



Renovating Pastures with Interseeding

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Early spring is an excellent time to start thinking about ways to boost pasture production. Thickening and improving a declining pasture with a spring interseeding can be a cost-effective way to make a more productive, high-quality, and palatable forage. The existing sod and residue can provide a beneficial weed-suppressing and moisture-retaining environment for the new seedlings. The pasture has to be properly managed both before and after the seeding, however, to prevent the current stand from out-competing the new plants.

Early spring is in many ways ideal for seeding, since new seedlings will have less competition to contend with than in midsummer.

Though interseeding can be quite beneficial over time, it has little impact on pasture quality and yield in the seeding year. In pastures with severe weed infestations or tight sods, renovation - killing the existing pasture with an herbicide like glyphosate and no-till seeding new pasture - may be the best solution.

Seeding earlier in the year, before early summer heat and drought set in, helps ensure adequate moisture for the seedling. Be sure that the soil has the proper pH, 6.5-7. If the pH needs adjusting, add lime six months to a year before you want the pH change to take place. A pH closer to the neutral range is better for nodulation of legumes (rhizobia bacteria form nodules on legume roots after they infect it, which is how the plant fixes nitrogen). In general, northeast soils tend toward acidity and have to be continually amended.

Nodulation also happens most readily with moderate temperature and moisture that is not at either low or high extremes, and there is not an abundance of free nitrate nitrogen in the soil (from a recent N application). These conditions are also conducive to the activity of many other soil microorganisms, which recycle soil nutrients and other organic compounds. A soil test will show you what other nutrients need to be added.

The stand should be open enough to allow good seed-to-soil contact for germination and growth. Although a 3-4 inch stubble after grazing is usually recommended for efficient regrowth, a harder graze prior to interseeding is a useful way to control the competition from the existing sod stand until the new seedlings get established. "Scalping," or very short mowing, would also accomplish this. Contact herbicides, like glyphosate or others labeled for sod suppression, can also be used to temporarily reduce competition, but close grazing the fall prior to the seeding is sometimes the preferred method since it wastes none of the crop.

Working the pasture with vertical tillage is another way to open up the soil, and it has the benefit of cutting through sod roots that can be quite dense and prohibitive to new growth in the upper soil profile. Using vertical tillage or an aerator can be an effective way to open up the soil without overworking it.

In addition to preparing the soil, make sure to eliminate perennial weeds before planting, since these can become quite competitive as the weather warms. These weeds often have a dense root system. Mowing, tillage or herbicide application are good ways to control them. Control broadleaves by spraying the preceding year.

A good no-till drill is needed, and should have an aggressive coulter in the front and a packing wheel to close the furrow. A light disking prior to seeding can greatly enhance seed-to-soil contact and success in seed establishment. Firming over the planted seed is critical as well.

Planting in a "criss-cross" pattern is an innovative technique to apply a higher seeding rate and get a higher yield from the same amount of ground (rather than reaching the point of diminishing returns with the limitations of moisture and nutrients, a common problem in single-direction rows). The seeding rate is increased to the appropriate level, split in half, and the first half drilled in one pass while the second is drilled in a pass at a 60-90 degree angle perpendicular to the first.

Use $\frac{1}{2}$ - $\frac{3}{4}$ of the usual recommended seeding rate for interseeding, increasing it if the stand is very thin. Up to a certain point, a higher seeding rate and the use of criss-cross seeding will lead to a fuller, more competitive sward.

Some have raised concern that the smaller clover seed in a mix like King's AgriSeeds' Grazing Mix (30% European Ryegrass, 30% orchardgrass, 25% meadow fescue, 7% red clover, 6% white clover, and 2% chicory) or Creekside (40% meadow fescue, 32% perennial ryegrass, 11% timothy, 8% kentucky bluegrass, 5% white clover, and 4% Ladino Clover) will settle out in the seed box, but in our experience, this has not been a problem. The mixture can be put in the big box of the drill. More clover seed can be added to these mixtures if desired - about 2 lbs/acre of white clover or 3-4 lbs/acre of red clover. A heavier clover component contributes more drought resistance to a mix, as well as fixing more nitrogen to supply to the grass component.

Clovers are also less winter-hardy than the cool-season perennial grasses, so the pasture will naturally become more grass-dominant over time. Therefore, a heavier clover addition may be appropriate.

Red clover is the most vigorous legume, making it ideal for interseeding. Alfalfa and birdsfoot trefoil are also widely used. *Serecea lespedeza* is better adapted to perennial pastures in the South, since it does not overwinter well. Perennial forage grasses are acceptable choices as well, and a grass-legume mix would be a good in a thin, low-producing grass sod.

If legumes are already present in the pasture, there will be an active population of rhizobia bacteria in the soil, making careful inoculation of the legume seed less critical.

For a few weeks after planting, check seedlings carefully for insect damage and treat if necessary. Wait for 3-5 inches of growth before grazing and keep an eye on the effect of the grazing on the new seedlings, preparing to remove livestock quickly. By early fall, a late grazing may be possible if there has

been good fall growth, but be sure to leave 3 inches of residual forage growth into the winter. This is a good time to clip weeds and grass if they are shading seedlings.

Success in interseeding depends on sound preparation, proper seeding (including choice of species, seeding depth, and seeding rate), and close management and observation in the following months.