

Bermudagrass Lawn Management

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The bermudagrasses (*Cynodon* spp.) are the most popular and durable turfgrasses used for lawns in Georgia. These are warm season grasses that grow best during the warm months of spring, summer, and fall. They grow vigorously during this time and become brown and dormant in winter. The bermudagrasses may be divided into two groups based of method of reproduction. One group, reproduced by vegetative parts only are referred to as "hybrid" bermudagrasses. The second group reproduces by seed or vegetative means and is called "common" bermudagrass. A subgroup of the common type is the "improved seeded types". All three groups are presented later.

All bermudas thrive in hot weather but perform poorly in shade. They spread rapidly by above-and-below-ground runners that are difficult to control around planting beds and paved areas. If fertilized properly, they need frequent mowing.

The improved hybrid bermudagrasses can produce the finest lawns in Georgia if properly maintained. Golf course quality lawns can be grown but they require intensive maintenance.

Advantages

Bermudagrasses can be grown throughout the state and are the most widely adapted turfgrass species in Georgia. They tolerate extreme temperature and rainfall conditions and will grow in acid or alkaline soils. However, they grow best in well-drained soils with a Ph of 6.0 to 6.5. They have a rapid growth and establishment rate and recover rapidly from damage. They will generally recover from most disease and insect invasions without the use of chemicals. The bermudagrasses also have good salt tolerance which is very useful in coastal areas. The hybrids are fine-textured, have a light to dark green color and are low-growing. These characteristics have made berumdagrasses the preferred grass for sports fields throughout the warm, humid climate regions of the world.

Disadvantages

With the exception of common bermudagrass and the new improved seeded types, bermudagrasses must be established vegetatively. They are also generally the least shade tolerant turfgrasses and will grow under scattered pine trees but not under deciduous trees. In order to obtain the best quality turf, bermudagrasses must be mowed closer and more often than other turfgrasses. In fact, reel mowers are needed for "golf course" quality turf.

Diseases and insects seldom kill bermuda, but brown patch, dollar spot and mole crickets can damage a turf significantly. Because of the rapid growth of bermudagrasses it can be difficult to prevent encroachment onto sidewalks, curbs and planting beds. However, new plant growth regulators can significantly reduce this edging requirement.

Varieties

Common

Also called "Arizona Common", is one of the least desirable selections for lawns. It has the poorest color, density, and leaf texture and is not recommended for a high quality lawn. However, common is very popular because it can be easily established with seed.

Improved seeded types

In the mid-1980's research to develop improved seeded types from "Arizona Common" became very popular. This research has resulted the development of some "improved" seeded bermudagrasses. Examples include "Jackpot", "Mirage", "Sahara", "Blackjack", and "Yuma". In general, some of these new turfgrasses may have slightly improved color, density, turf quality, and traffic tolerance and some have slightly better low temperature survival than "Arizona Common". However, these grasses still don't produce the high quality turf of the hybrids.

"Princess" is the exception of the seeded types. This seeded bermudagrass has turf color, density and leaf texture, that produces turf quality very similar to "Tifway" bermudagrass.

Hybrid Bermudagrasses

Compared to seeded types, the hybrids generally have more disease resistance, greater turf density, better weed resistance, fewer seedheads, fine and softer leaf texture and better color. They also produce no viable seed and must be planted by vegetative means. All of the improved bermudas described here have been developed and released cooperatively by the University of Georgia and the U.S. Department of Agriculture.

For the highest quality bermudagrass turf use sod certified by the Georgia Crop Improvement Association (GCIA). This grass is certified for its genetic purity and is free of noxious weeds like other bermudagrasses and nutsedge. This grass should be delivered with a GCIA blue tag verifying its quality.

Tifway or Tifton 419 is the industry standard that was released in 1960. It is a sterile hybrid that is adapted to the USDA plant hardiness zones 7 through 10 and is used in similar areas throughout the world. It is a low growing, dense, dark green turfgrass. If Tifway is not certified by the Georgia Crop Improvement Association (GCIA) or a cooperating agency then it is probably contaminated with other types of bermudagrass.

Tifway 2 is a sterile hybrid selected from irradiated stolons of Tifway in 1971 and released in 1981. It looks and performs very similar to Tifway. Like Tifway, Tifway 2 should not be relied upon if it is not GCIA certified.

TifSport is a new, improved sterile hybrid selected from irradiated stolons of Midiron bermudagrass. Compared to Tifway, TifSport has better cold hardiness, more density and tensile strength, more mole cricket non-preference, and superior response to lower than

0.75" mowing heights. It is patented and has been licensed to qualified growers who will grow it only under GCIA certification.

Tifton 10 is a vegetatively produced bermudagrass collected in Shanghai, China. It sheds pollen but sets limited seed, therefore is only vegetatively reproduced. It is relatively coarse textured and has a bluish-green color. It establishes rapidly and has a much lower growing habit than the hybrid bermudagrass and appears to be less susceptible to dollar spot. It appears suited to low maintenance of 2 to 3 pounds N per 1000 square feet and a mowing height of 1.5 inches. It was released in 1998 and noncertified material is sold under the name of Shanghai.

Establishment

With the exception of "Common" bermudagrass and the "improved" seeded types, bermudagrasses must be planted vegetatively - sod, plugs, or sprigs. Success with any propagation method is highly dependent on proper soil preparation.

Remove all construction debris, brush, and other undesired vegetation prior to grading the lawn site. If necessary, thin trees to make soil preparation and mowing easier. Slope the soil away from the house for drainage.

If a permanent irrigation system is desired, it should be installed after the final rough grading. For best results the system should be designed by an irrigation specialist and installed according to design specifications by qualified personnel.

Fertilizer and lime applications should be based on soil test results. Contact your county agent for information on how to collect soil samples. Spread the fertilizer uniformly at the correct rate and mix thoroughly to a depth of 4 to 6 inches using a rototiller. After the incorporation, smooth grade or level the area to correct surface irregularities. Apply at least one inch of water and allow the soil to settle.

Sodding

Planting of bermudagrasses by sod is a common establishment method and results in an "instant lawn" with the least amount of soil erosion. The area to be planted should be properly prepared and moist at the time of sodding. The sod pieces should be fitted tightly together to prevent cracks from developing and stagger the joints in each row in a brick-like fashion. After the sod is in place, thoroughly irrigate and roll with a lightweight roller to ensure firm contact between the sod and soil. Do not allow the sod layer to dry out. Irrigate often and lightly to maintain good sod moisture until the sod is well rooted. Sodding is best done in the spring and summer months, but can be done at any time of the year.

Plugging

Plugging is the planting of two to four-inch pieces of sod into holes the same size as the plug. For bermudagrasses, which grow rapidly, plugs can be planted on 6 to 12 inch centers. Plugs are planted every 6 or 12 inches in a row, and rows are spaced 6 or 12

inches apart. Tamp plugs firmly into the soil. Keep the soil moist until the grass is well rooted and spreading vigorously.

Sprigging

Planting sprigs is a laborious but effective method of establishment. Plant fresh, vigorous sprigs (runners) having at least two to four nodes (joints) in rows 6 to 12 inches apart. Plant the sprigs every 6 inches in the rows and cover 1-2 inches deep, but leave a portion of each sprig exposed to light. Rolling can be used to press sprigs into the soil. Keep the soil moist until plants initiate new growth and until the ground is well covered.

Aside from sodding, the fastest way to produce a bermudagrass lawn is by broadcast sprigging, also called stolonizing. Prepare the sprigs by shredding or hand tearing sod into individual sprigs, or purchase sprigs by the bushel. Spread two to four bushels of sprigs per 1000 square feet. Sprigs can then be pressed into the seed bed with a light disc or covered with 1/4 inch of soil topdressing. Then roll and irrigate the area.

Seeding

Seeding takes the least amount of effort but the most time until complete establishment. Seed should be applied with a mechanical spreader for an even distribution. Apply one-half the seed in one direction and the other half at a right angle to the first. The normal seeding rate is one pound per 1000 square feet.

The seed should be lightly covered with soil by raking and mulched with straw. One 60 to 80 pound bale of straw will cover about 1000 square feet. About 50% of the soil should be visible through the mulch. After mulching, lightly roll and irrigate. Proper soil moisture is the key to successful seed establishment. Keep the surface one-half inch of soil moist but not saturated with light irrigations two or three times per day for 10 to 14 days. Bermudagrass seed should germinate in five to ten days. As the seedlings emerge and the roots system develops, reduce the frequency of irrigation but increase the amount of water applied so that the entire root system is moistened.

Maintenance

After a lawn has been established, its appearance depends on a sound maintenance program. An effective program involves fertilization, irrigation, mowing, and cultivation. No one practice is more important than another because these practices are interrelated and needed to maintain an attractive, healthy turf.

To look their best, bermudagrasses require frequent fertilization based on a soil test. For minimum maintenance, a complete fertilizer like 16-4-8, 10-10-10, or 12-4-8 can be applied in spring and fall with additional applications of nitrogen in the summer.

Irrigation on an "as needed" basis is the most efficient way to maintain proper moisture. Irrigate at the first signs of moisture stress. Most grasses appear a dull bluish green color, the leaf blades begin to fold or roll, and footprints remain after walking over a moisture stressed turf. Apply one inch of water (620 gallons per 1000 square feet) per application.

The bermudagrasses should be mowed at the recommended height of one-half to one and one-half inches for the hybrids and about one inch for the improved seeded types and one to two for common. They should be cut often enough to remove no more than 1/3 of the leaf height. If fertilized as recommended, bermudagrasses will require mowing every three to five days during the summer. All bermudagrasses generally look better if mowed with a reel-type mower, however most lawns are successfully maintained with rotary mowers.

Because bermudagrasses grow fast, it is common to get behind the recommended mowing schedule during the summer. The turf looks scalped after mowing when this occurs. To overcome this regular scalping, lower the mowing height further and then raise it back to the desired height for the next mowing. Essentially resulting in one severe scalping rather than light scalping with each mowing.

If lawns are properly fertilized and mowed, grass clippings will not promote thatch accumulation. In fact, returning the clippings to the soil will recycle nutrients and may reduce fertilizer needs by 30%. The plant parts most responsible for the accumulation of thatch are the plant stems, runners and roots. These plant parts take longer to decompose.

On high maintenance lawns that are fertilized monthly during the growing season excess thatch accumulation will become a problem (exceed 1/2 inch in depth). The most practical means of removing excess thatch is by vertical mowing or dethatching. The vertical blades lift the thatch to the surface where it can be removed. Since bermudagrasses have underground rhizomes this grass can be vertical mowed down to the soil in several directions. However, the less damage to the turf, the faster it will recover. Vertical mowing is most effective and least damaging if it is done in early summer when the grass is actively growing. However, it is common to vertical mow bermuda lawns before they greenup in late winter.

Core aeration stimulates thatch decomposition, relieves soil compaction and increases water and air movement into the soil. Power aerators with hollow tines or spoons that remove soil cores two to three inches deep and 1/2 to 3/4 inch in diameter are very effective. Aeration is most effective during periods of active plant growth and when this soil is moist enough to allow for deep soil penetration.

Topdressing is the most effective means of reducing thatch but it is also the most complex. This involves spreading a thin layer of topsoil or other soil mix over the turf which then encourages microbial breakdown of the underlying thatch. The topdressing material should be of similar texture and composition as the underlying soil. Generally 1/2 to one cubic yard of material per 1000 square feet will produce a layer about 1/8 to 1/4 inch thick. The topdressing is worked into the turf by dragging, raking or brushing and it is important that distinct layers not be formed.

Scalping is a common practice used to prevent thatch accumulation. It is most often done before spring greenup. This removal of dead plant material will also encourage early spring growth of the grass and sometimes also of weeds. Most cultural practices can

produce a temporary reduction turf quality but all bermudagrasses should respond positively to these cultural practices.

Pest Problems

A dense, healthy turf obtained through proper fertilization, mowing and irrigation is the best defense against pest problems. Although bermudagrasses tolerate most pest invasions, it is difficult to maintain a high quality lawn without using some herbicides to control weeds. Diseases like brown patch and dollar spot can do considerable damage to bermudagrasses but eventually it will recover without the use of a fungicide. The most common insects are mole crickets in south Georgia and white grubs in north Georgia. Again, in most cases bermudagrasses will recover from such infestations. The control of any pest problem is dependent on proper identification and treatment. Contact your local county Extension office for assistance with turf pest problems or for additional turf management information.