

Grazing Bites

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As I write this in late December, winter has definitely arrived. Snow flurries are falling outside my window, and while warmer than usual temperatures lingered longer than expected, true winter weather has finally settled in.

Recently, I've had several conversations about increasing legumes in pastures through frost seeding. This method offers numerous benefits for pasture health, soil fertility and forage quality. One key advantage is that legumes, like red and white clover, fix nitrogen in the soil, reducing the need for synthetic fertilizers and promoting a more balanced plant community. This results in more resilient and sustainable pastures.



Adding legumes by frost-seeding has a lot of benefits.

Frost seeding also increases the nutritional value of the pasture. Legumes provide excellent forage for livestock, offering higher protein content than grasses, which improves animal growth, milk production and reproductive success. Additionally, frost seeding is cost-effective. It requires minimal equipment and can be done between Christmas and Valentine's Day, eliminating the need for expensive planting equipment.

Beyond this, frost seeding improves soil structure. The deep root systems of legumes enhance aeration and water infiltration, improving drainage, reducing erosion and preventing soil compaction, especially in pastures with heavy livestock traffic. The freeze-thaw cycles during winter create small cracks in the soil, allowing seeds to penetrate and ensuring good seed-to-soil contact for successful germination, even when traditional planting conditions aren't ideal.

Frost seeding can also reduce weed competition. By introducing legumes early, before weeds have a chance to establish, you can create a more competitive pasture mix. Legume seedlings can fill in bare spots and outcompete weeds, leading to healthier, more productive pastures.

Frost seeding mimics natural reseeding. It doesn't require perfect soil preparation or ideal moisture conditions, making it ideal for pastures where traditional seeding can be difficult. Snow or frost helps transport the seeds to the soil surface, where the freeze-thaw cycles ensure good seed placement. However, in milder winters, this action might not be quite as adequate, so it's best to wait for consistent cold weather before frost seeding.

Competition from existing vegetation is one of the biggest challenges with frost seeding. It's essential to graze the pasture down to 3 to 4 inches of growth after the forage has gone dormant. This removes excess growth and allows seeds to reach the soil surface. Grazing closer to the soil also helps reduce early spring grass growth, giving legume seedlings a better chance to establish. In areas with thick grass, grazing before dormancy can set the grass back further and slow growth for spring establishment, if needed.

After seeding, avoid applying nitrogen in the spring, as it will encourage grass growth and reduce the chances of the legume seedlings surviving. Grazing stockpiled forages after over-seeding, like tall fescue, can actually help improve seed-to-soil contact, as long as conditions aren't overly wet, which could damage the pasture or bury the seed. Grazing weakens the grass stand, opening the sward and slowing early spring growth, which benefits the legume seedlings.

For frost seeding, I recommend higher seeding rates compared to conventional methods. White clover should be seeded at 1-1.5 lbs. per acre, red clover at 6-8 lbs. per acre, birdsfoot trefoil at 5 lbs. per acre, and common lespedeza (hulled seed) at 10 lbs. per acre. Mixing with other seeds can help with distribution. Fertilizer (without nitrogen) or pelletized lime can also be used.

Inoculating legumes with the appropriate rhizobia inoculants is crucial for proper bacterial activity, germination and growth. Coated seeds help address size, inoculants and even pH adjustments.

As spring arrives, continue grazing to control early grass growth and allow sunlight to reach the newly germinated legume seedlings. Keep grass growth in check through grazing or haying until the legumes are well-established. Just don't overgraze! Grazing the top third is ideal to keep grass growth in control.

In my experience, clovers and lespedezas tend to perform well when frost seeded. Trefoil, in particular though, requires excellent seed-to-soil contact and is sensitive to competition.

Flavonoids in red clover help reduce the negative effects of endophyte-infected tall fescue, protecting livestock from toxic alkaloids, improving liver function, and enhancing overall animal performance. Red clover can improve forage quality and support livestock health, especially if you plan to harvest hay. I generally don't recommend red clover for horse hay or for sheep grazing right before or during the breeding season.

White clover is better for grazing than hay because it's harder to dry. It does contribute significant nitrogen to the system but can have more risk of bloat – maintain it at no more than 30% of the forage mix and use bloat guard when needed.

All these legumes benefit from proper soil pH management. White and red clovers thrive in slightly acidic to neutral soils with an ideal pH range of 6.2 to 7.0, while annual lespedeza prefers slightly more acidic soil, typically in the range of 5.5 to 6.5. Birdsfoot trefoil also performs best in soils with a pH of 6.0 to 7.0. Correct pH levels help rhizobia bacteria fix nitrogen effectively, which is essential for legume growth. Regular soil testing and pH adjustments with lime ensure optimal growth, yield and nitrogen fixation.

Successful frost seeding of legumes requires grazing the pasture down before seeding to reduce litter and competition, seeding during freeze-thaw conditions for better seed placement and managing early spring grass growth to allow seedlings to establish themselves.

Remember, the goal is not to maximize each grazing event, but to extend the grazing season and optimize pasture health. Keep on grazing! Please send comments or questions to grazingbites@gmail.com.

Reminders & Opportunities

American Forage and Grassland Council Annual Conference Jan 12-15, 2025, Kissimmee, FL <https://www.afgc.org/annual-conference/>



Northern Indiana Grazing Conference – January 31 -February 1, 2025, Michiana Event Center, Call the LaGrange County Soil and Water Conservation District: (260) 463-3166 ext.3 for more information.



Southern Indiana Grazing Conference – March 26, 2025, Odon, Indiana – Ray Archuleta, Russ Wilson, & Jeff McGuire as speakers. Call the Daviess County Soil and Water Conservation District at (812) 254-4780 ext.3 for more information.

