

Buffalo Grass

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Native lawns in Texas often display the fine, curly, blue-green leaves of buffalograss, curly mesquite, grama and needlegrasses. Of these, buffalograss produces the most uniform and attractive turf.

Buffalograss, *Buchloe dactyloides*, is a perennial grass native to the Great Plains from Montana to Mexico. In Texas, it is commonly found from South Texas to the Texas Panhandle; but is rarely found on the sandy soils in the eastern part of the state or in the high rainfall areas of southeast Texas. It is one of the grasses that supported the great herds of buffalo that roamed the Great Plains. Buffalograss also provided the sod from which early settlers built their houses.

Buffalograss is, perhaps, our only truly native turfgrass. Its tolerance to prolonged droughts and to extreme temperatures together with its seed producing characteristics enables buffalograss to survive extreme environmental conditions. Overgrazing and, in the case of turf, over use or excessive traffic are the pressures that lead to the deterioration of a stand of buffalograss.

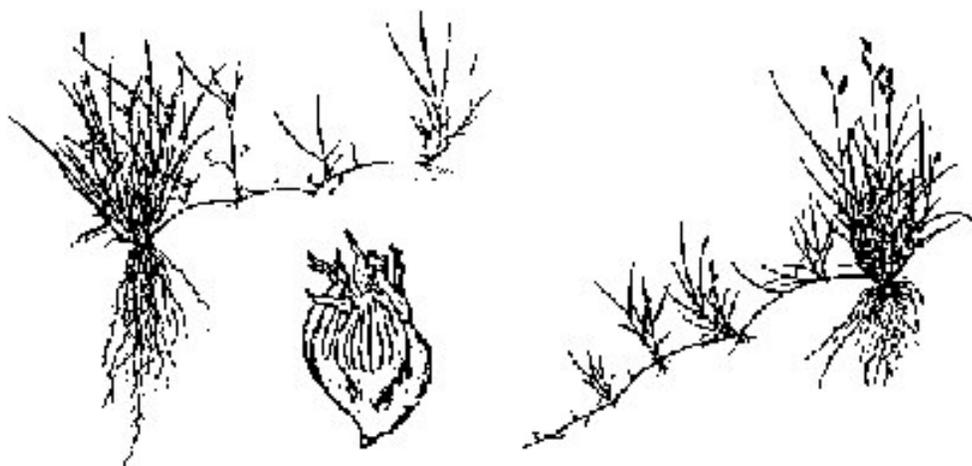
Buffalograss spreads by surface runners, or stolons, and seed. It forms a fine textured, relatively thin turf with a soft blue-green color. It does not possess underground stems, or rhizomes. Buffalograss is also destroyed quite readily by cultivation. For these reasons, it can be readily removed from flower beds and gardens.



Description. Buffalograss is a low growing, commonly only 8 to 10 inches high, warm season perennial grass. Individual leaf blades may reach 10 to 12 inches in length, but they fall over and give the turf a short appearance. Buffalograss has a stoloniferous growth habit, curly leaves, and both staminate and pistillate flowers. Staminate (male) plants have 2 to 3 flag-like, one-sided spikes on a seedstalk 4 to 6 inches high. Spikelets, usually 10, are 4 mm long in two rows on one side of the rachis.

Pistillate (female) plants appear very different from the staminate plants. Pistillate spikelets are in a short spike or head and included in the inflated sheaths of the upper leaves. The thickened rachis is woody and surrounded by the outer glumes. The glumes together with the lemma and palea form a bur-like enclosure for the mature seed.

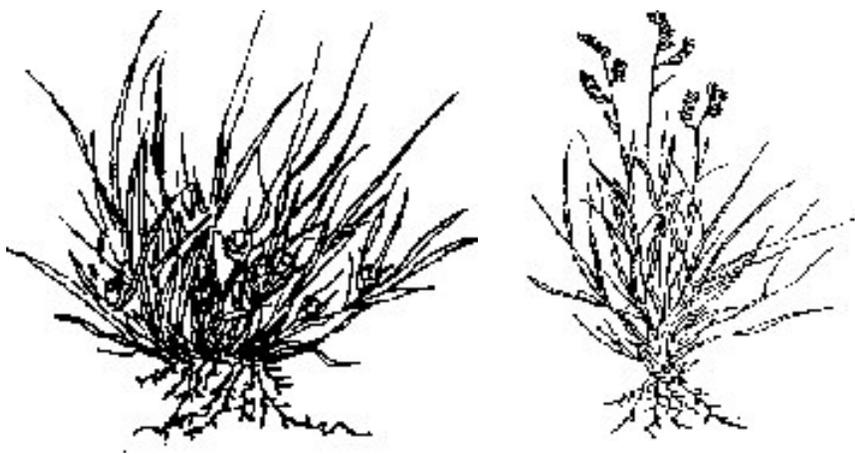
Both male and female plants have stolons from several inches to several feet in length, internodes 2 to 3 inches long, and nodes with tufts of short leaves. Plants often take root at the node and produce new shoots. Each plant propagates vegetatively its own kind, and only rarely are both male and female flowers produced on the same plant. Commonly each kind of plant is found in patches some distance apart.



Female Plant (left), male plant (right) bur or seed (insert)

As buffalograss and curly mesquite are both low growing, stoloniferous grasses with curly leaves, some difficulty may be encountered in

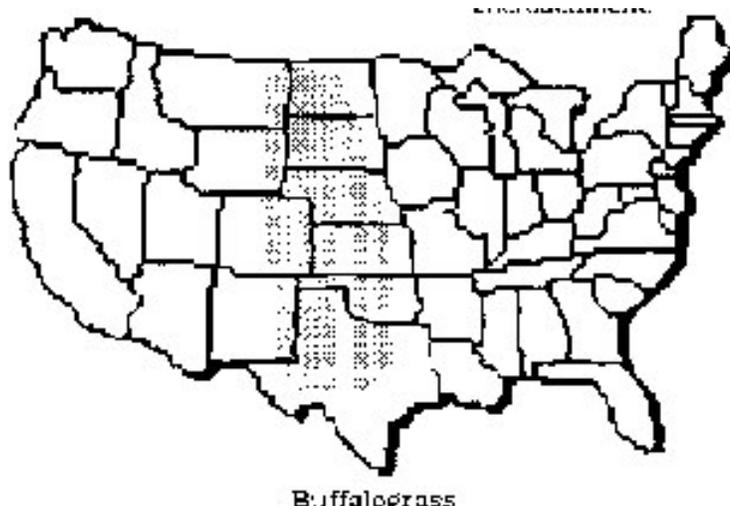
distinguishing them. If the grasses are not in flower, they can be identified by their nodes and internodes. Nodes of buffalograss are smooth, and those of curly mesquite are villous. Also, the internodes of buffalograss are quite short (less than 3 inches) while those of curly mesquite are quite long.



The production and utilization of buffalograss is hampered by poor germination of the seed, or bur. It has been suggested that poor germination is due to the mechanical restraint imposed on the embryo by the tough enclosing outer glumes. The fact that seed

extracted from the bur readily germinate is cited as evidence of inhibitor substances in the glumes that delay germination of the seed.

Adaptation and Use. Buffalograss is found throughout the Great Plains from Mexico to Montana. In Texas, buffalograss is commonly found from the south central region westward to El Paso and north to the High Plains and Rolling Plains. It favors the heavy clay soils in moderate to low rainfall areas. Buffalograss is rare in the sandy soils of east Texas and the high rainfall areas of southeast Texas.



When buffalograss is planted in high rainfall areas or when it is irrigated and fertilized, bermudagrass and other weedy grasses invade a stand of buffalograss. Buffalograss is best adapted to low rainfall areas (15 to 30 inches annually) or areas that receive thorough, but infrequent irrigation.

Buffalograss is not adapted to shaded sites or to sites that receive heavy traffic. Also, under intensive management bermudagrass and other more aggressive grasses tend to replace buffalograss in the lawn.

Roadsides, school grounds, parks, open lawn areas, golf course roughs and cemeteries are good sites for buffalograss in central, west and north Texas. Buffalograss is particularly well suited for sites to be planted to bluebonnets and other Texas wildflowers since it produces a relatively open, thin turf and requires little mowing. It is the ideal grass for those wanting a "native" landscape.

Establishment. Buffalograss can be established from seed (burs) or sod. Buffalograss established from seed develops into patches of male and female plants, with the male plants producing the seedstalks that may appear unsightly in lawns. When planting buffalograss vegetatively, female plants are generally selected since they do not produce the taller seedstalks. Prairie and 609 buffalograsses are female plant selections released by the Texas and Nebraska Agricultural Experiment Stations in 1990. They produce a more dense and uniform turf than common types. Prairie and 609 buffalograsses must be established from sod or sod plugs.

When planting seed, seed treatment, seeding rate and date of seeding are important considerations. Treated seed, seed chilled at 5 to 10 degrees for 6 to 8 weeks or treated

chemically to break dormancy, have a much higher germination rate (80% to 90%) than untreated seed (20%). For spring and summer plantings, treated seed should be planted.

April and May are the best months to plant treated buffalograss seeds as temperatures are favorable and moisture is generally adequate. With irrigation the planting date can be extended into July and August.

Fall plantings of untreated buffalograss seed are also successful, but maximum germination does not occur until the following spring.

Treated seed planted in May will germinate in 7 to 10 days if moisture is adequate. Without irrigation the seed will remain dormant until moisture is favorable. Seed planted in dry conditions without irrigation should be drilled into a well prepared seedbed. Seed broadcast on the surface may germinate when little or no subsurface moisture is present to sustain the young seedlings.

Seeding rates may range from less than 0.5 pounds of seed per 1,000 sq. ft. to 4 to 6 pounds, depending on the method of planting and the time available to obtain a cover. Seeding rates are generally much higher for broadcast seeding on the soil surface than for that drilled in rows into the seedbed. Buffalograss seed drilled in rows at 10 to 20 lbs. per acre will produce a complete cover in one growing season with favorable moisture conditions. With no irrigation, broadcast seedling rates of 1 to 2 lbs. per 1,000 sq. ft. may require several seasons to develop a complete cover. In contrast, broadcast seeding rates of 4 to 6 lbs. per 1,000 sq. ft. will cover in several months with adequate moisture.

For sites that cannot be irrigated during establishment, recommended seeding rates would be 0.5 lb. per 1,000 sq. ft. if drilled and 2 to 4 lbs. per 1,000 sq. ft. if broadcast. If irrigated, areas could be planted at the rate recommended for nonirrigated sites. All of the seeding rates are for planting treated seed in late spring and summer for lawns, golf courses or other well maintained areas of turf. Roadsides, parks and other low maintenance areas can be planted at 10 to 20 lbs. of seed per acre.

Fall plantings using untreated seed should be at rates of 2 to 4 lbs. per 1,000 sq. ft. of lawn or turf area. Significant germination should not be expected until the following spring or summer when moisture is favorable.

Buffalograss can be established from pieces of sod or sod plugs not less than 2 inches square. These should be planted on a well prepared seedbed in about 18-inch rows. Plants can be spaced anywhere from 6 inches to 2 feet apart, depending on how quickly a complete cover is desired. The closer they are spaced, the sooner the ground will be

covered. In digging up material for planting care should be taken to keep the roots moist as the plants die very quickly when the roots get dry. When planting, dig a hole deep enough to set the plants in so that the grass is above ground level. If the pieces of sod are covered with soil, they will die. The soil should be packed around the plants. Planting is best done in moist soil or where irrigation is available. The grass should be planted in early fall, spring or early summer, when moisture is favorable. Plants should be well watered after planting and as needed for several weeks, thereafter.

Management. Buffalograss is only recommended for low maintenance, low use turfgrass areas. It does not persist where use is intensive. Consequently, only minimum maintenance practices are required to keep a buffalograss turf.

Mowing height and frequency depend on the use of the site. In lawns, buffalograss can be mowed at heights of 2 to 3 inches. At the shorter heights weekly mowing may be required to keep a buffalograss turf.

On irrigated golf course fairways, buffalograss is mowed weekly at inch. Without irrigation, it is mowed only as needed at a 1 inch height. In rough areas on golf courses, buffalograss is mowed only as needed at the heights between 2 and 3 inches.

Buffalograss does not need fertilization, but it will respond to light applications of nitrogen. Nitrogen fertilization should not exceed 2 lbs. of nitrogen per 1,000 sq. ft. per year. If bermudagrass is undesirable in the lawn, avoid nitrogen fertilization.

With irrigation, buffalograss will remain green throughout the spring and summer. One inch of water per week is adequate to maintain a green buffalograss turf. Without irrigation, buffalograss will turn brown and dormant during the dry summer months. As with fertilization, excessive water promotes bermudagrass encroachment.

Prairie Buffalograss Licensees

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Rt. 2, Box 10

Amarillo, Texas 797101

806/622-0861

Contact: Amy Smith

Milberger Turf Farms

Rt. 1, Box 229

Bay City, Texas 77414

409/245-8175 or 245/7521

Contact: Arthur Milberger

Rod Farm

Rt. 1, Box 68

El Campo, Texas 77437

409/543-9023

Contact: Glenn Rod

Thomas Brothers Grass Company

Rt. 3, Box 487

Granbury, Texas 76048

817/573-2404

Contact: Ike Thomas

Trinity Turf Nursery

P. O. Box 811

Pilot Point, Texas 76258

817/686-2000

Contact: Doug O'Connor

Wharton Turf-Grass, Incorporated

Box 1029

Wharton, Texas 77488

409/532-4340

Contact: Charles Davis