General Information

There are eight main clover species that are grown in Arkansas. Each of these is briefly described in this publication. Berseem and Rose clover are also described, but they are rarely grown in our state.

By far the most commonly grown clover in our state is white clover. There are three main reasons for this. First, white clover is well-adapted to our climate, soils and management practices. Second, certain types of white clover reseed themselves and volunteer readily. Third, only a small amount of seed is needed, so seed cost for establishment is minimal.

Many beef and dairy producers in Arkansas plant 6 to 8 pounds of red clover seed with 1 pound of white clover seed per acre in the fall for renovating pure tall fescue pastures. The purpose for the mix is to obtain legume stands on variable soil types. Also, white clover contributes quality and legume stand longevity, while red clover contributes tonnage and more summer production.

Inoculation

All clover seed should be inoculated before it is planted. Otherwise plants may turn yellow and grow poorly. Use fresh inoculum whose expiration date is known. Place the inoculum on the seed immediately before planting. This is best done by coating the seed with a sticker before the inoculum is dusted onto the seed. Commercial stickers work better than such “homemade” stickers as soda pop, milk or molasses mixed with water.

Clover seed may be inoculated in the field at planting time by (1) pouring three-fourths bag of seed into a container such as a tub, (2) moistening this seed with water mixed with a sticker (commercial stickers, syrup, milk or soda pop have been used), (3) stirring three-fourths bag of inoculum onto the moistened seed, (4) adding the remaining one-fourth bag of seed to the previously moistened seed of step 2, (5) placing the remaining one-fourth bag of inoculum onto the seed, and blending all the seed and inoculum together before planting. Avoid over-moistening the seed since it will not flow through the planter. Consult Soil Test Notes P006 for further information about seed inoculation. Also consult Fact Sheet 2035, Forage Legume Inoculation.

Some seed companies preinoculate and lime-coat their seed. The inoculum...
### Species of Commonly Grown Clover

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| Red | 1. Averages 3.6 tons/A annually in pure stands in Arkansas.  
2. Plant 10-12 lbs/A in pure stands; 6-8 lbs/A in mixtures.  
3. May fix over 100 lbs N per acre annually.  
4. A short-lived perennial (stands last 2-3 years).  
5. Newer varieties have a longer life span than older ones.  
7. Can cause bloat, but this is infrequent.  
8. Tolerates poorer soil drainage better than alfalfa.  
9. Is among the more shade tolerant clovers.  
10. Is grown for both pasture and hay.  
11. Performs well with tall fescue.  
12. Its cool season production exceeds summer production.  
| White | 1. Averages producing 1.9 tons/A annually in pure stands in Arkansas.  
2. Plant 2-3 lbs/A in pure stands; 1-2 lbs/A in mixtures.  
3. May fix over 100 lbs N per acre annually.  
5. The three types are white dutch, intermediate and giant (ladino types).  
6. Ladino does not reseed as well as other types.  
7. Is nonproductive on droughty soils.  
8. Tolerates wetter soil and poorer drainage than alfalfa and many other clovers.  
9. Used mainly for pasture.  
10. Is known to cause bloat in pure stands or when it predominates in a stand.  
11. Leaves do not bear hairs. |
| Crimson | 1. Averages producing 1.2 tons/A in pure stands in Arkansas.  
2. Plant 20 lbs/A in pure stands; 10-15 lbs/A in mixtures.  
3. May fix over 90 lbs N per acre annually.  
4. A cool-season annual.  
5. Stems and leaves have hairs.  
6. One of the earliest maturing clovers, so it is well suited for overseeding bermudagrass.  
7. Produces better than other clovers at low temperatures.  
8. Used for pasture, hay, and plowdown. |
| Arrowleaf | 1. Averages producing 2.5 tons/A annually in pure stands in Arkansas.  
2. Plant 5-10 lbs/A. Use scarified seed.  
3. May fix over 100 lbs N per acre annually.  
4. One of the latest maturing annual clovers.  
5. Maintains quality well with age.  
6. Produces an abundance of hard seed. This makes volunteer stands undependable in some years.  
7. Leaves and stems do not have hairs.  
8. Mainly used for pasture, but can be hayed. Is also grown for seed.  
9. Bloat is rarely a problem.  
10. Is commonly grown with annual ryegrass. |
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| Ball     | 1. Averages almost 1 ton/A annually in pure stands in Arkansas.  
2. Plant 2 lbs/A.  
3. A winter annual.  
4. Among the better adapted clovers on poorly drained soils.  
5. Small white heads are good nectar sources.  
6. One of the clovers known to cause bloat in pure stands or when it predominates. |
| Hop      | 1. Not a highly productive clover.  
2. Broadcast seeding rate is 3-4 lbs/A.  
3. A winter annual that matures early.  
4. Volunteers well.  
5. Used mainly for pasture. |
| Persian  | 1. Averages 1.5 tons/A in pure stands in Arkansas.  
2. Broadcast planting rate is 3-5 lbs/A.  
3. Known for its tolerance to poorly drained soils.  
4. Known as a bloat causing clover in pure stands or when it predominates.  
5. A winter annual.  
6. Identified by its small pink flower heads.  
7. Volunteers well.  
8. Used mainly for pasture. |
| Subterranean | 1. Averages producing 1 ton/A annually in pure stands in Arkansas.  
2. Broadcast planting rate is 10-20 lbs/A.  
3. A low growing winter annual that produces low yields.  
4. Leaves bear hairs.  
5. An excellent reseeder, but seed often germinates in early fall. This contributes to seedling death due to fall drought.  
6. Its main use is for pasture. It tolerates close grazing.  
7. Is identified by seeds produced below ground and by small white seed heads that frequently contain only a few (3-8) flowers. |
| Berseem  | 1. May produce 4 tons/A.  
2. Plant 10-20 lbs/A.  
3. Only the Bigbee cultivar has sufficient cold tolerance to survive Arkansas winters.  
4. A winter annual, so it must be planted annually.  
5. Only rarely grown in Arkansas currently. |
| Rose     | 1. Plant 10-12 lbs/A.  
2. A winter annual that reseeds naturally.  
3. Both the seed and plant are very similar in appearance to red clover.  
4. Does not tolerate poor drainage.  
5. Overton R18 is a newer cultivar that has produced 2 tons/A at Overton, Texas.  
6. Has only been grown experimentally in Arkansas. |
in this coated seed is likely alive and viable if the expiration date on the tag has not passed. Seed should be reinoculated if the date has passed.

**Establishment**

September and October are the preferred planting months for clover. White and red clover may also be planted during late winter. To help ensure a stand, lime should be applied six months ahead of planting on fields whose soil test shows that lime is needed. Phosphorus and potash fertilizer applied at planting help stimulate seedling growth.

One key establishment step in overseeding tall fescue or bermudagrass with clover is to remove the grass overstory and to suppress the grass sod at the time clover is planted. Either close grazing, tillage implements or herbicides may be used to remove the overstory of grass and to impede its regrowth.

Phosphorus and potassium fertilizers are legume stimulators. Consult your soil test report for the correct amount of these nutrients to apply. Only a small amount of nitrogen is recommended at planting time so grass growth is not stimulated. About 60 pounds of ammonium nitrate will supply about 20 pounds of N per acre when the clover is planted.

As a rule, use higher seeding rates when broadcasting than when drilling. Also, use more seed when a poor seedbed is prepared.

**Animal Health**

Clovers are noted for their high mineral and protein contents. Both are needed for good animal health. Clovers also improve the digestibility (TDN) of grass pastures. The nutrition of pure grass pastures is improved greatly when clovers are successfully established into them. Producers have learned that cattle give more milk, breed better, wean heavier calves and are less likely to have grass tetany when they are kept on grass-clover than on pure grass pastures.

Pure stands of most clover species may cause bloat. As a general rule, bloat is not likely to occur when 50 percent or more of the grazed material is grass. However, extra caution should be taken with certain species of clover. These are noted in the table.

Mature heads of crimson clover may become lodged in the digestive tract of animals. This blockage can result in animal health problems. For the most part, however, crimson clover is grazed or hayed before the seed head matures to the point that this type problem would likely occur.

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**LARRY J. SANDAGE** is Extension forage specialist, Livestock and Forestry Branch Station, Cooperative Extension Service, University of Arkansas, Batesville.

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