WASHINGTON STATE UNIVERSITY
WALLA WALLA COUNTY EXTENSION

Seedbed Preparation for Forage Seedings

Seedbed preparation has been called the most important step when seeding both legume and grass forages. Good seedbed preparation provides seeding depth control, proper timing of seeding, and competition control.

When planning a forage seeding, you should plan far enough ahead to give yourself the time it takes to perform the needed operations. Start with the desired time of seeding needed for good establishment and work backwards. Be sure to allow for unpredictable weather and machinery maintenance. A delay could rush you too much to do a good job of seedbed preparation and put your seeding too late for optimal conditions.

Since forage legume and grass seeds are so small, they need all the advantages in seeding conditions they can get. This means seed-to-soil contact, adequate moisture, and a seeding depth that will allow the seedling to emerge before it runs out of energy reserves. Small seeds have limited energy reserves.

The recommended seeding depth for most forage legumes and grasses is ¼" to ½". Different soils will require different seedbed preparation methods to ensure this depth. The most common reason for forage seeding failures is seeding too deeply. And the most common reason for seeding too deeply is that the seedbed is too soft. Pack, pack, pack and pack again, especially in coarse textured soils. A "rule of thumb" is that when you walk across a finished seedbed, your footprints should be no more than 1" deep. On the other hand, seed that is seeded too shallow may not have the necessary seed-to-soil contact to keep it supplied with moisture. Broadcast seedings sometimes have this problem. Usually if the seedbed has the proper firmness, a very light harrowing or dragging with a piece of chainlink fence after broadcasting the seed will result in the proper seeding depth and seed-to-soil contact.

The timing of seeding and hence seedbed preparation is dependent on moisture availability. Of course, this is of less concern in irrigated situations. In non-irrigated situations it can be as critical as seeding depth, so plan ahead. For forage legumes we also need to be very aware of the temperature. Legumes will not germinate at as low of a soil temperatures as most grasses. Also, the legume seedlings cannot survive as much cold air as grass seedlings. There is a very narrow window when forage legumes need to be seeded. The seedbed needs to be warm enough for germination, but not too dry for seedlings to survive.

For non-irrigated grass seedings, fall dormant seeding works well in the lower precipitation areas. What this entails is having the seedbed prepared in the fall and

seeding after the soil temperature has gone below 42-45°F. The seeds sit dormant and imbibe moisture during the winter. As soon as the soil temperature rises enough, the seeds begin to germinate and get a head start on weeds.

Competition control during seedbed preparation includes mechanical control and/or chemical control. The type and severity of the weed population will determine whether herbicides are needed or not. For an herbicide to be effective, it must be the right herbicide and applied at the right time. Be sure to follow the label. The biomass from weeds needs to be eliminated. Burning is one method, but local restrictions and guidelines must be followed. One method of eliminating the previous crop is very close harvesting or grazing followed closely by your mechanical seedbed preparation. Another competition control method is as simple as not seeding a companion crop. Research has shown that the advantages of a companion crop are usually outweighed by the competition.

Remember when contemplating a legume or grass seeding, plan ahead and seed at the proper depth of ¼" to ½". Sometimes "Mother Nature" has a hand too. Good luck!

Compiled by John Fouts. For more information, contact WSU Extension Walla Walla County at (509) 524-2685.