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Seedbed Preparation

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SEEDBED PREPARATION

Mindy Pratt and G. Allen Rasmussen

Range Management Fact Sheet

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If you want a successful seeding you must have a properly prepared seedbed. Seedbed preparation is important for producing a suitable medium for seedling germination, establishment, and growth. Poor seedbed preparation is a major cause of failures and poor stands. Because many of the species used in range revegetation are difficult to germinate and have low seedling vigor, it is important to provide ideal conditions for their germination and seedling growth. To help obtain these conditions, the **seedbed must be firm and smooth** so the depth bands on the drill will be able to control the penetration of the drill disks. A good rule of thumb is that if you leave an entire footprint when you walk out into the area to be seeded, the soil is too loose and needs to be compacted. If the seedbed is excessively rough or loose, the drill disks (which are much heavier than a person) will penetrate deeper than the desired seeding depth, and the seeding will fail.

Seedbed's can be prepared in the following ways:

1. Mechanical methods
2. Nurse crops
3. Prescribed burning
4. Chemical methods

MECHANICAL SEEDBED PREPARATION:

Mechanical seedbed preparation can be accomplished with a number of different types of machinery. When choosing machinery it is important to look at the equipments adaptiveness to rangeland, specifically looking at the area being seeded (i.e. rockiness, brush, topography, etc.).

NURSE CROPS:

Nurse crops have been commonly used in establishing rangeland seeding. Oats, barley, and wheat are nurse crops that will readily yield to the perennial forage species as they become established. Suggestions for effective use of nurse crops include:

- Reducing seeding rates of nurse crop
- Drilling crosswise to direction of seeding perennial species or in alternate rows
- Frequent and light irrigation (if possible) until perennial species are established
- Harvesting the nurse crop early

To help firm the seedbed prior to planting, cattle can be turned out into the nurse crop. The cattle will both harvest the nurse crop and compact the ground at the same time. The land manager is then able to seed right into the nurse crop without much additional seedbed preparation.

PRESCRIBED BURNING:

On sites where the resident plant species are readily killed by fire, burning can be an effective seedbed preparation. However, in areas where sprouting shrubs or forbs occur, perennial competition is often not reduced enough by fire. Areas of dense cheatgrass should only be burned if competitive perennials can be established quickly, generally within the first year.

CHEMICAL SEEDBED PREPARATION:

Chemical seedbed preparation is accomplished by seeding shortly after spraying or after a fallow period maintained by herbicides. It is effective if the herbicide:

- Control's a broad spectrum of undesirable plants
- Dissipates quickly after weed control is accomplished
- Is broken down or leached away by the time seeded species germinate or it's not toxic to seedling of the seeded species.

REFERENCES:

Vallentine, John F. 1971. Range Development and Improvements. Brigham Young University Press. Provo, Utah.

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