

Centipede Lawns

Gil Landry & Tim Murphy, Extension Agronomists

Centipedegrass is a warm season (green in summer, brown or dormant in winter) turfgrass that is very popular in the southern half of Georgia. If properly maintained, it will grow well as far north as Atlanta and Athens. It is more prone to winter injury if grown farther north but can grow in north Georgia if properly managed. The popularity of centipedegrass is related to its tolerance of low soil fertility, which results in slower growth and less frequent mowing than other lawn grasses. Although there are some improved varieties, the most widely used in Georgia is a common type.

Centipede is a creeping grass (above ground runners or stolons) that has leaves wider than most bermudagrasses and zoysiagrasses, but narrower than St. Augustinegrass. It grows well in full sun and is more shade tolerant than bermuda but generally less shade tolerant than zoysia and St. Augustine. It normally needs more frequent irrigation than bermuda but less than zoysiagrass, particularly when grown on hard, compact soils.

Centipede has a natural light green color and is more suited to acid soils (pH 5.0 to 6.0) than most turfgrasses. However, recent research suggests that centipedegrass actually grows better when the soil pH is 6.0 to 6.5. High rates of fertilizer (especially nitrogen) produce an unnatural dark green color and often result in iron chlorosis, reduced cold and drought tolerance, thatch accumulation and turf loss.

Avoid Centipedegrass Problems

Problems with centipede lawns often develop three to five years after establishment. These problems can generally be related to mowing heights more than 2 inches high, annual nitrogen applications of more than 2 pounds per 1,000 square feet, or early spring or late fall fertilizations.

Centipedegrass will become as dark green as most turfgrasses with high nitrogen rates. However, these nitrogen rates and high mowing heights encourage thatch development. This generally results in stolons (above ground runners) growing over the thatch instead of on the soil surface. The plant then becomes more susceptible to low temperature and moisture stress. The results all too often are circular areas that green up and die back or don't green up at all in the spring. Chlorotic or yellowing leaves are often the first indicators that a problem is developing. See section on Chlorosis.

Varieties

'Common' centipede is the most commonly used centipedegrass, and most of it is produced under the trade name of 'Centi-Seed.' 'TifBlair' centipedegrass is a new variety released through the University of Georgia. 'TifBlair' is similar in appearance to 'Common' but has superior cold hardiness. 'Tifblair' also grows significantly better than 'Common' in soil with a pH of 4.2 and has improved rooting depth. Other varieties include 'Oaklawn' and 'Tennessee Hardy.'

Establishment

Centipede can be established by seed, sprigs (runners), plugs or sod. The best time to plant centipede is in May or June. April planting generally encourages more weed growth, and July or later plantings require more watering and are more prone to winter injury.

Soil Preparation -- Proper soil preparation is the key to successful establishment of a lawn. Bermudagrass or other weeds that are hard to control, like nutsedge, should be treated with a herbicide such as glyphosate (Roundup Pro) before planting.

Deep cultivation by plowing or rototilling 6 to 8 or more inches is very important to establishing and maintaining a healthy turf. After completing initial preparation and properly leveling the area, collect a soil sample to obtain soil fertilization recommendations. A common fertilizer recommendation for establishment is to cultivate 10 pounds of 5-10-15 fertilizer per 1,000 square feet into the top 4 to 6 inches of soil. Rake or harrow the area to smooth the surface before planting.

Seeding -- Centipede seed is expensive but, since the seeding rate is only $\frac{1}{4}$ to $\frac{1}{2}$ pound per 1,000 square feet, it is probably cheaper than vegetative planting if time and labor are considered. Spread the seed evenly, using a mechanical spreader. Mixing the seed with a carrier, such as sand, at the rate of $\frac{1}{4}$ pound of seed per gallon of sand is recommended. Divide the mix into two equal parts and spread half in one direction and the other half at a right angle to the first direction. (Figure 1) The soil should be raked or dragged to cover the seed to a depth of about $\frac{1}{4}$ inch.

The area should then be rolled with a lightweight roller to ensure good seed/soil contact. Applying a straw mulch at one bale per 1,000 square feet helps retain soil moisture for more rapid germination and reduces soil erosion. The seed must be kept moist, so daily, light irrigations are needed for the first three weeks. Germination should occur in two weeks if the seeds are kept moist. As the seedlings develop, decrease the watering frequency and increase the amount of water applied until normal practices can be followed. Begin mowing to a height of $1\frac{1}{2}$ inches when the seedlings reach 2 inches. Be sure the mower blades are sharp, and do not mow when the grass and/or soil is wet. Weedy grasses like crabgrass and goosegrass can be controlled in the second year with applications of preemergence herbicides.

Sprigging and Plugging -- Sprig and/or plug planting is as good as seeding but generally requires more time and labor. Runners (stolons) with at least two nodes or joints can be planted every 4 to 6 inches in rows dug 8 to 12 inches apart (closer spacing will provide quicker cover). After planting sprigs 1 to 2 inches deep, leave a portion exposed to light and firm the soil to ensure good soil contact. Sprigs can also be broadcast over the soil and either topdressed with soil or sliced into the soil with proper equipment. To plug centipede, cut sod 2 to 4 inches in diameter and plant on 6 to 12 inch centers.

Keep the soil moist but not soggy until new growth appears. Begin mowing to a height of 1½ inches when the grass reaches a height of 2 inches. Be sure the mower blades are sharp, and do not mow when the grass and/or soil is wet.

Improving Coverage -- The rate of centipede coverage from seeding, sprigging or plugging can be increased by proper fertilization. After new growth is seen, apply a complete fertilizer that is low in phosphorus at the rate of 1 pound of nitrogen per 1000 square feet. This fertilizer application can be repeated every four weeks. **However, be sure not to apply more than 4 pounds of nitrogen per 1000 square feet or to fertilize later than eight weeks before the normal first killing frost date.** Of course, proper mowing and irrigation must be continued during this "grow-in" period. Certain post-emergence herbicides such as atrazine and sethoxydim (Vantage) may be used during the year of establishment to control grass and broadleaf weeds.

Sodding -- Sodding is more expensive but provides an instant lawn. Use a high quality sod that is free of weeds, disease and insects. Wet the soil surface thoroughly after preparation. Place the sod tightly together to avoid cracks, water thoroughly and roll to ensure a good sod to soil contact. Apply about 1/4 inch of water daily until the sod is well rooted into the soil before beginning more "normal" watering practices.

Maintenance

Fertilization -- A fertilization program should be based on soil test analyses. As mentioned, centipede has a natural light green color and is suited to acid soils (pH 5.0 to 6.0) but grows best at a higher pH. High rates of fertilizer, especially nitrogen, will produce a dark green color but will also lead to growth problems. One to two pounds of nitrogen per 1000 square feet per year is generally good for centipede, although it will grow well without any fertilizer. The 2-pound rate may be preferable on sandy soils. Apply nitrogen in split applications. Apply the first two to three weeks **after** spring green-up and the second in midsummer (July - August). Determine phosphorus and potassium needs by soil testing. If soil testing is not used, a general purpose fertilizer with a 3-1-2 nitrogen-phosphorus-potassium (N-P₂-O₅-K₂O) ratio such as 12-4-8 is good. Apply 5 pounds of 12-4-8 per 1000 square feet **after** spring green-up and again in midsummer. Another possible choice of fertilizer is 4 pounds of 16-4-8 per 1000 square feet **after** spring green-up and in midsummer. Apply the fertilizer evenly over the area when the grass leaves are dry. Use a mechanical spreader and use the two-direction application procedures as described for seeding. (Figure 1) **Remember, avoid excessive fertilization and avoid early spring applications.**

Mowing -- Proper mowing is also very important to maintaining healthy, attractive turf. Mow at 1 to 1-1/2 inches. Use a rotary mower with sharp blades, and mow often enough so only 1/3 of the plant height is removed. High and infrequent mowing tends to encourage thatch development, which can lead to chlorosis, drought stress and winter injury. However, during periods of moisture stress or in shaded areas, the mowing height should be raised about 1/2 inch.

Irrigation -- Irrigate during periods of moisture stress to keep centipede healthy. Water only when the grass shows signs of moisture stress, such as rolling leaves, gray color or wilting. Apply enough water to thoroughly wet the soil to a depth of 6 to 8 inches. Early morning is the best time to water, since evening watering can encourage disease development.

Irrigation during the fall and spring can be very helpful to centipedegrass. Although the grass is not totally green, it is still growing at this time. Therefore, it should receive some water either from rainfall or irrigation every two weeks. This may be particularly important in the spring as new shoot and root growth begin.

Chlorosis -- As mentioned, centipede is susceptible to yellowing or iron chlorosis. The chlorosis may be caused by one or more of the following factors:

1. Excessive nitrogen or nitrogen applied **during** spring green-up.
2. High soil pH, phosphorus or potassium levels.
3. An excessive thatch caused by over-fertilization, irrigation or pesticide use, or by poor mowing.

Iron chlorosis can be temporarily overcome by spraying 2 ounces of ferrous sulfate per 1000 square feet or a chelated iron material according to label rates. An excessive application of iron will appear within a few hours as blackening of the leaves. The grass may take a few weeks to fully recover from such high rates of iron. However, the real solution is to determine and correct the cause of chlorosis.

Thatch -- Thatch is a layer of dead plant material that accumulates on the soil surface (Figure 2). If centipede is properly fertilized, mowed and watered, grass clippings will not promote excess thatch accumulation. In fact, returning the clippings to the soil will recycle plant nutrients. The stolons of centipedegrass are very resistant to decomposition and often grow on top of each other. When fertilized excessively, rapid stolon growth often leads to thatch accumulation. Where the thatch layer exceeds 1/2 inch in depth, the lawn become "soft" and "spongy." This excess thatch reduces water movement, encourages shallow rooting, and often results in winter injury.

Removing the excess thatch is generally a gradual process that may be done before spring green-up or between green-up and the summer dry period in July. Use vertical mowers, aerifiers, power rakes or other dethatching equipment to remove the thatch. Vertical mowers should have blades 2 inches apart, since closer blade spacing removes too much turf and reduces recovery rate. Also, more than one pass over a centipede lawn removes

too much plant material and reduces the lawn's recovery rate. Topdressing once or twice a year with 1/4 inch layer of topsoil is the most effective method of thatch reduction but also the least practical cultural practice because of the cost of specialized equipment, topsoil and labor. **Discourage thatch development by avoiding excessive fertilization.**

Pest Problems

A dense, healthy turf obtained through proper fertilization, mowing and irrigation is the best defense against pest problems. However, when problems arise from unwanted weeds, diseases or insects, control depends upon proper pest identification and treatment. Contact your county extension office for assistance and appropriate publications if you suspect pest problems. Refer to Extension Bulletin 691, *Prevent Centipede Decline* for answers to additional questions about centipede maintenance. Extension Bulletin 978, *Weed Control in Home Lawns*, provides basic weed control practices and herbicides labeled for centipedegrass.

Attention! Pesticide Precautions

1. Observe all directions, restrictions and precautions on pesticide labels. It is dangerous, wasteful and illegal to do otherwise.
2. Store all pesticides in original containers with labels intact and behind locked doors. **Keep pesticides out of the reach of children.**
3. Use pesticides at correct dosages and intervals to avoid illegal residues or injury to plants and animals.
4. Apply pesticides carefully to avoid drift or contamination of non-target areas.
5. Surplus pesticides and containers should be disposed of in accordance with label instructions, so that contamination of water and other hazards will not result.
6. Follow directions on the pesticide label regarding restrictions as required by state and federal laws and regulations.
7. Avoid any action that may threaten an Endangered Species or its habitat. Your county extension agent can inform you of Endangered Species in your area, help you identify them and, through Fish and Wildlife Service Field Office, identify actions that may threaten Endangered Species or their habitat.

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