



Frost Seeding of Clovers by Bret Winsett

It is February and before we know it, pastures will be greening up and spring will be upon us. Now is the time to get prepared for the upcoming grazing season and one of those items which we need to get accomplished is the incorporation of clovers such as **Freedom! Or Emerald** red clover and **Regal Graze or Alice** ladino clover into existing grass pastures via frost seeding. Frost seeding of clovers when done correctly can be relatively low cost and very successful.

Advantages - Both research and farmer experience has shown that incorporating a legume into grass based pasture can provide numerous benefits. Red clover incorporated into tall fescue has been shown to increase overall forage yields of pasture due to an increased nitrogen supply as well as the additional forage that clovers can supply. With the increased costs of stored feeds, the more grazeable forage that we can produce, the better our pastures will be. Clovers in cool season grass pastures are also known to improve quality through improved palatability as well as increase nutrient/crude protein concentration. This results in better conception rates, better weaning weights, increased average daily gains and better milk production. High quality is also important in getting dairy and beef cows rebred after calving. Having a good percentage of legumes in grass-based pastures has also been shown to decrease nitrogen fertilizer needs of the soil due to legumes ability to utilize nitrogen from symbiotic bacteria that live in nodules on their roots. In short, getting a good legume established in pastures is critical in optimizing the productivity and profitability of our pasture base.

Keys to success - Two keys in the success of frost seeding clovers are done prior to seeding. First is to insure good fertility and pH. Minimum soil pH for clovers is 6.0 and for optimum growth, pH should be near 6.5. Also, for success, maximum seed to soil contact is essential. Ideally, this is accomplished through close grazing prior to the broadcasting of seed. However, spring pasture residue can be partially eliminated by harrowing. Frost seeding is the spreading of seed during February and early March, allowing the honey combing action that is created by alternating freezing and thawing cycles that the weather brings to incorporate the clover seed into the top ¼ inch of soil. Seeding rate for **Freedom!** red clover is 6 - 8 pounds per acre. **Freedom!** has been selected for good levels of disease resistance and traffic tolerance. As a red clover, it will also produce much more high quality forage during the summer months than white or ladino types do. Seeding rates for **Regal Graze** ladino clover is 1 – 2 pounds per acre.

Regal Graze has also been selected for improved grazing tolerance over standard ladino or white clovers and will persist much longer than red clovers when managed. If minimal freezing thawing occurs, it is also suggested that hoof traffic be utilized to help ensure good seed to soil contact. Post planting management revolves around controlling of the grass and weeds during the first 2 – 3 months of the growing season to allow the clovers a chance to grow and establish. Pastures that have just been frost seeded with legumes should not have nitrogen applied to them during the spring season. Elimination of the spring application of nitrogen will reduce competition from the grasses and allow clovers the ability to access sunlight, as new seedlings are very susceptible to shading by established plants. Frost seeded pastures should be mowed or grazed regularly in the spring and early summer to allow for light penetration into the plant canopy. If grazing, care should be taken to avoid overgrazing by moving livestock off pastures before the young clover seedlings are consumed prior to adequate root development.