

March 9, 2015
FOR IMMEDIATE RELEASE
David Dugan
OSU Extension Educator, Agriculture and Natural Resources
Adams/Brown/Highland Counties
Ohio Valley Extension Education Research Area

Frost Seeding to Improve Pasture and Hayfield Quality

Hopefully the severe cold and snow are behind us for the most part. The hay supply for most of the area in Southern Ohio and Northern Kentucky would not be defined as abundant by any stretch. Probably a better word that would best describe the situation would be “short” for hay supply. Most livestock producers that I have talked to think they will have enough hay to get to new grass, but there is very little hay available in the counties that border the Ohio River.

With that said, this is a great time to think about frost seeding. Rory Lewandowski, OSU Extension ANR Educator in Wayne County submitted the following article to the CORN newsletter this week that explains frost seeding very well.

As I look at the weather forecast this week, it appears that spring is arriving. One task that is well suited to the transition time between winter and spring is frost seeding. Frost seeding involves broadcasting seed over a pasture or hay field area and letting the natural freeze/thaw cycles of late winter and early spring help to move the seed into good contact with the soil. A basic requirement for frost seeding success is exposed soil. When looking down into the sod you should be able to see down to the soil. The broadcast seed must be able to come into contact with the soil. Frost seeding will fail when there is too much forage residual cover and the seed gets hung up in that residue. Generally, a pasture is prepared for frost seeding by grazing it down hard, although some light tillage or a close mowing done in the late fall could also be used. For a hay field, frost seeding can be used in thin areas that are at risk for weed invasion, but again, the seed needs to get down to soil level.

In general, legumes work better than grasses to frost seed. Legume seeds are typically heavier than grass seed and that may explain why they get down to the soil level better than grass seed. The advantage to frost seeding a legume such as red or white clover is that legumes “fix” nitrogen typically in excess of their own needs. The existing grass plants use the excess nitrogen, which improves their quality as a feedstuff. Once legumes become uniformly and evenly established in a stand of pasture grass or across a hay field and make up 30 to 35% of the stand, there is no need to apply supplemental nitrogen so this portion of fertilizer costs is reduced.

Red clover is probably the most widely used forage species when it comes to frost seeding. Red clover has high seedling vigor, is tolerant of a range of soil pH and fertility conditions, and tolerates drought better than white clover. Red clover produces its heaviest growth during the summer months. Red clover is known as a short-lived perennial, typically persisting in a stand for only a couple of years. There now are some longer lived, more persistent varieties of red clover available that can last three or more years in a stand. Some producers like a combination

of red clover and birdsfoot trefoil in their frost



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

adams.osu.edu

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information: go.osu.edu/cfaesdiversity.

seeding mix. Birdsfoot trefoil is a persistent perennial once established, but it can be slow to establish, often not showing up in a stand until the second year after frost seeding. This works well for most common varieties of red clover as they begin to decline after the second year in a stand.

After red clover, the next most popular legume that I see being used for frost seeding is white clover. White clover is a perennial clover and begins its production in the cooler spring weather. The older varieties of white clover are known as low growing or prostrate type of growth. This means that in order for the white clover to thrive, grass must be grazed down shorter so that light can get down to the white clover. However many seed companies now have newer, improved varieties that are more upright growing and compete better with grasses.

Another legume that is sometimes considered for pasture renovation and frost seeding is annual lespedeza. Annual lespedeza is a non-bloating legume that is drought tolerant. Lespedeza is a warm season forage that can be used to fill in the "summer slump" period. Expect growth of annual lespedeza to kick in from late June through early September. In my experience it has been difficult to establish lespedeza by frost seeding. I think it is because the seed is light, similar to a grass seed, and it is difficult to get good seed soil contact. I would recommend the use of a no-till drill to seed lespedeza.

Recommended frost seeding rates by species is included in the following table:

Forage Species	Seeding Rate (lbs./acre)
Red clover	6 - 8
Ladino/white clover	2 - 3
Alsike clover	2 - 4
Birdsfoot Trefoil	4 - 6

If you are frost seeding a legume species that has not been grown in the pasture for a number of years, it is a good idea to include the proper bacterial inoculum with the seed to insure that the bacteria responsible for fixing nitrogen becomes associated with the plant roots.

In addition to good seed soil contact, the success of any new seeding depends upon soil fertility conditions and the grazing management that will be used once that plant is up and growing. The goal should be more than mere plant survival. We want the new forage plants to thrive and produce to their genetic potential.

Dates to Remember

Fertilizer Education Call Brown Co. Extension Office (Cindy) to pre-register at 937-378-6716. The two remaining sessions are: Wednesday, March 18 at North Adams HS in the round room at 6:00 p.m.; and Monday, March 23 at Southern Hills CTC Board Office in Georgetown at 1:00 p.m.

GAP for Tobacco Growers are required to attend. Call 544-2339 to register. Monday, March 16 at Frisch's at 1:30 p.m. and Manchester HS at 6:30 p.m.

County Cattlemen Annual Cattlemen Banquets: Highland County is April 1, Adams County is now changed to April 9, and Brown Co. is April 11.