



Establishing and Utilizing Annual Cool-season Forage Crops

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Rocky Lemus
Extension Forage Specialist

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Visit us at: <http://mississippiforages.com>

Planting Considerations

Temperature

Although small grains are cool-season plants, they do require temperatures warm enough for the plants to maintain growth. When average temperatures drop below 50 degrees, plant processes and growth begin to slow. If early grazing is needed, begin planting in early October to make use of fall rains, to graze by mid-November under good growing conditions. Earlier planted oats or wheat may try to head out before the onset of winter if not grazed. Armyworms can be a problem in early-planted small grains.

Establishment

The first step in establishing winter annuals is selecting a suitable site. The best soils for winter annuals are well-drained and fertile. Winter annuals can be established using tillage or no-till (sod seeding). The primary advantage of using tillage to establish winter annuals is that stands can be planted earlier and established faster to produce more fall forage when competition from existing sod is absent. Winter annuals can be broadcast planted, but risk of failure is higher than with drilling. Broadcasting is better suited to ryegrass than to small grains. Light disking before or after (or both) broadcasting may improve soil-seed contact and result in better stands. When seed is broadcast planted, planting rates should be increased by at least 20 percent. Winter annual seed can be mixed with fertilizer and broadcast planted with a fertilizer spreader. However, if this is done, it is vital that seed be planted immediately after mixing because prolonged contact with fertilizer may kill seeds.

Competition from warm-season sods that have not yet gone dormant is the most serious problem for early sod-seeding of winter annuals. Warm-season grass on no-tilled sods must be controlled in some way prior to planting winter annuals. Actively growing warm-season grasses rob water and soil nutrients from winter annual seedlings, and shade from a tall grass canopy slows down seed germination and seedling growth. Even if already dormant, thick dried grass residue also shades seedlings and can interfere with correct seed placement when drilling. For best annual stands, warm-season grass residue should be no more than 2 inches in height when annuals are drilled, and the warm-season grass should not be actively growing. Residue can be managed by close grazing, bush-hogging or making hay prior to drilling. Shallow (1 inch) disking of sods to destroy no more than one-third of the sod before or immediately after planting may allow earlier planting and earlier growth of winter annuals on sandy or loamy soils. Disking of heavy clay soils also is undesirable because it increases roughness of the field. Establishment of winter annuals into bahiagrass is likely to be more difficult than into bermudagrass because of the extremely competitive nature of bahiagrass, which grows later into the fall than bermudagrass. The easiest method of sod control is to delay planting until the sod is dormant or nearly so. Overseeding permanent grass pastures with winter annuals usually decreases annual yield of the perennial grass to some extent as a result of shading and competition in spring. This is especially a concern with annual ryegrass because it grows so late into summer. Pastures should be stocked heavily enough in April and May to prevent formation of a dense canopy of headed-out ryegrass that will shade the understory warm-season grass and delay its growth.

Seeding Depth and Planting Rates

Recommended planting date for winter annuals in southern Mississippi late September to late October. In northern Mississippi winter annuals are sod-seeded in early September to early October. Ryegrass and clover seeds should be planted shallower (1/8 to 1/4" depth) than large seeded small grains (1/2 to 1" depth). Ball clover should be broadcasted. Planting rates vary depending on the planting method used and the species mixtures. Mixing ryegrass seed with fertilizer and broadcasting with spreader equipment is popular. Plant the seeds the same day they are blended, especially where high rates of nitrogen fertilizer are used. If legumes are included in the seeding mixture, do not mix freshly inoculated legume seed with fertilizer because fertilizer can damage the inoculant.

Cultivar Selection

When selecting a variety, the key is to select one with a proven track record of good performance in the same region where it is to be used. Adaptation to soil conditions (soil type, drainage, pH), local climate (rainfall, minimum and maximum temperatures) and tolerance or resistance to local plant diseases and insect pests are the critical issues. When planting a cool-season pasture, it is wise to plant a mixture of species as each has slightly different growth habits. Planting mixtures of winter annual species stretches the supply of high-quality forage over a longer period when an early-maturing species is grown in combination with a later-maturing one. This will extend the grazing time and prolong the productivity of the pasture. Inclusion of legumes in the mix is also a good idea. Annual ryegrass is usually the most common planted species. It could also be mixed with small grains (rye, wheat, oats, and triticale). Commonly used mixtures are wheat/annual ryegrass and rye/annual ryegrass. A three-way mixture, such as wheat/rye/annual ryegrass, provides early-, mid- and late-season grazing. For variety testing information visit <http://mafes.msstate.edu/branches/mainstation.asp?location=varietytesting>.



Fertility

The three primary nutrients of concern for pastures in cool-season annual pastures are nitrogen (N), phosphorus (P), and potassium (K). Grasses generally use nitrogen (N), phosphorus (P) and potassium (K) in a 4-1-3 ratio. Testing a soil sample is the best way to determine which nutrients are adequate, which are lacking and at what amounts. With a soil analysis, a fertility program can be structured to add the insufficient nutrients. Without the analysis, nutrients may be wasted and add to ground or surface water pollution, or be insufficient for maximum production.

Legumes

Legumes can improve the production and nutritional value of pastures while reducing nitrogen fertilization requirements. It is important that a pH of at least 6.0 is maintained. A good legume stand should be 30% to 40% clover in the pasture. Legumes have several benefits:

(1) they reduce the need for nitrogen fertilizers (they can provide from 50 to 200 lb N/ac/yr to the pasture), (2) they improve seasonal distribution of forage dry matter by boosting yields and extending the grazing season and (3) they improve forage quality by increasing protein levels and overall digestibility of the forage.

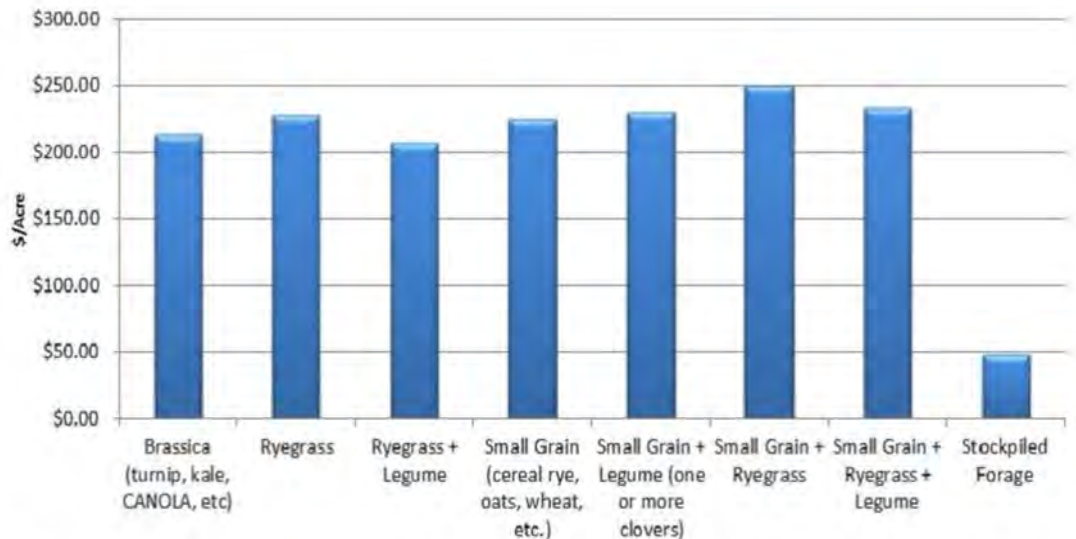


Figure 1. Total cost (establishment and maintenance) of various winter annual forage systems for the 2013-2014 growing season. Source: Lacy, 2013. Winter Annual Cost for 2013-2014. Southeast Cattle Advisor. Univ. of GA.

Several clover species are suitable for winter forage production. **Red clover** also is an upright, crown-forming legume adapted to tall grazing heights and long rest periods. Although it is a short-lived perennial throughout much of the U.S., it tends to behave as an annual in the South. Red clover is more persistent under rotational grazing. **White clover** is a low-growing, clone-forming legume well adapted to continuous grazing. In the northern regions of the U.S., it can be a long-lived perennial. In the far southern regions, it tends to behave as an annual. **Arrowleaf clover** has been a highly productive, annual clover with excellent reseeding potential. It matures later than most annual legumes and can grow 2 to 4 feet tall. Arrowleaf clover remains more productive if grazed to a height of 2 to 4 inches in early spring. Regrowth is limited after cutting for hay. **Crimson clover** also is a winter annual legume. Although it produces excellent forage, it has relatively poor reseeding abilities, necessitating reseeding each fall. Crimson clover will produce more forage at lower temperatures than other clovers and can be grazed throughout winter. Hairy vetch is a dependable, widely adapted, cool-season annual legume. If allowed to mature, hairy vetch has good reseeding capability. **Ball clover** is very tolerant to poor drainage. Bloat can be a problem. Ball clover is more tolerant to acidity than crimson clover. It tolerates heavy grazing and has good reseeding potential. **Berseem clover** is tolerant to poor drainage and it is very late maturing.

Grazing Management

Winter annual pastures are suitable for beef and dairy cattle, sheep, goats and horses. Forage quality is excellent. Consider the plant first when deciding on a grazing management plan. Plant leaves capture sunlight and convert it into energy. Without leaves, the plant cannot create energy. If the leaf area is reduced radically, plants start robbing the root system to replace the foliage. The root system starts to die if plants are not allowed to maintain sufficient foliage to develop or regrow after grazing. Before turning livestock on the field, forage should be at least 6 to 8 inches tall, 4 to 6 weeks after emergence and well tillered and well rooted. To maintain enough leaf area for continued growth, do not allow animals to graze forage to below 3 to 4 inches.



Stocking rate is a critical factor in the success of winter annual pastures. If stocking rate is too high during periods of slow grass growth, overgrazing will decrease the ability of the grass to recover during favorable period. Stocking rate will vary according to the productivity of the particular pasture and the amount of nitrogen applied, but 1 to 1.5 (fall/winter) and 1.5 to 2 (spring) stocker calves per acre is a realistic target in most cases. The minimum ADG for profitable stocker cattle production is 1.5 pounds per day, and this goal is easily achieved on winter annuals. Winter annual pastures can provide an abundance of high-quality forage. Producers can earn the most profits when they use best-management practices that fertility, variety, and grazing management.

Upcoming Forage Events:

Forage Field Day, September 14, Philadelphia.

Marshall Co. Forestry & Livestock Field Day, September 28, Holly Springs

Hay Contest, October 4, Sample submission due

Grasslander Award, October 4, Nominations due.

SE Mississippi Forage Field Day, October 25, Petal (Simmons Farm).

NW Mississippi Forage Field Day, November 1, Batesville (Gordon Farms).

Mississippi Forage & Grassland Annual Conference, November 15, Hattiesburg (Multipurpose Center).

More detail information on forage related events visit:

<http://forages.pss.msstate.edu/events.html>

<http://mississippifgc.org/events.html>



Fall Forage Field Day Series



Extending the Grazing: Stockpiling and Winter Grazing Management

9:00 am to 12:00 PM

Southeast Mississippi Forage Field Day (Perry Co)

October 25, 2013

Simmons Farm
367 McKenzie Rd.
Petal, MS

Let's reduce hay supplementation and be more economically sustainable by extending the grazing season.

Northwest Mississippi Forage Field Day (Panola Co)

November 1, 2013

Gordon Farms
1303 Curtis Rd.
Batesville, MS

Come and join these events to learn more about grazing managements that can improve forage utilization as well as the nutritive value of stockpiled forages. The SW Mississippi field day will focus on stockpiling of warm-season grasses (bahiagrass and bermudagrass) to close the gap between summer grazing and annual ryegrass and help reduce hay supplementation. The NW Mississippi field day will focus on stockpiling tall fescue and how clovers could help mitigate fescue toxicosis. Grazing demonstrations will highlight these field days.

Producers interested in attending the event should register at <http://mississippiforages.com> or contact **Ms. Kathy Johnson** at (662) 325-2701 or kjohnson@pss.msstate.edu. The event is free to the public, but registration is required for meal planning. We look forward to seeing you at one of the Fall Forage Field Days.

Sponsored by Mississippi Forage & Grassland Council, MSU Forage Extension Program, Grazing Lands Coalition Initiative, Soil & Water Conservation Commission and Mississippi Cattlemen Association



Forage First : Innovating Beef Production

Mississippi Forage & Grassland Conference

November 15, 2013 • Forrest County Multipurpose Center
952 Sullivan Drive, Hattiesburg, MS 39401

Come for the state's best program, exhibits and networking of the Mississippi's Forage Industry. Take home new ideas, knowledge and practices on forage production, management and utilization to make Mississippi's livestock industry more profitable and sustainable.

Conference Schedule

- 8:00 – 8:30 Registration / Visit Exhibits
- 8:30 – 8:40 Welcome and introductions
- 8:40 – 9:25 V. Mac Baldwin – Turning Annuals into Premium Beef
- 9:25 – 10:10 Eddie Prince – Do You Know What You Think About Grazing?
- 10:10 – 10:30 Break / Visit Exhibits
- 10:30 – 11:15 Shari Swenson – AR 300-Day Grazing Program.
- 11:15 – 12:00 Dr. John Blanton – TBA
- 12:00 – 1:00 Lunch & Award Program
- 1:00 – 2:00 Business Meeting (Elections), Evaluation, Door Prizes and Adjourn



Other Activities

Product & Services in the Exhibit Area • Poster Presentations • Hay Contest • Mississippi Grasslander Award • Award Lunch • Networking Opportunities

MSFGC Conference Details

Conference Registration

Call, email, or go to website for registration information and form at Mississippi Forage & Grassland Council : <http://www.mississippifgc.org>
Email: info@mississippifgc.org; Phone: (662) 325- 2701 or contact your local County Extension Office



Sponsored by Mississippi Forage & Grassland Council, MSU Forage Extension Program, Grazing Lands Coalition Initiative, Soil & Water Conservation Commission and Mississippi Cattlemen Association



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Send registration to: Mississippi FGC Conference; Attn: Ms. Kathy Johnson; P.O. Box 9555; Mississippi State, MS 39762

Conference Registration Form

Name: _____
Address: _____
City, State and Zip: _____ County: _____
Phone/Cell: _____ Email: _____
Pre-registration Fee - (MSFGC Non-member = \$25.00, Current Member = \$15.00) (**Deadline – November 1, 2013**)
On-site registration Fee – (Non-member = \$30.00, Current Member = \$15.00, Membership + Conference = \$50.00)
Student/Youth Registration Fee - \$15.00
attending _____ # of students/youth attending _____
Amount Enclosed \$ _____
Names of additional participants: _____
Made checks payable to Mississippi FGC or to pre-register and pay at the door visit: <http://mississippiforages.com>