



Preparing Ahead for Winter Forage Production

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Winter grazing is an important component of forage production in Mississippi. Establishment of winter forages could be expensive and it is important to make sure that the investment is protected to ensure return in grazing potential and animal performance. There are several winter forages that could be used in Mississippi depending on the geographical location. These forages include annual ryegrass, wheat, cereal rye, oats, and annual clovers (arrowleaf, ball, berseem, crimson and hairy vetch). Several steps need to be considered to make sure that your winter forage production can achieve optimum potential:

Determine your soil type – Knowing your soil type will ensure that your winter pasture is well suited for you location

and will help meet your forage demands. Annual ryegrass and has good tolerance to soil acidity and excellent tolerance to poor drained soil and could be adapted to heavier soils and has late production into the spring. Wheat is poor tolerance to soil acidity and poor tolerance to poor drained soils, which might be better adapted to lighter soils. Cereal rye has excellent tolerance to soil acidity and fair tolerance to poor drainage. Cereal rye can also provide earlier grazing opportunities in the fall. Oats have fair tolerance to soil acidity and poor drainage. Annual clovers will have poor tolerance to soil acidity with the exception of crimson and hairy vetch. On the other hand, most of these annual clovers has poor tolerance to poor drainage with the exception of berseem.

Table 1. Advantages and disadvantages of cool-season annual grasses.

Forage Species	Advantages	Disadvantages
Annual ryegrass	<ul style="list-style-type: none"> ➤ Well adapted to poorly drained soils ➤ High biomass production 	<ul style="list-style-type: none"> ➤ Poor winter forage production (Jan-Feb) ➤ Very competitive with summer grasses due to its late maturity
Cereal rye	<ul style="list-style-type: none"> ➤ Most drought and cold tolerant of cool-season annual grasses ➤ Rapid growth in the fall 	<ul style="list-style-type: none"> ➤ Lower forage production due to earlier maturity ➤ Lower palatability at the boot stage ➤ Potential for ergot in seed heads
Oats	<ul style="list-style-type: none"> ➤ Early fall grazing ➤ Good average daily gains ➤ Excellent tillering ➤ High forage quality ➤ Ability to germinate in limited moisture 	<ul style="list-style-type: none"> ➤ Poor cold tolerance ➤ Poor drought tolerance after germination ➤ Highly susceptible to leaf diseases
Wheat	<ul style="list-style-type: none"> ➤ Good cold tolerance ➤ Drought tolerance ➤ Fall and winter forage production 	<ul style="list-style-type: none"> ➤ Least productive annual cool-season grass ➤ Low disease tolerance

Collecting a representative soil sample – Keep in mind that a good represented soil sample of your pasture will help determining fertility status and adjustments that might be needed prior to establishment of your winter pasture. A soil sample of at least 15-20 cores should be collected and it should not represent more than 15 acres. If your pasture is bigger in size, it is recommended to split the field and collect two or more samples. Soil pH that is less than 5.5 could severely impact fertilizer uptake and efficiency. Lime will be required if legumes are incorporated into the system. Nitrogen application should be delayed until there is at least 3-inches of growth to ensure uptake and utilization. Mixing nitrogen fertilizer with the seed could affect the embryo in the seed and ger-

mination. Nitrogen could also affect the inoculum in the legumes. Nitrogen applications should be split to ensure more uniform forage production during the growing season. Phosphorous and potassium should be incorporated at planting.



Establishment method (seedbed, planting method, rate, dates) – Depending on the type of situa-

tion, producers might be using a prepared seed bed or plant into an existing sod by either using a drill or broadcasting the seed. A cleaned, tilled seed bed needs to be firm. Using a drill will provide better seed to soil contact, will require lower seeding rates and will ensure a quicker establishment. When planting into an existing pasture (bermudagrass or bahiagrass), managing the amount of biomass residue is very important. In this case, mowing or grazing to about 2-inches will improve seed to

Table 2. Comparison Planting Methods for cool-season annual grasses.

Planting Method	Advantages	Disadvantages
Broadcasting	<ul style="list-style-type: none"> ✓ Faster planting speed ✓ Lower equipment cost ✓ Ability to mix with fertilizer 	<ul style="list-style-type: none"> ✓ Higher seeding rate ✓ Lack of depth control ✓ Higher risk of stand failure ✓ Delayed grazing potential ✓ Possible delay in summer grasses breaking dormancy
Drilling	<ul style="list-style-type: none"> ✓ Better soil to seed contact ✓ Better plant spacing ✓ Lower seeding rate ✓ Proper planting depth ✓ Earlier grazing potential 	<ul style="list-style-type: none"> ✓ Higher equipment cost ✓ Slower planting speed ✓ Need for better weed control

soil contact. Also, burning the field with contact herbicide such as Paraquat might provide some advantage at planting. When planting into an existing sod, using a no-til drill might be ideal. Broadcasting the seed will increase seeding rates to ensure a good seed to soil contact. Overseeding a sod can help provide a more firm seed bed and reduce damage caused by grazing livestock. However, overseeding a pasture is usually 4-6 weeks behind in grazing potential compared to a well-prepare seedbed.

Seeding rates might vary depending if the forage species is being planted as a monoculture (alone) or mixed with a legume or other grasses. Contact your local County Extension office for seeding recommendations. Cool-season annual forage crops should be planted from mid-September through mid-October. Keep in mind that optimum planting date will vary with location and the selected type of winter pasture.

Selecting the appropriate variety for you area – Selecting a cool-season variety could be complicated, especially with annual ryegrass due to the number of varieties that are commercially available. It is recommended to use the Forage Variety Trial as a guide to look at varieties that might perform better. Selection should be based on data collected for a minimum of three years at a location or by looking how a variety might have performed across several locations in the state. When selecting a variety is also important to ensure that you are using a certified variety with a good germination and purity. For more information related to cool-season forage varieties that might fit in your area, contact your local County Extension office or visit MSU Forage Variety trials at <http://mafes.msstate.edu/variety-trials/forage.asp>.

Establishment of cool-season annual grasses has a high cost associated with it. At the same time, they can reduce the amount of hay and supplement needed during the winter, especially when feeding low quality forage. A producer should determine ahead of time what variety to plant to compare prices from different sources, how many acres and seed are needed. To be profitable producers need to pay attention to variety selection, planting dates, planting method, seeding rates, proper fertilization and proper forage utilization. By taking those steps and having good weather on your side, this could determine the net return from your winter grazing.

For upcoming forage related events visit:
<http://forages.pss.msstate.edu/events.html>

- August 27, 2014— Cattlemen College, Town Creek Farm, West Point, Mississippi
- August 28, 2014— Cattlemen College, Mathis Farm, Brookhaven, Mississippi
- October 3, 2014— Mississippi Hay Contest Entries Due
- November 14, 2014— Mississippi Forage & Grassland Annual Conference, Verona, MS.

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