

“Grow Your Own Fertilizer”

The old saying “you have to spend money to make money” could very well have been written about agriculture. It takes a tremendous amount of capital for the land, equipment, and supplies needed to put out and harvest a crop. For livestock producers, spending money on fertility is a significant expense, and is also one that can be managed by ‘growing your own’ fertilizer.

As most producers will tell you, providing a sufficient amount of high quality forage for as many days as practical is a key to keeping feeding costs at a manageable level. These plants must be fed to remain productive and reach their full potential. Nitrogen (N) in particular is required in large quantities for high levels of forage production. While commercial fertilizers such as urea are readily available and certainly have their place in plant production, another option is to harness the N from the atmosphere.

It is estimated that the atmosphere is about 80 percent N and that each acre of land has about 37,000 tons of N above it. Legumes such as red and white clover have a unique ability to obtain N from the air, making them especially valuable in a forage system. This process, known as N fixation, occurs when bacteria called Rhizobium enter the roots of legumes and form nodules. The bacteria inside these nodules take nitrogen from the atmosphere and make it available to the legume and other nearby plants.

Research in Tennessee has shown that tall fescue over-seeded with white clover, or a combination of white clover, red clover and annual lespedeza, will produce more forage than a pure tall fescue pasture fertilized with 60 pounds of nitrogen per acre. Research in Kentucky found that red clover growing with tall fescue produced higher yields than tall fescue alone fertilized with 180 pounds of N per acre. Even a conservative estimate of 60 pounds of N saved per acre with commercial fertilizer costs being \$0.45/lb means you are saving \$27/acre by having clovers in the pasture.

February is a great time to add clover to pastures and hayfields. Good seed-to-soil contact is essential for obtaining a strong legume stand. A simple but effective method of planting is to broadcast the seed during the last two weeks of February. As the soil freezes and thaws or the area is trampled by cattle, the seed will be worked into the ground. Legumes only need to be planted at a depth of ¼ inch so this simple means of seeding is often effective.

After March 1 as the grass sod thickens, it may be necessary to use a disk to open areas for the seeds to contact the soil and become established. Use the disk to disturb about 50 percent of the sod. Not only will this improve seed-to-soil contact, but will also help reduce the competition from grasses. The seed can be drilled or broadcast after disking. Recommended seeding rates in tall fescue renovation based on UT research are 2 pounds white clover, 4 pounds red clover, and 8 pounds annual lespedeza.

Adding legumes such as clover to grass pastures and hayfields will improve forage quality and yield, add to the performance of the animals, and decrease the need for nitrogen fertilization. If your pastures and hayfields are in need of some renovating, why not grow your own fertilizer by adding legumes? If you would like more information about renovating pastures and hayfields with legumes, stop by the University of Tennessee Extension office, or give us a call at (615) 735-2900.