
FORAGE: WINTER ANNUAL GRASSES

for grazing



Winter forage production is important to most types of livestock in Mississippi. Beef cattle producers depend heavily on winter annual forages, particularly in stocker grazing programs and where fall and winter calving is practiced. Dairymen also depend on winter annuals for forage during the early fall and late spring as well as the winter season. These forages also make excellent feed for horses and other livestock.

Winter Grazing Crops

Small Grains (Cereals)—Wheat, oats, and rye are the major small grains used for winter grazing. Grains are best adapted to tolerate the heat following early plantings in this order: oats, rye, and wheat. In extreme south Mississippi, wheat often is damaged by the heat when planted around September 1. For very early plantings, oats usually grow better below Highway 84. This is an important consideration where the quickest grazing possible is needed.

Oats are the least cold tolerant of the small grains. Wheat and rye have good cold tolerance and grow best with marginal soil temperatures. Rye is recommended for cold, wet, clay soils. Rye provides the least spring grazing, as it often matures by early to mid-April.

Ryegrass—The most important winter annual grazing crop in the Southeast, ryegrass is the backbone of any winter grazing program in Mississippi. Small grain grown in combination with ryegrass gives earlier fall grazing and increases the total grazing days on a given field. In small grain-ryegrass combinations, the small grain contributes most during the fall and through midwinter. Ryegrass predominates from late winter through late spring. To gain the advantage of the earliness of the small grain and the persistence of the ryegrass, plant on fallowed, prepared seedbeds between one-fourth and one-third of the total acreage in a combination, and plant the remainder in only ryegrass. Then, small grain:ryegrass pastures can be grazed heavily in November and early December, allowing ryegrass planted alone to develop good growth before grazing begins.

Mixtures with Legumes—Cool-season annual legumes grow well with winter annual grasses. The need to improve forage quality and reduce nitrogen costs can make the winter annual legume-grass mixtures ideal for many situations. The most common annual clovers that best fit these mixtures are crimson, arrowleaf, berseem, subterranean, and ball.

Red clover, a biennial, is increasing in popularity as a legume to grow with ryegrass and ryegrass-small grain

mixtures. Red clover grows well alone or mixed with other clovers such as crimson. Red clover grows well throughout the cool season and extends spring production because it grows later into the spring than other annual clovers except Meechee arrowleaf.

When overseeding or sodseeding these cool-season forages into permanent summer pastures, you may want to add clovers. Approximately 6 to 8 pounds of red and 2 pounds of white per acre make a good mixture. The red clover gives additional spring growth and the white clover remains as a perennial in the permanent pasture where light and moisture are adequate. See Extension Information Sheet 910 *Cool-Season Legumes* for production practices on these legumes. Extension Information Sheet 1083 *Inoculating Forage Legumes* gives details on forage legume inoculation.

Land Selection

Winter grazing areas need soils that hold up well for livestock without bogging during wet weather. Good surface drainage is absolutely necessary to keep the winter crop growing and to give the greatest number of grazing days. Soils that have poor internal drainage can become waterlogged or compacted, which reduces the forage produced, particularly in January, February, and early March. Well-drained, slightly rolling fields produce the most forage and usually the greatest number of grazing days.

Summer Fallow

One of the keys to much of Mississippi's winter grazing is fallowing in late summer. Till the soil in July or early August if the soil has a low soil erosion potential; always till with the contour. This tillage opens up the soil and lets it take in moisture. It destroys weed growth and allows the tilled-under vegetation to decompose. Repeat tillings if additional weed growth develops or if the first tillage wasn't good enough. Don't expect early grazing without summer fallow and good seedbed preparation.

Liming and Fertilization

Maintain a pH of at least 6.0 for maximum production from grasses and legumes. Grasses are not as sensitive to low pH as legumes, but unless you adequately lime acid soils, you will not get maximum plant growth and fertilizer. Lime fields that test pH 5.8 or lower.

A soil test analysis is needed to determine the phosphate and potash requirements for your soil. The results of

a soil test depend on the soil sample and information you submit. If soil test results indicate you need 60 to 80 pounds each of phosphate and potash, then apply the equivalent of 300 to 400 pounds of 0-20-20, or 300 pounds of 8-24-24. Without a soil test, you may add too much or too little phosphate and potash. Nitrogen is needed for establishment and is the element that grows the grass once you get a stand. Use about 65 pounds of nitrogen at planting. This is equivalent to 200 pounds of ammonium nitrate. All three needed elements could be provided by 500 pounds of 13-13-13 per acre.

Disk or harrow the fertilizer into the soil before seeding. Top-dress nitrogen in late November or early December. Use the equivalent of 200 pounds of ammonium nitrate per acre. Top-dress again in late February. Winter grazing crops can use about 1 pound of actual nitrogen per acre for each day of grazing. Broadcast the nitrogen when the crop is grazed down.

Seeding

Mixing ryegrass seed with fertilizer and broadcasting with spreader equipment is popular. This method offers easy planting, especially if you have limited planting equipment. When using this planting method, control the following factors to get satisfactory results:

- Blend the seeds thoroughly with the fertilizer.
- Plant the seeds the same day they are blended, especially where high rates of nitrogen fertilizer are used.
- Use narrow spreading patterns. Spread one-half of seeds at normal spreading width, then spread the other half by splitting the original tracks.

Do not mix freshly inoculated legume seed with fertilizer because fertilizer can damage the inoculant.

The planting date varies with location. Seeding can begin as early as August 15 in north Mississippi, whereas in extreme south Mississippi, the planting of ryegrass should not begin until mid-September. The seeding rate varies with the crop. Use 40 pounds of ryegrass alone or 30 pounds of ryegrass plus 90 pounds of small grain. Broadcast the seed, and cultipack or harrow following seeding. If you use a grain drill to plant seed, you can reduce ryegrass seeding rates. In dry weather, winter grazing planted with a grain drill usually provides earlier grazing than broadcast seedings.

Stocking Rate

Well-fertilized winter annuals can carry 600 pounds of beef per acre. This means they can carry two calves weighing about 300 pounds each or one and one-half calves weighing 400 pounds each per acre. During good spring growth, 1 acre can often carry one dairy cow. When pastures are first stocked, there may appear to be a surplus of forage, but a reserve is necessary for the cold months when plant growth is slow. Be careful not to allow crops to grow too tall before grazing, because forage will be wasted and

small grains may be damaged by cold weather.

Pest Control

Weeds—When you plant in September under good moisture conditions, henbit, buttercup (*Ranunculus* sp.), pigweed, and other broadleaf weeds can be a problem. You can easily control pigweed and other small-seeded broadleaf weeds with 2,4-D once the grazing crop is past the seedling stage.

Wild turnip, wild mustard, buttercup, henbit, and dock are winter weeds that start growing as nights get cool.

For additional information, including control measures, see Extension Publication 1532 *Weed Control Guidelines for Mississippi* or Extension Information Sheet 945 *Weed Control in Pastures*.

Insects—Major insect problems on winter grazing crops are fall armyworms and aphids. If you plant early, be prepared to control fall armyworms because they are a problem in most years. Once started, the insect population can build very rapidly. Where a combination of small grain and ryegrass is planted, without close inspection, armyworms can build under the fast-growing small grain and destroy the young ryegrass before injury is evident. Aphids are not a problem every year, but watch grazing crops when you see increased aphid populations on other crops. Contact your county Extension agent for current control measures.

Diseases—The most potentially severe disease on ryegrass in central and south Mississippi is the fungus *Piricularia grisea*, commonly called "blast." This disease is triggered by unseasonably hot, humid conditions in late September and occurs mostly on early-planted ryegrass. You cannot predict when the disease will occur, so these alternatives are suggested if you have a history of blast disease:

- Plant only oats, wheat, or rye through September 20. Seed 120 pounds of oats, 90 pounds of wheat or rye, then overseed with ryegrass after October 1. Ryegrass overseeded just before small grain is grazed allows cattle to walk in seed.
- After September 20, seed ryegrass with small grain at recommended seeding rates.
- Seed ryegrass alone after October 1 at the rate of not more than 40 pounds per acre.

Other than "blast," ryegrass is usually disease free until late spring when leaf rust can severely infect common ryegrass and reduce late-spring grazing. It is important especially in south Mississippi to plant a rust-resistant variety.

The small grains are susceptible to several seed-borne and fungus leaf diseases. Use a fungicide seed treatment on small grains at planting. Rusts are usually the most troublesome of the leaf diseases on small grains. It is important to plant recommended varieties because they will have the best disease tolerance.

Grazing Management

Height to Graze—Begin grazing when grass reaches 6 to 8

inches high. On fallowed land and with normal rainfall, you may start grazing by late October. However, in many years, it will be mid-November before grazing is ready to be stocked. Graze small grain or small grain-ryegrass mixtures first. Grazing too early reduces forage production and causes serious shortages later in the winter.

Avoid Overgrazing—Extended periods of extremely cold, wet weather or dry periods can cause a shortage of forage. Grazing the crop shorter than 2 to 3 inches in cold weather badly damages the stand and slows regrowth.

Cross Fencing—When you use a high stocking rate, cross fences are absolutely necessary. You get the most efficient use of the forage when you allow the pastures to grow 6 to 8 inches tall and then graze off by concentrating a large number of animals on a relatively small area. The forage can be grazed off and the animals moved to allow regrowth.

When animals are given access to large areas of succulent grazing, they usually graze the shortest tender growth and allow some areas to grow too tall and become less palatable. Rotation of grazing through use of adequate cross fences helps eliminate this problem and gives maximum use of the forage produced. Electric fences can help where permanent fences are not adequate.

Limit Grazing—Limiting the grazing period each day can stretch available grazing and reduce per-animal costs, particularly for brood cows. Research and farmers' experiences show you can winter a cow with a young calf satisfactorily with one filling or about 3 hours' grazing each day, along with a partial feeding of fair-quality hay or silage. Allowing cattle to graze only long enough to get a fill reduces trampling damage and contamination from manure.

No additional protein supplementation is recommended for cows getting a fill each day from well-fertilized winter pastures. Also, giving calves full-time access to grazing with creep gates or other methods, such as removing bottom wire from short sections of cross fence, is a recommended practice.

Overseeding and Sodseeding

Sodseeding and overseeding a part of your permanent summer pasture sod are important practices in any full-season quality forage production program in Mississippi if you want at least 10 months of grazing. The amount of each or the best methods to use vary according to feed requirements, type of permanent sod, and whether it is the main winter grass planted or is used as a supplement for prepared seedbed planting.

Overseeding

Most of the pasture acreage that fits this program is permanent sods of bahiagrass and hybrid and common bermudagrass. Excess grass must be grazed off, cut for hay, or clipped down closely by late October. If you plant ryegrass into sod higher than 3 inches, you usually will have

poor results. A burndown herbicide may be beneficial, particularly in south Mississippi. Though you can seed ryegrass on the surface with no soil disturbance, it will germinate slowly and probably not give any grazing before February.

Disturbing the soil without destroying the permanent sod can be achieved by running a spring tine-type pasture renovator on the contour to break up the sod. This loosens the compacted surface area and lets water and organic litter move into the root area of the sod without destroying the established sod. Seed 40 pounds ryegrass per acre, harrow to smooth, then cultipack for quick germination. This renovation may also improve the permanent pasture the next summer by increasing better use of stored moisture and nutrients. You can also run a disk (with angle straightened) on the contour to streak or slightly till the sod area. When you use the disk, sow ryegrass seed, and then harrow at a 45-degree angle to smooth the field and cover some of the seed.

If you use light seedbed preparation, the ryegrass can usually be grazed by early February. Fertilize ryegrass that is overseeded about October 20 or later with 60 to 70 pounds of actual nitrogen at planting time so the grass can get maximum growth before cold weather. You may apply lime, phosphate, and potash for the whole year at this time. Using high rates of nitrogen before October 20 below Highway 84 may stimulate the permanent sod, particularly bahiagrass, and cause some competition with the young ryegrass. Do not begin overseeding in most cases before October 1 in north Mississippi, October 10 in central Mississippi, and October 20 in south Mississippi.

Fertilize overseeded permanent pasture in mid-February with another 60 to 70 pounds of actual nitrogen (equivalent to 200 pounds ammonium nitrate) per acre. Graze it heavily in April and early May to keep the ryegrass from growing up and setting back the permanent grass.

This program works especially well for brood cows that are calving in the fall and winter. It also serves as a back-up for a stocker grazing program. Do not overseed more than one-half of permanent pastures because you may have problems keeping the ryegrass grazed.

Sodseeding

Planting an annual crop in pasture sod with a drill-type seeder that only disturbs the planted area is called "sodseeding" or no-till. It saves time and labor because you can plant and provide adequate soil disturbance in one trip over the field. A special value of sodseeding in permanent pastures is that these areas can be grazed when the ground is wet.

Sodseed permanent pastures when summer and fall grazing is finished. Sodseed silage and temporary summer grazing acreage after these crops are harvested. Sodseeding is excellent in heavy clover areas, allowing interplanting of a cereal or ryegrass with clover for a better grazing combination. Sodseeding on permanent pastures may begin in

early October in north Mississippi and continue until mid-November in south Mississippi.

Sodseed cereals such as oats, rye, or wheat in combination with ryegrass. Use small grains only in the early plantings. Seed 100 pounds of cereal and 25 pounds of ryegrass or 35 pounds of ryegrass alone. When planting with the sodseeder, broadcast fertilizer just before or after seeding. Apply 60 to 70 pounds of actual nitrogen on areas sodseeded. Topdressing sodseeded grazing crops is necessary in mid- to late February. Usually these crops need 60 to 70 pounds of actual nitrogen for spring growth. Sodseeded winter crops need a full rate of fertilizer to produce high yields.

Do not graze sodseeded areas until they are well established, preferably 6 to 8 inches tall. Sodseeded pastures provide late winter and early spring grazing. Stock them heavily in late March, April, and May to graze out the ryegrass so that it won't set back the permanent sod. If close grazing is not possible, harvest the excess forage as hay or baleage.

Quality for Effort

Overseeding or sodseeding on permanent pasture sod allows you to get more cow-grazing days from each acre of grass if you manage the pastures properly. Never overseed

or sodseed more than one-half of your pasture. Seed only the amount of pasture your cattle can heavily graze during the spring.

Summer pastures that are not overseeded or sodseeded grow in April and May to produce early summer grazing or a hay cutting while the ryegrass areas are being grazed. If overseeded ryegrass is to be cut for hay, do it by early May or your summer grass pasture will be severely penalized.

When renovating for overseeding or when sodseeding, always run on the contour to reduce erosion and increase soil moisture storage. This is a good time to add a clover to your pasture mixture. White, red, arrowleaf, crimson, subterranean, berseem, and ball clovers are all adapted to certain areas of Mississippi and add quality to your permanent pastures. Clovers increase pasture quality and reduce the amount of commercial nitrogen needed by the grass, particularly in the late winter and spring.

Always inoculate any clover planted with the particular inoculant that is specific for that clover. Shotgun mixes of inoculants are not satisfactory, and clover will not produce its potential in nitrogen unless properly inoculated. A permanent summer pasture requires more management if overseeded or sodseeded with ryegrass or legumes, but the improved quality justifies the effort.



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