

# Establishing Bermudagrass for Pastures and Hay Fields

THE SAMUEL ROBERTS  
**NOBLE**  
FOUNDATION

by Eddie Funderburg

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Bermudagrass (*Cynodon dactylon* L.) is a commonly grown, introduced, warm-season perennial forage crop in the southern United States. It grows aggressively, responds well to fertilizer, adapts to a wide range of soil and environmental conditions, tolerates heavy grazing pressure and can produce large amounts of high quality forage when properly managed.

Many varieties of bermudagrass have been introduced in recent years. They fall into two main groups: selections of common bermudagrass that can be planted from seed and hybrid bermudagrass that must be propagated by vegetative means. The most common method of vegetative propagation in the Southern Great Plains is by planting roots, commonly referred to as "sprigging."

## Fertilization and Liming for Establishment

Collecting good soil samples is a must for determining lime and fertilizer rates during establishment. At a minimum, the soil samples should be analyzed for soil pH and lime requirement, extractable phosphorus (P) and exchangeable potassium (K).

Bermudagrass is more tolerant of acidic soils than most forage plants. However, lime is recommended if the soil pH is highly acidic. We recommend liming established bermudagrass when the soil pH falls below 5, but feel it may be beneficial to lime in the establishment year if the soil pH is below 5.5. This is because you can incorporate the lime during the establishment year, and incorporation will not be practical after the stand is established.

Phosphorus (P) and potassium (K) are essential for good grass growth and stand health. These should be applied according to soil test results. Not applying these nutrients if they are deficient will cause the grass to establish very slowly, if at all. This will limit yield and also extends the time it takes the stand to cover, which complicates weed control.

Nitrogen should be applied in the establishment year to increase the growth of the plants and help the stand cover completely as soon as possible. We generally recommend 50 pounds of actual nitrogen per acre during the establishment year. We recommend waiting until the plants are actively growing and rooting on the first node of the runners before applying nitrogen. If nitrogen is applied before this time, weed growth will be enhanced since weeds can establish more quickly than bermudagrass.

## Weed Control for Establishment

Excessive weed competition during the establishment year is probably responsible for more stand failures than any other factor, although severe drought is also the cause of many. If the stand is sprigged, Diuron 4L can be used as a preemergent herbicide (check label to make sure it is legal in your state). Diuron 4L controls many annual grasses (such as crabgrass, sandbur and ryegrass) and many broadleaf weeds. It should be applied after the grass is sprigged, but before it emerges. We highly recommend Diuron 4L when bermudagrass is sprigged. This is the only way to control most grass weeds when establishing bermudagrass. **Diuron 4L cannot**

**be used when bermudagrass is seeded.** Always read and follow label directions before using pesticides.

Broadleaf weed control can be achieved with many commonly used pasture herbicides after the stand has become established. Read the labels to see when they can be used, but most recommend not applying the material until a certain amount of time has elapsed since planting or until the plants reach a certain growth stage.

If herbicides cannot be used and weed competition is severe, there are two possible options.

1. You can mow the area to remove the top growth of weeds, and this may allow the bermudagrass to release and grow. However, there is a possible disadvantage to mowing. If the weeds are very large and thick, the mown residue can form a mulch on the ground that may suppress bermudagrass growth as much as the standing weeds did.
2. Flash grazing can sometimes be used for weed control if the weeds are palatable to cattle (such as crabgrass). Watch carefully to make sure cattle are not uprooting or trampling the bermudagrass plants.

## Establishing Bermudagrass From Seed

A well prepared seedbed is critical to successfully establish bermudagrass from seed. A good seedbed should be firm, smooth, weed-free, and free of holes and ridges. A firm seedbed is essential with seeded bermudagrass varieties because the seed are very small and seeding depth is critical. If the seedbed is too fluffy, it is easy to plant seeded varieties too deeply. ►

A cultipacker or harrow is very helpful in establishing bermudagrass from seed. An excellent way to plant seeded bermudagrass varieties is to (1) disk the field until the seedbed is prepared, (2) cultipack the field to firm the seedbed, (3) broadcast the seed and (4) cultipack again to press seed into the ground. Some seeders, such as a Brillion, combine steps 2-4 and save two trips across the field. A harrow can be used in place of the cultipacker, but it generally does not work as well.

Bermudagrass seed may be coated or uncoated. The coatings are usually a combination of fertilizers and fungicides. Unfortunately, the coatings usually double the weight of the seed, so the seeding rate must be doubled if using coated seeds to get the same amount of pure live seed as with uncoated seed.

Bermudagrass seed may also be sold as hulled or unhulled. Hulled seed have part of the seed coat removed so that germination is speeded up. Most bermudagrass seed are hulled. Unhulled seed have the seed coats attached, and some of the seed will not germinate quickly, but will lie dormant until conditions are ideal for germination. In general, if you have a good seedbed prepared and you are planting at the correct time, hulled seed are preferred. If you are planting into less than ideal conditions, unhulled seed or a combination of hulled and unhulled seed is probably better.

The seeding rate for hulled bermudagrass is usually 5-10 pounds of pure live seed (PLS) per acre and 15-20 pounds of PLS per acre for unhulled seed. Remember that the seeding rate must be increased proportionally if the seed are coated, due to the weight of the coating.

### Establishing Bermudagrass From Sprigs

A well prepared seedbed is usually helpful for sprigging bermudagrass, but no-till can be used successfully if a no-till sprigger is available. Good contact between the sprigs and the soil is essential to keep the sprigs from drying out and dying.

Some varieties of bermudagrass should be sprigged after they break dormancy in the spring (Tifton 85 for example). Many varieties can be sprigged either in the dormant season or after they break dormancy. Planting in the dormant season is usually preferred with these varieties due to better sprig survival and the fact that they are more likely to receive rainfall during early establishment if planted in the dormant season.

Sprigs should be planted as soon as possible after digging. The usual sprigging rate is 20-40 bushels per acre.

### Advantages and Disadvantages of Sprigging and Seeding Bermudagrass

#### Advantages of Sprigging

1. Hybrid varieties are generally higher yielding than seeded varieties. If high yield is a major reason you are planting bermudagrass, a sprigged variety is probably the way to your goal.
2. Sprigged bermudagrass can be treated with Diuron 4L (if labeled for your area). This product is very good at controlling many annual grasses that compete strongly with bermudagrass in the establishment year. If your field has heavy infestations of crabgrass, annual ryegrass or sandbur, sprigging may be the best option since there is a weed control option. There are no herbicides available to control grassy

weeds in seeded bermudagrass during the establishment stage.

3. Sprigged varieties usually have a more upright growth habit that is an advantage if the grass is to be harvested for hay.

#### Disadvantages of Sprigging

1. It is usually more expensive to establish a stand from sprigs.
2. Specialized equipment is needed.
3. Coverage is sometimes slower since there are initially fewer plants per square foot.

#### Advantages of Seeding

1. It is usually cheaper to establish seeded bermudagrass than sprigged bermudagrass.
2. If high yield is not a large factor (erosion control or turf establishment are more important), seeding is a good method.
3. Stand establishment may be faster.

#### Disadvantages of Seeding

1. Seeded varieties are usually lower yielding than hybrid varieties.
2. Control of grassy weeds in the establishment year is difficult since Diuron 4L cannot be used. ■

THE SAMUEL ROBERTS  
**NOBLE**  
FOUNDATION

The Samuel Roberts Noble Foundation  
2510 Sam Noble Parkway  
Ardmore, Oklahoma 73401  
Phone: (580) 223-5810  
[www.noble.org](http://www.noble.org)