



Preparation and Planting of Winter Annual Forages



Why should Louisiana livestock producers plant winter annual forage crops? The main reason is that these crops grow and provide grazing during the cool-season when bermudagrass and bahiagrass pastures are dormant and unproductive. These crops are high in nutritive quality, so can provide enhanced animal performance as well as decrease the dependence on stored forages such as hay and silage and decrease feed expense. These crops can be used to winter the breeding herd, develop herd replacements and also to grow out lightweight calves to heavier weights.

Site Selection

Winter annual forages should be planted on well-drained and productive fields. These crops do not tolerate poor drainage very well, and their production may drop without good drainage. Optimum forage production depends on a sound soil fertility program. The time to begin such a program is with a soil test taken several months prior to planting. It is important to soil test early since it takes time to collect the soil samples, have them analyzed and apply the recommended amounts of fertilizer and/or lime prior to planting.

Species and Variety Selection

When deciding on a winter forage program, several choices are available for producers. The most popular winter annual forage is annual ryegrass. It is planted on more than 300,000 acres in the state annually. Other winter annual grasses include oats, wheat, cereal rye and triticale. Producers also can choose to include winter annual legumes, namely clovers, with the planting of a winter annual grass. The types of clovers available include arrowleaf, berseem, crimson, red, subterranean, ball and balansa. White clover is a popular choice, and it is the only clover species that is considered to be a perennial species.

The LSU AgCenter performs variety performance testing on annual ryegrass at locations within the state every year. Limited variety performance trials are performed with other winter annual grass and legume species at various locations. Information on species description,

variety performance and seeding rates can be found in Publication 2334 (www.lsuagcenter.com/articles/connected/coolseason-pasture-and-forage-varieties), which is updated annually.

Seedbed Preparation

Three major methods can produce winter forages. These include (1) planting into a prepared seedbed, (2) overseeding into summer grass sod and (3) direct no-till seeding into summer grass sod. Each of these methods has advantages and disadvantages, but the main determinant of which method to use depends upon when initial grazing is desired. A four-year study conducted in Mississippi illustrated that planting annual ryegrass into a prepared seedbed provided an earlier initiation date of grazing and more grazing days/acre relative to other seeding methods (Table 1).

Table 1. Conservation tillage systems for winter grazing stocker calves, 4-year average.

| Sod-seeding treatment | Initial Grazing Date | Animal Grazing Days/Acre |
|--|----------------------|--------------------------|
| Prepared seedbed | November 23 | 258 |
| Annual sod, no-till | December 4 | 231 |
| Bermuda sod, disked | January 3 | 215 |
| Bermuda sod, no-till | January 24 | 171 |
| Ingram, Addison and Hardin (Raymond, Miss.). | | |

Prepared Seedbed

Planting into a prepared seedbed in late September or early October provides the best opportunity for early grazing (Figure 1). The seedbed should be prepared in early August. Disk deep, and let the land set until approximately September 15, then disk lightly. If the seedbed is not prepared until September, disk only 2-3 inches deep. Shallow disking will help keep the animals from bogging during periods of wet winter weather. For early grazing, the ideal planting date is September 15 to October 10. A successful stand can be attained after this date, but grazing will be delayed.

A disked seedbed will allow the seed to be drilled or broadcast. If the seed is broadcast, it should be lightly disked or harrowed in, but care should be taken not to cover the seed too deep. The seedbed should be rolled with a cultipacker after seeding, regardless of the seeding method used.

In addition to providing earlier grazing, planting winter forages into a prepared seedbed provides somewhat higher forage production over the entire winter and spring grazing period relative to other seeding methods. A three-year study in northwest Louisiana showed 55 percent higher seasonal production for annual ryegrass planted into a prepared seedbed compared to planting into a bermudagrass sod (Eichhorn, 1997).

Other work in Louisiana comparing annual ryegrass planted in a warm-season grass sod and a prepared seedbed reported nearly 55 percent less forage production prior to February from the sod-seeded ryegrass but comparable production from planting methods through the remainder of the season (Cuomo and Blouin, 1997).

Some tillage is imperative if a goal is to provide significant forage production during late fall and early winter.

While this seeding method offers the advantage of providing earlier grazing than other methods, it is also more expensive due to additional seedbed preparation and fertilizer costs. It is also more likely that livestock can bog on this seedbed because no grass sod is present to support the livestock. Finally, early planted annual ryegrass is more susceptible to fall armyworm infestations and blast (gray leaf spot) disease than later fall plantings.

Overseeding

The term “overseeding” generally refers to broadcast-seeding of winter annual forage crops over the sods of summer perennial grasses, with or without disking or other tillage. This planting method is less expensive than the prepared seedbed method since fewer tillage operations are performed. Also, potential erosion is reduced because the soil is always covered with some amount of vegetation. Reduced cultivation can help conserve soil moisture and make planting operations less dependent on climatic conditions. The summer pasture grass sod is usually firm and provides good footing to animals during the winter grazing season. Finally, if grazing is managed during



Figure 1. Forage growth by early winter from annual ryegrass planted in a prepared seedbed (left) and overseeded in a perennial warm-season grass sod (right).

the winter and spring, the summer grass sod can be encouraged to resume growth in the spring and provide grazing as the winter annual crop matures and dies out.

A few disadvantages are associated with planting winter forages into summer sods, and these should not be ignored when deciding on which seeding method should be used. First, the availability of winter grazing is often delayed, as mentioned previously. If overseeding occurs too early, the perennial summer grass sod will remain very competitive with the seedlings and could cause stand establishment problems. Finally, if the winter forages are not intensively grazed or cut for hay in the spring, they can retard the growth of the perennial summer grasses.

The amount of tillage used prior to seeding varies among producers from none to extensive. The need for tillage is influenced by many factors, including amount of vegetation on the soil surface, soil type, date of overseeding and forage species to be overseeded.

Optimum stands of winter forages can be obtained by broadcasting seed over a dormant sod without any tillage if this is done at the proper time, and the stubble height of the perennial grass sod is short. However, if overseeding conditions are not ideal, some tillage may be beneficial. In most cases, one or two light diskings before broadcasting the seed increases the chances of obtaining good stands. In instances where moderate- to large-amounts of soil have been exposed by tillage, it is advisable to cultipack the area after broadcasting the seed.

Sod Seeding

This method of seeding is similar to overseeding, but with sod seeding no tillage is performed, and the winter forage crops are planted directly into the perennial summer grass sod with a minimum or no-till drill. Since no tillage operations are performed, soil erosion losses with this method are minimal. This planting method has some of the same disadvantages as overseeding, such as delayed forage production, the need for later planting and potential to suppress early growth of warm-season grasses. The advantage of this planting method compared to broadcast overseeding is that the seed is planted directly in the soil. The drill required for seeding is relatively expensive to purchase but can be rented in some locales.

Guidelines for Overseeding and Sod-Seeding

The general guidelines for overseeding and sod-seeding are similar. Recommendations are:

- Make sure the summer sod is short at planting and kept short until seedlings emerge. Graze the sod to a height of 1 to 2 inches, or clip it to the desired height before planting, and keep it grazed short until seedlings start to emerge.
- Don't plant too early or too late. The best planting time depends on the weather and when summer grass goes dormant or growth is reduced by cooler weather. In most years, seeding should not occur before October in northern Louisiana or mid-October in southern Louisiana unless extensive cultivation is used. Seeding in December and later is usually less productive.
- Maintain a suitable pH and soil fertility level. Test your soil and apply any needed phosphorus and potassium before planting or during the planting operation. Lime, if needed, should be applied as far in advance of planting as possible.
- Delay nitrogen applications until the seedlings have emerged. Earlier application stimulates competition from the summer grass.
- Don't plant too deep. Small grains should not be planted deeper than 2 inches, and 1 inch is usually better. About 1/2 inch is suitable for ryegrass, and clovers should be planted at 1/4 to 1/2 inch deep.
- Watch closely for insect damage (primarily fall armyworms) during the first few weeks of seedling growth, and treat for control if a problem develops.
- After seedlings emerge, delay grazing until the seedlings are firmly anchored and about 6 to 8 inches high.

References

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