

**GUIDANCE & ADDITIONAL COMMENTS**  
**FOR CRP Specifications for Seeding (Conservation Cover 327)**

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I. Guidance for all areas

**Seedbed Preparation:**

- Seedbeds for dormant seedings may be loose, but seedbeds for spring seedings must be firm.
- Do not create a smooth pulverized dust mulch.
- For existing stands of introduced grasses that are being converted to native grasses, two full years of preparation may be required to adequately reduce the competition.
- Weeds will be controlled by tillage and/or using herbicides as per label instructions.
- **Seedbeds to convert existing vegetation shall be started in the fall** and fallowed one full year before planting.
- **No weeds should make seed.**

**Timing of Seeding**

See following guidance for each precipitation zone.

**Seed Placement**

- For small-seeded grasses such as Sherman big bluegrass – seed no deeper than 1/8 inch deep.
- For large-seeded grasses such as tall wheatgrass – seed no deeper than 1/2 inch deep.
- For mixtures with a variety of seed sizes – seed depth shall be set with the smallest seeds in mind. Generally, 1/8 to 1/4 inch deep should work for most seed mixtures.

**Seeding Operation:**

- Check seedbed conditions at seeding time. Verify seed placement at the beginning of the seeding operation. Adjust as necessary during the seeding operation when the seedbed conditions change.
- With loose seedbeds use caution as it is easy to place the seed too deep.
- Depth bands and press wheels can help minimize placing seed too deep.

**In General**

- If you are in a true summer fallow area (12" or less) – fall seed
- If you are in an established recrop area (16" +) – spring seed
- If you are in a transition zone (12"-16") – spring or fall seed
- A firm seedbed is essential for spring seedings
- Dry seedbeds do not pack. Concentrate on keeping the seed shallow.

- Good soil coverage over the seed can be difficult to obtain in certain conditions (hard seedbeds). Monitor how the drill is performing throughout the planting and make adjustments as needed. Hooking a 3 or 5 bar harrow behind the drill can also be effective.

## II. Guidance for areas receiving less than 12 inches of precipitation

### **Seedbed Preparation:**

- The goal is to reduce competition from weeds and existing perennial plants while creating “safe sites” for the seed to drop into.
- The ideal seedbed for a grass seeding is cloddy, clean to somewhat trashy, weed-free and furrowed or ridged.
- Seedbeds for dormant seedings may be loose, but seedbeds for spring seedings must be firm.
- **DO NOT create a smooth, “pulverized dust mulch”.**
- For existing stands of introduced grasses that are being converted to native grasses, two full years of preparation may be required to adequately reduce the competition and to increase drill options.
- Weeds will be controlled by tillage and/or using herbicides as per label instructions.
- **Seedbeds to convert existing vegetation shall be started in the fall** with summer fallow completed the following spring and carried over through the fall.
- **No weeds should make seed.**
- **Chemfallow is a higher risk operation.** This technique gave poor success in the Columbia Basin during the late 1980s. Uniform seed dispersal, seed-soil contact and seed depth are the major seeding concerns. Seedlings generally struggle for the first two years or so.

### **Time of Seeding:**

- Dormant Fall seedings (generally required for 14 inches or less of annual precipitation):
- Dormant fall seedings can be made after November 1 or when soil temperatures two inches below the soil surface remains at 40° F. or less for ten or more days.
 

Most areas:	November 1 – February 15
Lower Columbia Basin:	November 15 – February 1
- Broadcast seedings: November 1 – December 31 (unless the seedbed is packed after broadcasting)
- Note: broadcast seeding includes broadcast spreaders, pulling the tubes to dribble the seed and aerial application.

### Seeding Operation:

The goal is uniform seed dispersal and proper seed placement to ensure seed-soil contact. So, it is critical to match the seeding operation to the seedbed conditions and the seed mixture.

- For trashy seedbeds, the seeding operation may need to sweep the residue away prior to dropping the seed.
- With loose seedbeds use caution as it is easy to place the seed too deep. Refer to the example chart below for suggestions:

Trashy seedbeds	Use hoe openers to push the residue away, drop seed into clean strip and pack with press wheel or single packer. Or use single disc opener to slice through the residue, drop seed into the slice and pack with press wheel or single packer
Greater than 1/2 inch of loose soil	Broadcast spreader without harrowing, or pull the tubes without packing
1/2 inch of loose soil	Light harrow first and then broadcast seed, or pull tubes & pack with press wheel or single packer
1/4 inch of loose soil	Broadcast seed first and then light harrow, or drill with press wheel or single packer
Less than 1/4 inch of loose soil or firm seedbed	Drill and pack with press wheels or single packer; or broadcast and pack
Firm seedbed and small-seeded species	Use drill opener to disturb site, pull and tie tubes to apply small-seeded species in the disturbed soil, and follow with press wheels or single packer

### III. Guidance for areas receiving between 12 and 16 inches of precipitation

Depending on site specific conditions grower may need to use < 14 inch precip methods or > 16 inch precip methods. Contact NRCS office for site specific recommendations.

### IV. Guidance for areas receiving greater than 16 inches of precipitation

Spring seedings, March 1 – May 1, Seed as early as you can get good seedbed with spring flush of weeds controlled. It is important to control wild oats, volunteer, and other spring weed seedlings prior to seeding. Spring seedings should be completed by May 1. Seed after May 1 only when it is determined by your local NRCS planner that there is adequate moisture and that moisture is close enough to the surface to germinate the seed and sustain plant growth to at least the 4-5leaf stage. Consider packing or roller packing to assist in bringing moisture closer to surface.

New seedings require firm weed free seedbeds and good seed to soil contact. Seeding into duff is not recommended unless you use a drill that is designed for such conditions. A firm, smooth, not compacted, seedbed is preferred for spring seeding. A seedbed is considered firm when the boot heel imprint of an average person leaves a maximum impression in the soil of not more than one-half inch.

#### Conventional Seedbed Prep and Seeding

1. Fall disk or plow the field.
2. Cultivate in the spring to smooth the surface and kill any weeds.
3. Roll the field to create a firm seedbed.

4. Seed the field with double disk drill equipped with depth bands; or seed with a double disk drill with packing wheels set to severely limit seeding depth.
5. Place seed no more than ¼" deep.

#### Chemfallow – Enhancement of existing perennial vegetation

Typically, conventional seedbed preparation is not recommended due to the difficulty of dealing with the plant crowns during tillage.

1. Fall mow when grass is dried out and stubble is crispy dry to help break up residue so it breaks down over winter chemical applications can reach new growing vegetation.
2. Consider spring harrowing to enhance germination of vegetation.
3. Spring spray with a non-selective herbicide at as high a rate as allowed by label to get a good chemical kill of existing vegetation.
4. Further sprays as needed to keep weeds from making seed and to get a complete kill of existing perennial plants.
5. A drill capable of seeding a low volume of small seed and obtaining seed-soil contact no deeper than 1/8".
6. For rhizomatous and extremely competitive grass varieties, such as sheep fescue or smooth brome, adding some dry fertilizer to enhance spring growth to assist with step 2 and 3 above may be needed.

Refer also to ***Low Impact Reseeding of Grass Stands, Conservation Practice Information Sheet, WAPMC 2011***, (see WA Shared Drive, CRP folder)) for additional information.

### V. Seeding Operations, Comments and Cautions

#### **Broadcast Spreaders**

Broadcast spreaders are one of the best methods of uniform seed dispersal with diverse seed mixtures. This type of seeding operation requires a clean and furrowed or ridged seedbed. With loose seedbeds, create furrows or ridges before broadcasting. **Do not broadcast on a firm, flat seedbed. Broadcast seeding is not applicable on seedbeds with high residue. Broadcast spreaders should be used only for November or December seedings.** Seedings in February or later should be accomplished with a different seeding method.

Aerial broadcasting often results in skips and seed separation due to different seed sizes and weight. **With aerial broadcasting the seeding rate must be doubled.**

All seed in the mix including forbs, legumes and shrubs can be mixed together when using air seeders. If the equipment is set up for herbicide granule application, do not mix seed with rice hulls or other carrier. Fill the hopper no more than 12 inches deep with seed.

#### **Air Delivery Drills**

Depending on the type of openers, some air delivery drills can handle a variety of seedbed conditions ranging from high residue (chemfallow) to bare soil. Other air delivery drills cannot seed in trashy conditions.

Air delivery drills are well suited to distribute a mixture of grass seeds. These drills can be set up to place the seed in a furrow using either a double disk or hoe opener or to broadcast the seed.

### **Double Disc or Conventional Grain Drills**

Bridging in drills can be a major problem when seeding multi-species mixtures if the seed contains awns or straw. To counter this problem, drills should have agitators, seed tubes must be smooth, and you should fill the seed box no more than half full with seed. To further minimize bridging you will need to do one or more of the following:

1. Stop and check the seed box often
2. Mix seed with a carrier (not fertilizer or live grain)

This type of seeding operation may require a clean seedbed. Seedbeds with lots of surface residue may not be applicable to conventional drills. Chemfallow or minimum tillage will not work with conventional drills.

When drilling do not put sagebrush seed in the seed mix. Sagebrush seed must be broadcast generally requires a second seeding operation. Consider mixing small seeded grasses with shrub seed and broadcasting together.

When tubes are pulled for loose seedbeds this is another form of broadcasting. So, all seed including forbs, legumes and shrubs can be mixed together and dribbled through the pulled seed tubes.