ESTABLISHING SOLID BERMUDAGRASS STANDS

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As a forage guy, it is an exciting time! I have consulted with a number of our Extension Agents who are working with cattlemen that are expanding or replacing their existing forage base with improved bermudagrass varieties. It's great to be talking about GROWTH again! But, it is important to do things right the first time. So, let's review some of the keys to establishing solid stands of bermudagrass.

Selecting the Right Bermudagrass Variety

Bermudagrass is a high-yielding, sod-forming grass that is well-suited to grazing and hay production in the South. Though there are a number of varieties available, they certainly are not equal. In fact, we at UGA only officially recommend four varieties: Tifton 85, Russell, Tifton 44, and Coastal. Most cattlemen in Georgia will find that these improved hybrid varieties are superior and more cost-effective in the long-run than the other varieties. Years of research have shown that these varieties provide higher yields of high-quality forage than all other varieties. (For more about these and other varieties, see the UGA Cooperative Extension Circular entitled "Selecting a Forage Bermudagrass Variety" at your county Extension office and at www.georgiaforages.com).

Types of Vegetative Establishment

Unfortunately, hybrid bermudagrasses do not produce viable seed (at least not much) and must be established vegetatively (that is, established from transplanting vegetative plant material). There are two generalized methods by which it is recommended to vegetatively establish bermudagrass: 1) sprigging and 2) planting tops. Strictly speaking, sprigging is the planting of freshly dug sprigs (rhizomes or stolons). In contrast, planting tops is the process of taking mature top growth clippings ("tops") and broadcasting and incorporating them into the soil.

Sprigging is arguably the better of the two methods, as it less time sensitive and the system is highly mechanized (see Figure 1). Additionally, sprigging can be done at more times of the year than planting tops. In fact, there are two windows of opportunity to sprig bermudagrass. Dormant sprigging can occur in late winter (February – early March) when the plants have not yet emerged from dormancy (i.e., before spring green-up). This method has generally been very successful throughout most of Georgia. Excessive moisture in winter frequently limits one's ability to dormant sprig. However, this method generally allows for quicker coverage in the establishment year. Spring sprigging is recommended to be performed in mid- to late-spring (May – June). Sprigging can be successful even as late as mid-summer (late July in north Georgia and late August in south Georgia). However, plantings after late June tend to be more likely to encounter moisture deficit, heat stress, and weed competition. Care should be taken to reduce these risks.

Figure 1. A sprig harvester (left) and a sprigger (right) allow for greater mechanization in the establishment of bermudagrass from sprigs.

Planting tops is commonly used when sprigging equipment is not available, often using existing equipment (e.g., a baler to package fresh tops for easy transport, a manure-spreader to spread the tops, a disk, a cultipacker, etc.). This method takes advantage of the fact that mature bermudagrass contains a substantial number of stolons (runners) that can, when transplanted, develop into new plants. In this method, an existing stand of well-fertilized bermudagrass is allowed to grow for at least 8 weeks (so as to develop mature top growth), cut, and quickly baled or forked onto a wagon for transport to the field to be planted. These fresh tops are then broadcast onto a well-prepared seedbed and lightly disked/incorporated into the soil. Immediately afterwards, the field is packed to ensure the tops make good contact with the soil and do not dry out. However, tops must be transplanted into the new field as soon as possible (preferably < 2 hrs). Tops can dry quickly and, if not transplanted quickly, they may not survive.

Application Rates and Planting Depths

Sprigs should be planted into a moist, well-prepared seedbed at a rate of at least 30 – 50 bushels of sprigs per acre. Higher sprigging rates (up to 100 bushels per acre) may be necessary for rapid establishment of those varieties that tend to be slower to establish (e.g., Tifton 85). When planting tops, a rate of 1500 – 2000 lbs of fresh tops should be planted per acre. In either case, the vegetative material should be placed 2 – 3 in. deep and the soil should be firmed around the sprigs or tops by packing the soil with a cultipacker.

Seedbed Preparations

In general, stands of bermudagrass are best established into a well-prepared, conventionally-tilled seedbed. It is best to employ the "stale-seedbed" method. In this method, the first step is to destroy the existing vegetation by spraying with a non-selective herbicide. Next, recommended levels of lime and/or nutrients (based on soil test results) should be added so that they can be incorporated into the soil during the tillage phase. The land can then be tilled, disked, and packed. This also allows for any leveling or smoothing of the soil surface that may be necessary. The tillage and packing steps should be completed at least 1 month prior to planting so that the soil is allowed to settle/firm before planting. Properly packing and firming of the soil before planting is necessary to ensure consistent planting depths. As a rule of thumb, footprints left in prepared soil that are approximately ¼ inch deep indicate a firm seedbed. In addition to allowing the soil to become firm, this will allow many of the weeds in the disturbed soil to germinate and emerge. These weeds can then be destroyed using a non-selective herbicide a few days before planting.

N Fertilization and Weed Control

Good weed control during the establishment phase is essential. Newly-established bermudagrass cannot compete with rapidly growing annual grasses and broadleaf weeds. A thick cover of weeds slows stand establishment by shading the emerging bermudagrass plants and preventing the bermudagrass stolons from pinning down. Management of N applications is critical to maintaining good bermudagrass growth but with a minimum of weed pressure. Take care not to apply N before the sprigs start to grow and do not apply too much N, as this will merely increase weed competition. An application of 35 – 50 lbs of N per acre after the sprigs start to grow should be sufficient to maintain this balance. With early planting dates, a second application of 50 – 75 lbs of N per acre will be necessary to promote rapid coverage.

Application of diuron (e.g., Direx, Diuron, etc.), a pre-emergence herbicide, will greatly reduce weed competition in newly-sprigged bermudagrass. Diuron applications provide fair to good control of crabgrass, crowfootgrass and goosegrass and provide residual control of certain annual broadleaf weeds. Diuron should be applied immediately after sprigging. Ensure that the bermudagrass sprigs are planted at least 2 in. deep to lessen chance of injury. Exposed sprigs or tops at the time of treatment may be injured or killed. Do not graze or feed treated foliage for 70 days after diuron application. After emergence, most broadleaf weeds can be controlled with 2,4-D. See the Georgia Pest Management Handbook (http://www.ent.uga.edu/pmh/) and check with your County Extension Agent for additional information and current recommendations.

Attention to these details will greatly increase the chances of establishing a solid stand of bermudagrass. Additional information on the establishment of bermudagrass is available on our website at www.georgiaforages.com or through your local University of Georgia Cooperative Extension office (call1-800-ASK-UGA1).