

Sunflower 9412 No-Till Drill

Agronomic Factsheet



Soil Preparation

Before you plant, whether interseeding legumes into an already existing hay field, addressing areas of winter kill, or completely re-seeding a field, make sure that the soil nutrients are there to facilitate new growth. The best way to do this is to take a soil test the year before you plan to use the no-till drill.

Especially if you want to add legumes to an existing stand or address areas of winter kill in a hay field, because of the increased competition from other plants it is especially important to address nutrient deficiencies beforehand; otherwise, you may just be wasting your money on seed that might not do very well.

Special considerations for adding legumes to a hay field

If you'd like to add legumes to your hay field, the pH should be above 6; most legumes like a pH of at least 6.5. The bacteria that form the nitrogen-fixing nodules on legume roots (a process called nodulation) operate best at a pH of 6.5 to 7. If the pH needs adjusting, add lime six months to a year before you want the pH to change.

Nodulation happens most readily when there is not an abundance of available nitrate nitrogen. Avoid nitrogen applications the previous fall or spring before seeding legumes.



Make sure that your phosphorus and potassium levels are in the “optimum” to “high” range on your soil tests. When phosphorus and potassium are low, grasses, which are more efficient at extracting those nutrients from the soil, can easily out-compete the legumes.

The stand you plan to seed into should be open enough to facilitate good seed-to-soil contact. If you plan to seed in the spring, you can graze or mow the field very close the previous fall to reduce competition from the existing stand until the new seedlings are established. You can also run through the pasture or hay field with a vertical tillage instrument, such as an Aerway, to cut through dense sod roots and open up the soil prior to seeding.

A note on winter kill

According to UVM’s Northwest Crops and Soils team, they often see winter kill when the last cut of hay is taken too late in the season (sometimes a necessity due to unfavorable weather). The grass is short, the weather is turning, and the plants can’t get the energy they need to grow from their leaves, so they take energy from their roots. The depleted roots make the plants vulnerable, so when the first cold snap hits, the grass can’t survive, leading to areas of winter kill. Seeding legumes and grasses into an existing stand with a no-till drill is a great way to take care of areas of winter kill; just make sure that the conditions that may have led to the winter kill in the first place (i.e. cutting too late and too short) don’t cause the same problem again!

Timing

NRCS specifications recommend that for most of Orleans County, spring seedings should be done between May 1 and June 15, while a late summer seeding should take place roughly between July 15 and August 10. If you’d like to seed legumes into an existing stand of grass, timing is very important, as the legumes need to be able to compete with weeds and grasses. If you are seeding into an existing pasture or hay field (sometimes called “sod seeding”) you can often seed later than August 10th. Check with others in your area to see if they have had success adding legumes and or grass seed to their pastures after August 10th. Often the limiting factor after this date is soil moisture. We generally do not recommend seeding after Labor Day, as there is often just not enough time for the seed to get established before the winter.

In terms of seeding into an existing pasture or hay field, UVM’s Northwest Crops and Soils team has seen the most success when farmers graze the field very short or cut very close for first cut right before seeding. Depending on the spring, you could also seed in early April; however, if you seed after the pasture or hay field has started growing, the new seed will probably not be able to compete well.

For cover cropping, cool-season grains are typically used in Orleans County. Winter Rye, the most commonly used cover crop after corn silage, should ideally be seeded before October 1st.



Seeds

There are many different options for purchasing single species of seed, pre-made mixes, or even custom mixes. The type of seed you choose and the rate at which you choose to seed it depends on your goals for the seeding, and how much money you are willing to invest.

Hay or Pasture Renovation

Below are two examples seed mixes used in Orleans County for a forage and biomass planting, an NRCS conservation practice typically used to seed down a corn field.

Species	Full Seeding Rate (PLS lbs/ac)	% of Mixture	Actual PLS lbs/ac of Mixture
Orchardgrass	2	12.5%	2.2
Medium Red Clover	6	37.5%	6.6
Alsike Clover	2	12.5%	2.2
Timothy	6	37.5%	6.6

Species	Full Seeding Rate (PLS lbs/ac)	% of Mixture	Actual PLS lbs/ac of Mixture
Red Clover	6	38%	6.6
Orchard Grass	3	19%	3.3
Timothy	5	31%	5.5
Alsike Clover	2	12%	2.2

Both seedings were done in early summer, and both utilized a nurse crop of oats, seeded at a rate of 50 lbs per acre.

Seeding into an already existing hay field or pasture

In terms of interseeding/overseeding/sod seeding (there are many different terms for seeding into an already existing stand of pasture or hay), there are several different options. Already blended “pasture mixes” can work well for this purpose – those usually have a mix of grasses and legumes, such as brome grass, fescues, orchard grass, or timothy; or red, white, ladino, or alsike clover.

The pasture mix sold through Oliver Seed in Milton includes orchardgrass, lofa festulolium, tall fescue, perennial rye grass, red clover, and white clover. Northeast Agricultural Sales in Lyndonville also has pasture mixes available. King’s Agriseed, sold by G. Bouchard Fertilizer in Highgate Center, sells the King’s Grazing Mix, which includes orchardgrass, perennial ryegrass, meadow fescue, red clover, white clover, and chicory.



If your primary goal is to introduce more legumes into your pasture or hay field, you can just seed a single clover species or a mix of clovers. King's Agriseed has a popular Premium Clover Mix that includes red clover, white clover, and ladino clover.

If you are planning to frost seed (see UVM factsheet on our website), some grasses and legumes work better than others. Perennial rye grass, red clover, and white clover can all work well; alfalfa typically doesn't work very well.

Cost

Northeast Agricultural Sales in Lyndonville sells orchardgrass for \$4/lb, tall fescue for \$2.50/lb, perennial rye grass at \$2/lb, reed canary grass at \$4/lb, and clover at \$2.50/lb.

Similarly, Oliver Seed in Milton sells red clover seed for \$96 for a 50 lb bag (about \$1.92/lb), and ladino clover at \$173 for a 50 lb bag (\$3.46/lb).

Both companies sell pre-made mixes; NE Ag sells a "pasture refresher mix" (perfect for seeding into an already existing stand), which includes festolium, perennial ryegrass, ladino clover, orchard grass, and a few other species for \$2.65/lb (\$132.50 for a 50 lb bag).

Oliver Seeds sells a pasture mix for \$128 for a 50 lb bag. Oliver Seeds also sells what they call a "TAR" mix – specifically for hay, silage, or green chop – that includes 50% timothy, 30% medium red clover, and 20% alsike clover; this will run you about \$84 for a 50 lb bag.

In terms of cover crop seed, Oliver Seed sells perennial ryegrass for about \$15 for a 50 lb bag, oats at \$13.50 for a 50 lb bag, and barley at \$18.75 for a 50 lb bag. Triticale will cost about \$25 for a 50 lb bag.

The King's Agriseed King's Grazing Mix mentioned in the previous section goes for \$118.00 for a 33 lb bag, while the Premium Clover Blend will cost \$132.00 for a 25 lb bag.

Seeding Rate

A general rule of thumb is that if you seed into an already existing stand of hay or pasture, you should seed at about half the rate you would if you were seeding a new stand. Sometimes, you can get away with interseeding at a lower rate, but it depends on the weather and what your goals are for that field.

In northwest Vermont, they have found success running pre-made pasture mixes only through the smaller seed box of the Sunflower drill; the larger seed box seems to be best suited for much larger seed such as oats, wheat, or larger seeded brome grass. A good rule of thumb to get the desired seeding rate is to spend the time calibrating the drill with the seed mix you plan to use.