



# Keys to Successful Seeding

(Adapted from material written by the USDA Natural Resources Conservation Service, Plant Materials Center, Bismarck, North Dakota)

Establishing a stand of grass or wildflowers requires proper planning and attention to detail. Perennial grasses differ in establishment requirements compared to annual grain crops. Nine keys to successful seeding and establishment are presented in the following narrative. Adhering to these guidelines will greatly improve your chances of a successful grass stand or wildflower patch.

## Key #1 – Kill the Weeds First

Weeds compete with seedlings for moisture, light, space, and nutrients. Optimum control comes with several years of weed management prior to seeding. Weeds can be controlled with tillage and/or herbicides applied before or just after seeding. Dense residue clippings should be removed from the seeded area. Weeds should be controlled with herbicides before they reach 4 inches tall.

**At seeding time, there should be no actively growing weeds.**

## Key #2 – Use Adapted Species

**Seeding the right species, in the right amount, at the right time is imperative to a successful seeding.** Selecting species that are adapted for the conditions you are planting in will make all the difference. Soil, climate, elevation, and exposure all factor into species selection. Furthermore, even if a species grows well at 8,000' elevation, it doesn't mean that it will grow well in all conditions at 8,000'. Wetland species won't likely do well in dryland conditions and vice versa. Likewise, plants that typically grow on Northeast facing slopes may not grow Southwest facing slopes. Just because it grows well on the Front Range, doesn't mean it will grow well up here in the mountains!

## Key #3 – Prepare a Good Seedbed

A proper seedbed is firm and free of competing vegetation. ***Correct firmness is when an adult footprint is only slightly visible on the prepared bed prior to the seeding operation.*** The seedbed can be firmed, if needed, by pulling a commercial or homemade packer or roller. A firm seedbed is essential for proper seeding depth. A loose, fluffy bed will place seeds too deep for proper germination. Seed requiring light for germination will be hindered by a deep planting depth. Seed that germinates but does not have enough nutrient reserve for the shoot to reach the surface is also hindered by a deep planting depth. Most seedings are too deep if you cannot see a few seeds on the soil surface. Grasses can be successfully seeded into a tilled or no-tilled seedbed, provided weeds are controlled and residue is managed prior to planting.

**Most species should be planted at a shallow depth of ¼ to ½ inch. Larger seeds can be planted up to 1 inch deep.**

**Seed to soil contact is imperative. Seeds spread on top of vegetative residue will have much lower germination rates.**

Tillage, fire, and mowing can be used to manage residue prior to seeding. Late summer and dormant seedings are best planted into standing stubble.

**If the seedbed is very uneven, consider drainage concerns prior to planting.** Where will water pool? If needed, attempt to level out the seeding area by moving soil around or adding soil. Be cautious, though, to verify that any soil you add to the site is free of weeds!

## Key #4 – Seed at the Right Time

Grasses should be seeded when soil moisture and temperature are optimum for germination. Grasses are designated either “cool” or “warm” season based on their growth cycle. *In Eagle County, we really only have cool-season grasses.* Cool-season grasses can be planted when temperatures are cooler and day lengths shorter.

Accordingly, the three main seeding windows in Eagle County are:

*Spring* (late April-May right after snow melts off)

*Late Summer* (mid July-early August during the summer monsoons)

*Late Fall* (mid to end of October until first perennial snow)

## #5 – Seed at the Proper Rate

The seeding rate varies based on seed size. Typically, seeding rate directly correlates to seed size (larger seed size equals higher seeding rate).

**On average, you should seed at a rate of 40 seeds per square foot.**

When broadcast seeding by hand, the best way to determine your personal seeding rate is to cut out a 12”x12” piece of cardboard. Spray paint it with black paint. Then, toss some seed onto the cardboard square. If you count more than 40 seeds on that square, you are seeding too thick. If there are not 40 seeds on that square, you need to seed a little heavier.

**PEOPLE GENERALLY OVERSEED.** The problem with overseeding is that it is a *WASTE OF MONEY*. Competition for space, water, and nutrients will limit the number of plants per square foot. Extra seeds does not necessarily equate to extra plants.

If you find it difficult to regulate your seeding rate with small seeds, *you can mix in a filler of sand, sawdust, or potting soil to get adequate distribution of seeds.* Note that drill seeders or broadcast seeders can be calibrated to specific seeding rates, thus minimizing human errors.

## Key #6 – Cover Your Seeds

Seeds are lost when wind and water wash them away, or birds and small mammals eat them. To increase your seeding success rate, it is best to cover your seed. By covering your seeds, you will minimize these losses. Furthermore, all seeds need adequate moisture to germinate and grow, regardless of long-term drought resistance. By covering your seeds, you will retain moisture on the soil surface, thus improving your germination rate.

You can cover your seeds by raking or dragging over your seeds with soil. Mulch is also a good cover. Sawdust, straw, and peat moss are good options for mulch. If you are interseeding into existing grass, mulch may not be necessary. **When you look down at your mulched and seeded area, you should see about 50% mulch and 50% seed covered soil.** If you apply it properly, you won't have to remove the mulch later; it'll just break down and disappear.

## Key #7 – Water, Water, Water

Seeds and seedlings need adequate moisture to germinate and grow. Even if you are buying a drought-tolerant seed mix, your little seeds need ample water. Water lightly and often enough to keep the surface of the soil moist during seed germination, which can take up to two weeks. Watering frequency will be

determined by time of year and weather conditions. As the roots grow deeper into the soil, gradually decrease the frequency and increase the amount of water to encourage deep rooted, healthy plants.

**Make sure to water lightly and frequently. If you drench them too much, you risk washing them away.**

## Key #8 – To Fertilize or Not to Fertilize?

To fertilize or not to fertilize, that is the question. The answer is, "*IT DEPENDS*". If you are seeding into an area that you know is weed free and does not have any weed seeds in it, then you are probably okay to fertilize at the same time as seeding.

If, however, you are unsure that it is a weed free area, then you may want to wait to fertilize. Fertilizer is non-specific, meaning that it will boost the growth of anything that it comes into contact with, including weeds. Because weeds are genetically predisposed to rapid growth and establishment, fertilizer may give them an even bigger boost.

**The safe option would be to wait for one growing season to make sure your seeds can outcompete any weeds. One seed is on the ground, hand pull weeds and avoid herbicide use in the first growing season.**

## Key #9 – Wait to Graze

If you are planning to graze the location you are seeding, it would be best to

**Wait one or two entire growing seasons prior to grazing any animals on the seeded site.**

This will give the sprouts a full year to grow and establish. Otherwise, you may be seeding again before you know it.

**For More Information, contact:**

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