

# Successful Forage Establishment



Careful planning and attention to detail are essential to ensure successful forage establishment. A successful forage stand depends on the selection of species and cultivars that are adapted to your environment and for the intended use of the forage. Your decision to plant a forage should be made with consideration of the following:

**Weed Control:** Consider the herbicides used in the last couple of years to ensure no herbicide residue as some products may inhibit or reduce seedling survival. Plan for a weed control program on the forages that you are seeding to control and reduce weed competition.

**Seedbed Preparation:** The seedbed should be firm and weed-free prior to seeding. It is important to achieve close seed to soil contact to allow for accurate seed placement which means a firm solid seedbed. Walking or driving across a seedbed should only leave a faint imprint. A clean stubble field makes for a perfect environment.

**Seeding Date:** Spring seeding is ideal when soil temperatures have reached 8-10 degrees C and moisture levels are good for ideal germination to occur. Moisture deficiency is often a cause of poor stand establishment, so seeding with anticipated precipitation in the spring is most successful. If you choose to dormant seed, plant when the soil temperature is below 2 degrees C to prevent germination until the following spring.

**Select the Correct Species:** When selecting your forage species, plan for the length of time the stand will be in production. Longevity and the yield of your forage stand starts with choosing the correct species adapted to your soil and field conditions. Select a quality seed that has a high level of germination and has an excellent seed purity with modern genetics for high production levels. Purchasing cheap seed may compromise yield and quality, and persistence of the stand due to lack of disease resistance and winter hardiness. Cost of the seed input in forage production accounts for less than 5%, so selection of the best species for your operation is critical to the success of your stands.

**Seeding Rate and Equipment:** Producers have used various equipment to successfully seed and establish forages. What is most important is the ability to control the seeding depth and accurately meter small amounts of seed and avoid bridging when using chaffy seeds. Having an agitator in the seed box or mixing in an inert carrier or phosphate fertilizer with a ratio of 1 to 3 by weight will eliminate bridging and result in good seed flow.

Using equipment such as double disc drills, hoe drills, or air seeders and drills provide for excellent seed to soil contact, but the exception may be the use of a broadcast applicator. With a broadcast applicator, it is recommended that you increase seeding rate by 20% to adjust for seed that remains on the top of the ground following incorporation after seeding. Broadcast seedings are more reliant on rainfall for germination than any other seeding methods.

Seeding rates should be determined based on a combination of factors such as: the end use requirement, the predicted survival rate of the seedlings, moisture conditions, and most importantly the seeds per square foot in the field rather than percent by weight. Contact your Northstar Agronomist for the ideal seeds per square foot for the various soil zones.



**Seeding Depth:** Seed your forages shallow with the maximum seeding depth on clay type soils at  $\frac{1}{4}$  to  $\frac{1}{2}$  inch deep with some seed evident on top of the ground. If you are seeding into loam or sandy-type soil, depth may increase to a maximum of  $\frac{3}{4}$  inch on sandy to loam type soil, but keep the importance of a firm seedbed in mind.

**Fertility:** Plan for a fertility program when seeding legumes and grasses. You may wish to bank your Phosphorus requirements for a period of 3-4 years as we understand that Phosphorus is not very mobile with annual applications. Soil testing prior to seeding and fertilizing to those requirements is strongly recommended.

**Companion Crop Management:** If you choose to use a companion crop, seed the companion crop at 30-40% of normal rate to reduce competition in your forage establishment. If possible, seed at right angles to reduce in-row competition with your forages, and under ideal conditions, harvest as a silage crop. The goal is to reduce the length of time the swath lays on the ground. Remember to use recommended herbicides to control weed growth and reduce competition. Avoid using a competitive crop such as barley or wheat and look to crops like flax, millet or oats as a companion crop.

