



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Hardin County Extension News Release

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Still Time to Frost Seed Red Clover

Hardin County – We are at the point of the winter that daily average temperatures are rising and the days are getting noticeably longer. This freezing and thawing over the next few weeks is what gives frost seeding a great chance to work.

Frost seeding is a very low cost, higher risk way to establish new forages in existing fields by spreading seed over the field and let the freezing and thawing action of the soil allow the seed to make “seed to soil” contact allowing it to successfully germinate. When you see soils “honeycombed” in the morning from a hard frost, or heaved up from a frost, seed that was spread on that soil has a great chance to make a seed to soil contact when the soil thaws. I think the two biggest reasons why frost seeding fails is people wait too late to frost seed and the seed never makes good contact with the soil. Let’s face it, if the seed does not land on the soil but on existing living or dead vegetation, it does not have a chance to successfully germinate: you need exposed soil that should be present in a fall planted small grain field.

Time is short to assess and seed potential fields. We are rapidly running out of time for a likely successful seeding, so start as soon as possible. Typically you can start at the beginning of February through mid-March. My opinion is that once we get into March, the chance of success starts to drop.

The age old question is what to plant. The seed that has the best chance to germinate and become established is red clover. For years I recommended medium red clover but I am now convinced that that no matter what we plant, use improved varieties, unless the planting is only for a temporary cover. Advancement in genetics is amazing. Numerous studies confirm that those varieties will last several years longer in most conditions. Forage trials at OSU show there a several red clover varieties that have high yields and stand percentages 60% or greater after four years. These are more expensive varieties than some of the common, shorter-lived varieties, but I think it is worth it.

Red clover is a heavy round seed that has a better chance of making soil contact than a light flatter seed. Dr. Garry Lacefield, retired Extension Forage Specialist from University of Kentucky says that clovers, seeded in the right conditions will germinate most years. Grasses are more “hit or miss” germinating about half of the time. With alfalfa, the odds are even less. Frost seeding alfalfa into an alfalfa stand rarely works as existing alfalfa is toxic to new plants. If an alfalfa field is starting to thin out, an option to extend the life of the stand would be to frost seed red clover.

Another reason to plant clover, especially red clover is the high seedling vigor. It is tolerant of a wide range of soil pH and fertility conditions and is more drought tolerant than white clover. The advantage of frost seeding a legume like red clover is that legumes “fix” nitrogen typically in excess of their own needs, providing added fertility to other plants, improving an improved stand. Once legumes become established in a stand of grass and compose 25-30 % of the stand, there is no need to provide additional nitrogen, reducing fertility costs.

If you choose to frost seed grass, which will do best? Studies by Dan Undersander, Forage Specialist from University of Wisconsin indicate that perennial ryegrass will do best (note that it grows best in Ohio north of I-70), followed by orchardgrass, then timothy. Other studies note that annual ryegrass will work good compared to other grasses.

Some other tips to help succeed include mixing with granular fertilizer when you spread the seed. The coarse fertilizer, when mixed with clover seed will “scour” the seed coat and help in germination. Keep in mind that when you use a broadcast spreader, the fertilizer will travel twice as far as seed, so plan accordingly unless you want a striped field of clover. Over the years, I have heard people applying anywhere from 2-10 pounds of seed per acre with the lower amount applied on permanent vegetation and likely the higher rate on small grain fields. If your small grain fields still have exposed soils and you get several frosts after broadcasting, I like your odds of a successful frost seeding.

Article written by Chris Penrose, OSU Extension-Morgan County