

Frost Seed Legumes to Improve Yield, Quality Of Grass Pastures

URBANA, ILL.

One of the most cost-effective, low energy ways to improve the yield and quality of grass pastures is by frost seeding legumes. The normal time for frost seeding is about three weeks away for northern Illinois.

What is frost seeding? Frost seeding is the broadcast, surface placement of seed in late winter, early spring on frozen ground. Sometimes referred to as overseeding, this method is dependent upon the freezing and thawing action of soil, a late snowfall, plus early spring rains to provide soil coverage. Frost seeding should be done when the soil freezes at night and thaws on the surface during the day. Frost seeding has limited success on sandy soil and in years with abnormally dry springs, and early summer weather.

Since there may not be uniform seed germination and emergence, frost seeding is not suggested for hay fields, but is an acceptable method for pasture improvement. The practice works well on steeply sloping sites; but it should not be done on snow-covered sloping ground.

What legume species are best suited for frost seeding? Experience and research has shown that medium red clover is the easiest to establish. Red clover has good seedling vigor, is shade tolerant, and is more cold tolerant than alfalfa. A second option would be white clover, especially for wetter, poorly drained soil. Frost seeded legumes need to be properly inoculated and the soil pH needs to be in the acceptable range. The degree of soil drainage will also affect the choice of legumes. Typically, the

stands from frost seeded legumes are better in a bunchgrass (for example, orchardgrass and tall fescue) than in a sod-forming grass like Kentucky bluegrass or smooth bromegrass. Frost seeding is dependent upon the seed reaching the soil surface. One must also reduce the plant competition for the frost-seeded legume. This can be accomplished by grazing the pasture down, or reducing the residual growth, in the fall and early winter.

Frost-seeded pastures need to be grazed regularly or mowed in the spring and summer to permit sunlight to penetrate the plant canopy so the legume can grow and develop. But, livestock should not be allowed to closely graze the new seedlings until they are established.

What seeding rate should be used? If one frost seeds red clover every year, about 4 to 6 pounds per acre would be suggested. If seeding every other year, consider 8 to 10 pounds per acre. White clover should be seeded at 2 to 3 pounds per acre by itself, or 1 to 2 pounds per acre if part of a seed mixture.

Cyclone-type seeders that mount onto ATV's or tractor 3-point hitches are commonly used. Be sure to determine the seeding width for each seed type or mixture.

With proper grazing management and cooperation from Mother Nature, frost seeding is an economical way to improve the quality and quantity of pastures.

Contact your local University of Illinois Extension office for more information. In Ogle County call (815) 732-2191 or visit www.extension.uiuc.edu/ogle. Δ