

# FACT SHEET

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## LAWN ESTABLISHMENT

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A lawn, the single most important feature of a well-landscaped home, is often the first improvement a homeowner plans when moving into a new home. Although a lawn adds to the beauty of a home, its primary purpose is functional rather than aesthetic. A lawn prevents soil erosion, reduces runoff, lowers temperatures around the house, reduces glare and dust and helps muffle noise. In addition, it provides inexpensive, non-abrasive and attractive recreational areas.

Proper selection and establishment of turfgrasses will help the homeowner maintain an attractive and functional lawn and keep the cost of maintenance down.

Three distinct steps are necessary in the establishment of a new lawn. First is preparation of the seedbed which involves grading, providing drainage, soil modification and fertilization. Second is the establishment of the grass which involves seeding, sprigging or sodding. And, third is the care and maintenance of the young grass during the first 2 to 4 weeks after planting.

### Preparing the Seedbed

As the foundation is the strength of a building, the seedbed is the support of a lawn. The seedbed refers to the few surface inches of soil that are modified prior to planting. Poor soil conditions, like a faulty foundation, result in continuous lawn maintenance problems for homeowners. To prepare a seedbed, first remove all debris such as large stones, wood or other trash that may have been left after construction. Next, the nature of the soil may need to be altered. A sandy loam soil high in organic matter is best for turf. If the original surface soil is a heavy clay or a fine sand, add

organic matter to improve soil structure. This organic material can be peat, compost, decomposed gin trash, bark or sawdust (preferably hardwood), leaf mold or similar material. Thoroughly mix 1 inch of organic matter with the top 3 to 4 inches of soil to produce a uniform seedbed. This mixing can be done by repeated cultivation with a garden tiller or with a tractor and rotovator.

When adding undecomposed organic matter to the soil, also add 3 pounds of ammonium nitrate or 5 pounds of ammonium sulfate per 1,000 sq. ft. to aid decomposition of the organic material.

In areas of the state with acid soils, add ground agricultural limestone at a rate of 50 to 100 pounds per 1,000 sq. ft. of surface. Limestone, like the organic materials, should be rototilled into the top 3 to 4 inches of soil.

### Adding Fertilizer

Texas soils are deficient in the major nutrients required for turf. East Texas soils normally are deficient in nitrogen, phosphorus, potassium and lime. In the blackland areas of the state, nitrogen and phosphorus are not adequate for good turf development. Potassium in the soil may become deficient for turf growth when high amounts of nitrogen are used in areas not normally deficient in potassium.

If possible, base rates and combinations of fertilizer nutrients on the results of soil tests. In the absence of a soil test, apply a complete fertilizer to the surface of the seedbed. Apply a fertilizer with a 1-2-1 (10-20-10, 6-12-6) or 1-1-1 (8-8-8) ratio at a rate to supply 2 pounds of phosphorus per 1,000 square feet of lawn (see Table 1). On soils naturally high in potassium, use a fertilizer containing only nitrogen and phosphorus. See Table 1 for fertilizer equivalents and rates.

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TABLE 1. Percent Nutrients in Various Commercial Fertilizers and Recommended Rates of Application for Turf Establishment

Fertilizer Grade <sup>1</sup>	Ratio of plant food nutrients	Fertilizer Analysis (Percent <sup>2</sup> )			Amount to apply to provide 2 lb. phosphorus per 1,000 sq. ft.
		Elemental nitrogen	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
8-8-8	1-1-1	8	8	8	25
6-12-6	1-2-1	6	12	6	16
10-20-10	1-2-1	10	20	10	10
12-6-6	2-1-1	12	6	6	33
6-10-4	3-5-2	6	10	4	20
12-9-6	4-3-2	12	9	6	22
16-20-0	4-5-0	16	20	0	10

<sup>1</sup>Other fertilizer materials are available and can be used. The amount needed to supply 2 pounds of phosphorus per 1,000 square feet from any fertilizer can be calculated in the following manner: the phosphorus content of the fertilizer divided into 100 gives the amount of fertilizer needed to supply 1 pound of phosphorus. Thus, doubling the figure gives the amount required to supply 2 pounds of phosphorus per 1,000 square feet. For example: In the case of 8-8-8, 8 into 100 equals 12.5; thus 12.5 pounds of 8-8-8 are required to supply 1 pound of phosphorus; 25 pounds of 8-8-8 are required to supply 2 pounds of phosphorus per 1,000 square feet.

<sup>2</sup>Or pounds of nutrients per 100 pounds of fertilizer.

<sup>3</sup>Length times width of lawn equals square feet. For example, a lawn 50 feet long and 20 feet wide contains 1,000 square feet.

### Grading

Grade the seedbed to provide surface drainage away from the house, walks and driveways. A fall of 6 inches for every 40 to 50 surface feet is adequate for drainage, provided no pockets or depressions exist. In some cases, subsurface drainage systems may be needed to remove excess water from poorly drained sites.

If a considerable part of the lawn needs to be filled, use a loam or sandy loam soil. Repeated wetting of the filled site will help settle the soil.

Avoid terraces, if possible, because of the difficulty of establishing and maintaining grass on steep slopes. If a lot slopes steeply, build retaining walls rather than terraces. When trees are to remain in the lawn, grade the soil gradually away from the trunk. If a fill more than 2 or 3 inches above the existing surface surrounding a tree is required, build a retaining wall with drainage to prevent covering tree roots. The wall should be constructed at least 4 to 6 feet from the trunk.

The final step in seedbed preparation is raking the surface to remove large clods and stones. At the same time, fill depressions that have developed and level high spots. Walks and driveways should be flush with the final lawn surface. The site is now ready to be seeded, sprigged or sodded.

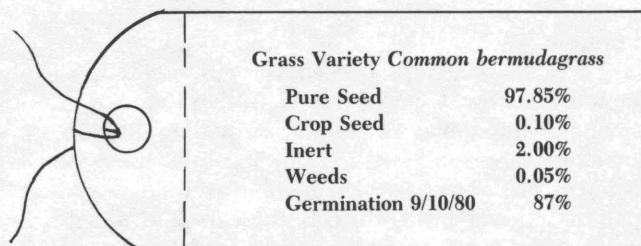
### Planting the Grass

Whether to seed, sprig or sod the lawn depends on the type of grass used and the rapidity of cover desired. Table 2 shows the type of planting material to be used, method of planting, quantities needed and best season to plant for each grass.

#### Seeding

Grass seed for lawns should have a high percent germination and purity. Information on germination and purity is required by state law to be on all seed

containers in lots over 10 pounds. Low-priced seed is often the most costly because it may have a low percent germination and purity. Purchase seed on the basis of percent "Pure Live Seed," which is the product of the percent purity and the percent germination. For example, common bermudagrass seed with 85 percent germination and 98 percent purity contains 83 percent "pure live seed." In contrast, common bermudagrass with only 80 percent germination and 85 percent purity contains only 68 percent "pure live seed."



Grass Variety <i>Common bermudagrass</i>	
Pure Seed	97.85%
Crop Seed	0.10%
Inert	2.00%
Weeds	0.05%
Germination 9/10/80	87%

Sample Seed Tag

Although seed can be sown by hand, it is better to use small seed distributors. Divide seed required for a specific area into two equal parts, one to be broadcast as you walk back and forth in a given direction, the second to be sown as you walk at right angles to the first seeding. This method provides uniform distribution of seed (See Fig. 1).

After seeding, water the area lightly and keep the surface moist until a satisfactory stand of grass appears. When seeding grasses with a creeping growth habit such as bermudagrass, carpetgrass or centipede, seedlings on 2 to 4 inch centers provide a satisfactory stand. The time required to develop a satisfactory

stand will vary from 10 to 14 days, depending on climatic conditions and grass variety.

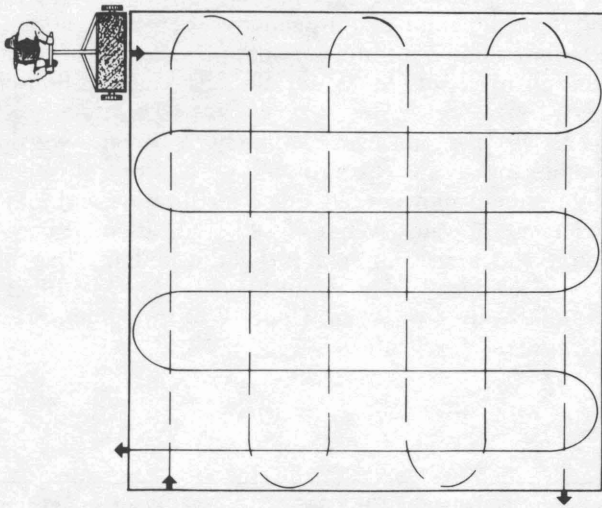


Figure 1. Proper distribution of seed.

### Sprigging or Plugging

Sprigging or plugging refers to the setting of stolons, runners, rhizomes or small sod blocks (2 to 4 inches square) in rows or by broadcasting on the soil surface. Stolons, runners or rhizomes broadcast over an area give a quicker and more uniform cover than sod blocks or plugs set in rows. However, broadcast sprigs usually require more attention during the first several weeks after planting.

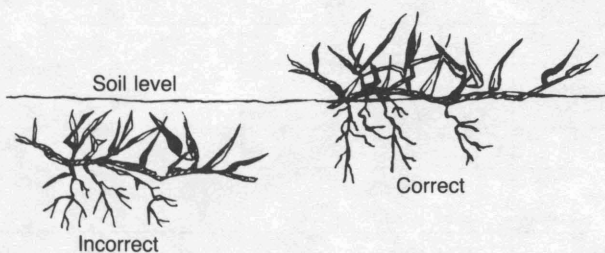


Figure 2. Do not cover sprigs too deeply; leave part of the sprig (or stolon) above the soil level.

Lawns should be sprigged in the spring, though they may be sprigged at any time during the growing season when adequate moisture is available. The proper distance between sod blocks or sprigs depends on grass species and how soon a cover is desired. St. Augustine grass plugs 2 to 4 inches in diameter, planted on 2-foot centers, should cover within 3 months if adequately watered and fertilized. Bermudagrass sprigs broadcast at 3 to 5 bushels per 1,000 square feet should cover within 2 months; zoysia may require an entire growing season. After sprigging bermudagrass or zoysia, cover the sprigs with a thin

layer of topsoil or mulch. Pack and roll sod blocks or sprigs firmly into the soil to leave a smooth surface for mowing.

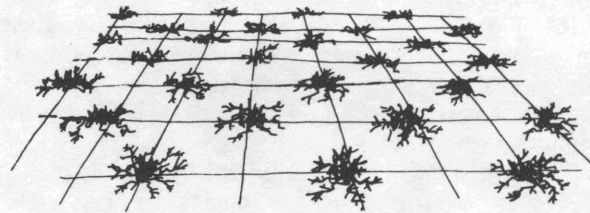


Figure 3. Stagger spacing of grass plugs to help control erosion.

### Sodding

Sodding is the laying of solid blocks of sod directly over a prepared seedbed. Sodding provides an instant lawn and overcomes many of the problems associated with starting a new lawn. Solid sodding a lawn eliminates weeds, soil erosion, mud, and, in many cases, the need for replanting. When sodding a lawn, lay sod blocks like brick on a smooth surface that has been firmed by rolling. The surface should be free of footprints, stones, depressions, and mounds. After the sod is laid, roll the sod lightly and keep it moist until it is well-rooted. Then, topdress with a sandy loam topsoil that is free of trash, stones and other debris to smooth the surface.

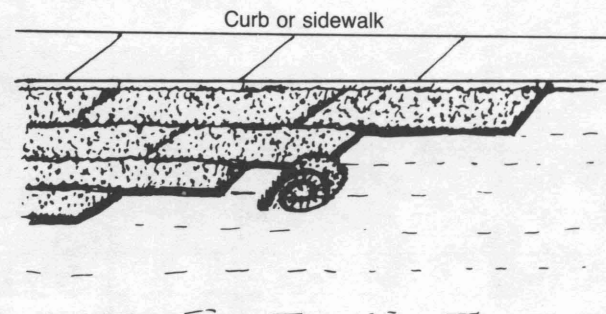


Figure 4. Lay sod slightly below the level of concrete curb or walks. Stagger sod strips or rolls to reduce erosion.

Purchase Texas certified sprigs or sod to insure that you get the variety of grass you request and the quality of sod you should plant. The Texas Department of Agriculture inspects certified sod fields to guarantee varietal purity and to maintain quality standards. Poor quality sod contains weeds and other grasses that delay development of a uniform lawn and increase maintenance costs. Paying a premium price for certified or high quality sod is less expensive in the long run than planting poor quality, but "cheaper" sod.

## Care after Establishment

Water newly-established turf areas regularly. Water lightly and frequently to prevent the surface from drying. As the young seedlings develop, or as the sprigs or sod begin to take root and spread, reduce the frequency of watering and increase the amount applied per watering. This permits the development of a deep root system and ultimately reduces the amount of water needed.

The time to mow will depend on the species planted. Mow newly turfed areas as soon as the grass is 1½ to 2 inches high. Clip lawns frequently enough to prevent removing more than half of the growth at any one mowing.

Fertilize newly planted turfgrasses once a month with a complete fertilizer, at a rate equivalent to 1 pound of nitrogen per 1,000 square feet. Follow soil

test recommendations, but in the absence of this information a 1-1-1 or 2-1-1 ratio fertilizer should be used. On sandy textured soils during grass establishment, supplement the complete fertilizer with an additional pound of nitrogen between applications. Use ammonium nitrate, ammonium sulfate or urea for the nitrogen source. Water after each application of fertilizer.

Newly planted lawns are likely to become weedy before the area is covered with grass. Control weeds by frequent mowing, adequate fertilization and judicious use of water. Where weed eradication is necessary, the safest method is hand weeding. Use of chemicals for weed control is discussed in MP-1062B *Suggestions for Weed Control With Chemicals-Landscape Horticulture*.

TABLE 2. Types of Planting Material, Methods, Rates and Times of Planting

Grass Species	Established from	Method of Planting	Quantity per 1,000 sq. ft.	Best Planting Season
Bermudagrass	Seed	Broadcast	½ to 1 lb.	Spring and early summer
	Sprigs	Sprig 6" apart in 12" rows or broadcast	5 to 10 sq. ft. of nursery sod	
	Sod	Solid-lay as bricks	Same as area to be sodded	
St. Augustine	Sod	Solid-lay as bricks	Same as area to be sodded	Spring and early summer
	2" sod blocks or runners	2" blocks on 12" centers; runners planted on 12" centers	Sod blocks: 30 sq. ft. of nursery sod Runners: 3 to 6 sq. ft. of nursery sod	
Buffalograss	Treated seed	Broadcast	½ to ¾ lb.	Spring
	2" sod blocks	On 1½ to 2 ft. centers	25 to 50 sq. ft. of nursery sod	
Centipede	Seed	Broadcast	½ to 1 lb.	Spring
	Shredded sod (sprigs) or 2" sod blocks	Sprig 6" apart in 12" rows	5 to 10 sq. ft. of nursery sod	Spring and early fall
Zoysia	Sprigs or 2" sod blocks	Sprig 2" apart in 6" rows in a clean seedbed	40 to 45 sq. ft. of nursery sod	Spring and early summer
Ryegrass	Seed	Broadcast	6 to 8 lb.	Sept. to Nov.
Tall fescue	Seed	Broadcast	6 to 8 lb.	Sept. to Nov.
Kentucky bluegrass	Seed	Broadcast	1½ to 2 lb.	Sept. to Nov.

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