



TIMELY INFORMATION

Agriculture & Natural Resources

AGRONOMY AND SOILS, AUBURN UNIVERSITY, AL 36849-5633

WINTER ANNUAL FORAGES: PREPARED SEEDBED PLANTING GUIDELINES*

Winter annual forage crops include the small grains (rye, wheat, oats, barley, and triticale), annual ryegrass, and various legumes including arrowleaf clover, crimson clover, and vetches. Because of Alabama's mild climate and good rainfall distribution, winter annual forage crops will make growth during some of the coldest months of the year. This is important because winter annuals can help reduce hay needs. Winter annuals are good yielders and also produce high quality forage that results in outstanding animal performance.

Winter annuals planted on a prepared seedbed provide excellent quality grazing for virtually any type of livestock, although from an economic standpoint such pastures are easier to justify for some types and classes of animals than others. They are particularly suitable to use to provide grazing for stocker calves or dairy animals. However, they can also be used for swine grazing, for horses, for beef cow-calf herds, and for other species or classes of grazing animals. The higher the cost of hay, the more feasible it becomes to plant winter annuals on prepared land to provide nutrition for animals having relatively low nutritional requirements.

Site Selection

Plantings of winter annual forages on a prepared seedbed should be located on well-drained, productive, and reasonably level land; the type of land that would be well suited for growing summer row crops. The site selected should not be subject to prolonged overflow, and excessively shallow soils should also be avoided.

*Prepared by Dr. Don Ball, Extension Agronomist/Professor, Department of Agronomy and Soils. 120 Extension Hall, Auburn University, AL. 36849.

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Maximum forage production depends on a sound soil fertility program. The place to start such a program is with a soil test several months before planting. It's helpful to start early since it takes time to collect soil samples, have them analyzed, and obtain and apply the recommended amounts of fertilizer and/or lime. Getting started early will also provide the time and opportunity to locate the most appropriate type (s) of fertilizer at the best price.

It is desirable, if possible, to plow or heavily disk the area that is to be planted to winter grazing several weeks prior to planting. This may help conserve soil moisture from subsequent rainfall, it will allow the soil to settle, and will allow decomposition of plant residues. Plant residue that has not decomposed prior to planting may tie up nutrients, interfere with planting, or harbor harmful insects. If the soil pH is below 5.8, lime will be recommended; the quantity recommended will depend on the type of soil. If lime is needed, it will be most effective when incorporated into the soil after the land has been broken, but prior to seeded preparation.

Species Selection

Potential benefits can be reduced by poor decisions as to what species of winter annual forages to plant. Small grains (rye, wheat, oats), ryegrass, and annual legumes (arrowleaf clover, crimson clover, vetch, etc.), are the basic types of forages used for winter grazing in Alabama. Mixtures of two or more species are usually more productive and profitable than using a single species, because planting multiple species usually results in a longer grazing season.

The most important factors affecting which species are best to plant are location and the dates grazing is to be begun and ended. Location is important because some species are better adapted or make a greater contribution in certain areas of the state or on certain types of soils. The date grazing is to be ended should influence species selection because some fields planted to winter grazing are turned under in the spring before some winter annual species have entered their main period of growth.

Most producers who plant winter annuals for grazing will benefit by including annual ryegrass as a component of the winter grazing mixture, regardless of other species used. The exception is when grazing of winter annuals is to be terminated in early spring. Ryegrass makes a great deal of high quality growth in the spring, and also helps form a thick sod that is beneficial during wet weather.

The primary contribution a small grain makes to a winter annual mixture is more fall and winter growth than ryegrass or annual clovers. As compared to ryegrass alone, small grain increases autumn and winter growth more in north Alabama and central Alabama than in south Alabama. Near the Gulf Coast an argument can be made for planting ryegrass only (or ryegrass and a clover).

Wheat or rye can be used successfully for grazing throughout Alabama. In the case of wheat, variety selection is particularly important since some varieties were developed strictly for grain production. In addition, some wheat varieties that make good season-long forage yields are not good producers in fall and early winter. Such varieties might be good choices for silage or hay, but offer no advantage over ryegrass as a spring grazing crop. In central and southern

Alabama many producers have been successful with oats, but oats are less cold hardy than wheat or rye and also tend to have more disease problems. However, animal performance on a healthy, thick stand of oats is superior to that on wheat or rye. Some producers plant an equal number of pounds of rye and oats (the same number of pounds in total as if only one small grain species is planted) along with annual ryegrass.

It can be very profitable to plant an annual legume with small grains and ryegrass. Legumes may improve forage quality and animal performance, they fix nitrogen that can reduce fertilizer costs, and they can increase total forage production and may extend the grazing season.

The two legumes that are generally the most logical choices for winter annual pasture mixtures in Alabama are crimson clover and arrowleaf clover. Crimson clover makes most of its growth from mid-February to mid-April and thus is best suited for use in fields where grazing will be terminated early. Arrowleaf clover makes most of its growth in April and May. Arrowleaf clover can be grown statewide in Alabama (except in wet areas or soils having a pH outside the range of 5.8-6.5), but does especially well on the sandy, Coastal Plain soils in roughly the southern half of the state. Vetches tend to make their growth during a relatively short period of time in spring; thus they are more frequently used in fields to be harvested as hay or silage rather than in pastures.

Variety Selection

Each year, Auburn University researchers evaluate small grain and annual ryegrass varieties in trials conducted at various locations throughout Alabama. An annually-published Agricultural Experiment Station publication titled, “Small Grain Variety Report” gives detailed information regarding the performance of small grain varieties in trials throughout the state. Also, an annual-published “Ryegrass Variety Report” compares the performance of ryegrass varieties. This is also available on the website: www.alabamaforges.com. Click on “Experiment Station Forage Publication List” and scroll down to find small grain and ryegrass variety information.

It is advisable to review variety trial data before making variety decisions. It simply doesn't make sense to plant varieties that are not known to be adapted to Alabama conditions or that are not very productive. In all cases, quality seed (preferably certified) with a high germination percentage should be used.

Seedbed Preparation

Preparation of a good seedbed should be accomplished just before planting. Ideally, final land preparation and planting should be done while there is still enough moisture available for seed germination. A “good seedbed” might be considered to be one in which the following has been accomplished: (1) the soil surface is level enough that planting equipment will function properly; (2) most clods or clumps or soil large enough to cover and suppress forage seedlings have been eliminated; (3) most of the existing vegetation on the soil surface has been destroyed; and (4) enough soil particle uniformity has been obtained that proper and even seed placement can be accomplished. The amount of disking, harrowing, or other land preparation necessary to

achieve these goals will vary depending on the type of soil, moisture conditions, and other factors, but preparation of a good seedbed will usually require two or more trips over the field with a disk, harrow, or other land preparation equipment.

It is quite possible to prepare a seedbed in which the soil has been pulverized too thoroughly. The primary problem with such a seedbed (frequently described as being “loose” or “fluffy”) is that when it rains, the seed of small-seeded species (especially legumes) may sink into it so deeply that they will be unable to emerge from the soil surface. When a very light or fluffy seedbed has been prepared, it is highly advisable to roll or cultipack the area prior to planting.

Planting

Planting is an extremely important step in establishing winter annuals. Paying attention to detail and taking enough time to do the job right will really pay off. Recommended planting dates for north Alabama, central Alabama, and south Alabama are provided in the accompanying table. If planting is done earlier than these dates, young seedlings can be vulnerable to being killed by heat and drought. If the seedbed is extremely dry and the prospect of rain looks slim, it may be advisable to delay planting, but this also delays the date a winter annual pasture can begin providing grazing. If good autumn growing conditions prevail, a winter annual pasture planted in September will normally be ready to graze by early November.

Seed placement is critical. Small grain seed should be covered with 1 to 2 inches of soil, while ryegrass and annual clovers should be covered with no more than 1/2 inch of soil. Probably the best way to plant a winter grazing mixture is to plant small grain with a grain drill and plant ryegrass and clover seed with a cultipacker-seeder pulled in tandem behind the grain drill. Regardless of the method of planting, great care should be taken to place each type of seed at the proper depth.

The planting operation should be followed by rolling or cultipacking of the soil if a cultipacker-seeder was not used during the planting operation. This is especially true if small-seeded species such as annual ryegrass and/or clovers were broadcast-planted. This will ensure that the seed are in firm contact with the soil so they can easily germinate and become established, and will aid in reducing soil movement and erosion from rains coming prior to establishment of a good sod. In addition, cultipacking helps reduce moisture loss through evaporation.

Fertilization

Maximum production of cool season annual pastures requires high fertility. As previously stated, a soil test is essential for determining fertilizer needs. Remember also that any needed lime should be applied and worked into the soil before planting time in order that it can begin to raise soil pH prior to planting. Phosphorous (P_2O_5) and potassium (K_2O) should be applied at or near planting time in amounts recommended by soil test.

Grass-legume mixtures need about 60 pounds of nitrogen (N)/acre at planting. If the legume comprises less than 30% of the stand and additional growth is needed, an additional 60 pounds of N/acre should be applied in February. Grasses grown without legumes and planted on prepared land should receive 100 pounds of N per acre at planting and 60 pounds per acre in late winter.

Management

It is important to avoid grazing winter annual pastures too early. When the plants are very small the animals may pull up entire plants when grazing and, until the soil becomes firm, trampling damage may be severe. It is best to keep the animals out of the pasture until the average pasture plant height is at least 6 to 8 inches. If cold weather stops plant growth and supplemental feeding becomes necessary, care should be taken to avoid severe overgrazing. If possible, the animals should be removed from a winter annual pasture during extremely muddy periods, especially when the plants are very small.

Stocking rates can vary depending on species planted, soil fertility, and growing conditions. However, to use a stocker cattle program as an example, a winter annual pasture seeded in a prepared seedbed will usually support around 1 1/4 stocker calves (400 to 500 pounds each) per acre. An average stocking rate of 1 1/2 to 2 calves per acre or more can often be supported in the spring. If the winter annuals are to be used by mature animals, a "limit grazing" system in which the cattle are turned into the pasture for only a few hours each day is a good method of efficiently utilizing the forage. The stocking rate for this sort of system might be 2-4 animals/acre, depending on how much additional feed the cattle are receiving. Since winter annual pastures will not grow in mid-winter, supplemental feed will be required for several weeks in most areas of the state.

A final management point of great importance is that the spring growth should be grazed heavily enough that the forage will be utilized efficiently. The optimum winter grazing pasture height is around 3 to 4 inches. If the pasture is not kept grazed down during the spring flush of growth, much of the forage will be wasted by trampling and fouling. If a pasture begins to "get ahead" of the animals, additional animals should be added to the area or a temporary fence should be used to divide the pasture so the animals can be concentrated on one side. The forage that accumulates on the ungrazed side can be used to make excellent quality hay or silage.

RECOMMENDED SEEDING RATES, DATES, AND DEPTHS FOR SELECTED
MIXTURES OF WINTER ANNUALS *

Mixture	Seeding Rate (lb/A.)	Depth (in)	Seeding Dates*
For Prepared Seedbeds			
1. Rye, Wheat, or Oats	60-90	1-2	N= Aug. 25- Sept. 10
Ryegrass	10-15	0-1/2	C= Sept. 1 – Sept. 15
Arrowleaf Clover	5-8	0-1/2	S= Sept. 15-Sept. 30
2. Rye, Wheat, or Oats	60-90	1-2	N= Aug. 25 – Sept. 10
Ryegrass	10-15	0-1/2	C= Sept. 1 – Sept. 15
Crimson Clover	15	0-1/2	S= Sept 15 – Sept. 30
3. Rye, Wheat or Oats	60-90	1-2	N= Aug. 25- Sept. 10
Ryegrass	10-15	0-1/2	C= Sept. 1 – Sept 15
			S= Sept 15 – Sept. 30
4. Rye, Wheat, or Oats	90-120	1-2	N= Aug. 25- Sept. 10
			C= Sept. 1 – Sept. 15
			S = Sept. 15 –Sept. 30

*If planting alone, use 90-120 lb/acre of small grain seed or 20-30 lb/acre of ryegrass.