

## **Frost Seeding Legumes**

Legumes are an extremely important component of forage production. They provide a number of benefits to producers who are utilizing forages for grazing or haying. The most important of these benefits is the overall increase in forage quality. Legumes are higher in protein and lower in fiber than most grasses. Grazing on or feeding hay from a field that has a quality stand of legumes will usually result in cattle that gain weight faster and produce more milk. Another major benefit of legumes, and one that is especially important right now, is the ability of legumes to utilize or “fix” nitrogen from the atmosphere. Bacteria that grow on the roots of legumes fix nitrogen from the atmosphere and make it available to legumes, as well as grasses, which in turn use this nitrogen for growth. Fields with a quality stand of legumes have no need for application of nitrogen fertilizer, an important benefit considering the currently high prices of nitrogen.

Cattle and hay producers who are interested in establishing legumes or increasing the amount of legumes in their pastures should take heed because the time for frost seeding is rapidly approaching. Frost seeding legumes is the practice of broadcasting legume seed into an existing pasture and allowing the repeated thawing and freezing of the soil in late winter to work the seeds down into the soil. Seed will then germinate when the soil warms in late March or April. The ideal time for frost seeding legumes ranges from early February through early March although it is best to seed during early to mid-February to allow adequate time for the freeze/thaw cycle to take place.

There are a few important issues to deal with before the seeding takes place. The first of these is the condition of the soil. Legumes typically require a much higher pH for germination and growth than do grasses. For most legumes, the soil pH should 5.5 to 6.0. For other legumes, such as alfalfa, the pH must be greater than 6.5. Adequate levels of phosphorus and potassium in the soil are also extremely important for seed germination and early plant growth. The second consideration is weed presence. Most broadleaf herbicides also kill legumes, so it is important to ensure that weeds are controlled prior to seeding legumes. The final major issue to consider is legume inoculation. Legumes must be inoculated with bacteria prior to seeding. If legumes are not inoculated, they will be unable to utilize nitrogen in the atmosphere. Fortunately, most seed sold today is pre-inoculated. If pre-inoculated seed is not purchased, producers must manually inoculate the seed. The important thing to remember when doing this is to select the correct inoculant for the type of seed being use.

Proper management of newly seeded legumes is vital to maintaining a good stand. Grasses should be grazed heavily in the spring to open up the canopy and allow the legumes to germinate and grow without competition. Once cattle begin to eat the legumes, the pasture should be rested for 4 to 5 weeks to allow the legumes to establish root reserves. At this point the pasture can be lightly grazed or rotationally grazed until September 1<sup>st</sup>, at which time the cattle should be removed again. For more information on frost seeding or managing legumes, contact your local Extension center or Travis Harper at the Henry County Extension Center by phone (660)885-5556 or e-mail [harpertw@missouri.edu](mailto:harpertw@missouri.edu).