

Example: 500 square foot area to be established

$$500 \text{ square feet} \div 4 \text{ plugs per square foot} = 125 \text{ plugs}$$

125 plugs needed to establish the area when planted on 6-inch centers

Planting Plugs

Make sure to properly plant plugs to maximize soil-plant contact. Arrange plugs according to set spacing. Increasing the plant spacing will delay the period of establishment, while decreasing the plant spacing distance will accelerate establishment. When planting plugs, make sure the plugs are even with the ground level. Soil may need to be topdressed in the planted area to achieve an even surface. Immediately following planting, irrigate so that the soil is moist. Do not irrigate to the point of surface runoff. Newly planted plugs are susceptible to desiccation; therefore, irrigation is critical during the grow-in period.

Post Installation Care

Irrigation: Irrigation frequency will depend on environmental conditions and time of year. Plugs need to be irrigated routinely for the first 10 to 14 days. Irrigate so that the plugs and surrounding soil are both moist. After 14 days irrigation should be applied less frequently, with longer duration between irrigations to encourage deeper rooting by the turfgrass. Be sure not to irrigate to a point of surface runoff.

Nitrogen Fertilization: Fertilize with up to 0.5 pound of nitrogen per 1,000 square feet (ft²) when the turfgrass has rooted into the soil. Roots may appear within 30 to 60 days depending on environmental conditions. Subsequent nitrogen fertilization may be necessary during grow-in. Never apply above 1 pound of nitrogen per 1,000 ft² per application. Follow soil test recommendations for proper fertility if fertilizers were not incorporated during tilling in the preparation process.

Mowing and Traffic: During the establishment period it is best to limit traffic across the area to prevent turfgrass stress and surface disruption. Mowing should be initiated once the turfgrass begins to actively grow and the turfgrass is well rooted into the soil. Mowing at the proper height can encourage lateral turfgrass growth. Make sure the soil is not saturated so that a mower does not rut or compact the soil. Never remove more than one-third of the leaf blade at one mowing. Mowing at the appropriate height is key to having a healthy turfgrass, prevent scalping and reduce weed encroachment.

Turfgrass	Mowing Height	Nitrogen Rate (per 1000 ft ² per year)
Bermudagrass	1 - 2 inches	Up to 3 pounds
Centipedegrass	1 - 2.5 inches	Up to 2 pounds
St. Augustinegrass	2.5 - 3 inches	Up to 3 pounds
Zoysiagrass	1 - 2.5 inches	Up to 2 pounds

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