



Crop Science Report

RESEARCH/EXTENSION

SUGGESTIONS FOR POST-HARVEST SEED CROP MANAGEMENT UNDER WET-SEASON CONDITIONS IN THE WILLAMETTE VALLEY

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One of the climatic advantages for seed production in the Willamette Valley is the normal dry summer season. Limited rainfall in July, August, and September favors harvest and post-harvest seed crop management. Annual crop plants and weeds die or stop growth. Perennial grass crop plants enter a quiescent stage for several weeks during the hottest and driest months. Regrowth starts slowly with autumn rains and lower night time temperatures of September and October.

Wet and cool summer seasons not only interfere with harvest, but create problems in perennial seed crop management that affect seed production in the following season. Seed producers must consider alternate practices under the special conditions of a wet summer season. Several problems must be considered:

1. Post harvest burning. The regrowth and wet straw make it difficult or impossible to obtain an effective burn. This results in more smoke and greater weed and disease problems in the following seed crop.
2. Active plant growth. Growth during July and August create "late burning" conditions as early as late August. Under these conditions, perennial plants are much more subject to "burn out" and injury that will reduce seed yield in the following year.
3. Excessive summer regrowth. Active plant growth during the wet, but warmer summer months form an unusual amount of vegetation that must be removed for normal autumn crop management.

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CONSIDERATIONS FOR SEED CROP MANAGEMENT

Improving post-harvest burning

Fields should be burned as early as possible after harvest. Delays will increase the possibility of crop damage, reduce sanitation effect and increase smoke due to greater amounts of regrowth. Fluffing straw to increase drying rate is recommended. Straw must be spread uniformly to obtain a good burn without crop damage due to hot spots. This may require a separate operation because combines may not spread high-moisture straw evenly. Straw choppers should not be used on combines under wet-season conditions.

When regrowth is heavy, clipping or chopping will greatly improve burn conditions and effectiveness. The use of a desiccant spray for drying regrowth followed by fluffing the straw will improve burn conditions for 4 to 8 days. However, with high soil moisture and cool temperatures, regrowth occurs rapidly and the effect of the treatment may be lost completely. Several materials are labeled for post-harvest desiccation in Oregon (see table 1). Some desiccants may be injurious to the perennial grass crop. Follow label directions carefully. To be most effective, these materials should be applied during warm, dry weather.

Table 1. Desiccants Registered for Post-Harvest Use on Grass Seed Crops in Oregon, 1983.

Chemical	Manufacturer	Application Rate	Precautions
Chemical name: dinoseb	Wilbur-Ellis Chemical Co.	Use 2-3 quarts product/A with 2-3 quarts Mor-Act Surfactant/A	<ol style="list-style-type: none"> 1. Use in 10-20 gal. water/A by aerial application and 20-40 gal. water/A with ground applicators. 2. Apply 3-6 days prior to harvest or as a post-harvest treatment. 3. Do not feed treated forage to livestock. 4. A dry, warm period of 4-5 days is necessary following application. 5. Use large droplet size to prevent drift. Volatile at high temperatures. 6. Use could result in a seed germination reduction. 7. A restricted use herbicide, avoid skin contact and inhalation of spray solutions.
Trade name: (Contact)			
Chemical name: dinoseb	Oxidental Chemical Co.	Use 2-3 quarts product/A with 2 quarts Oxy- Herb Surfactant/ 100 gal. water	
Trade name: (Contact Weed Killer)			

Late season burning effect

Normally, grass seed fields can be burned up to 60 days after swathing without reducing seed yield potential in the following season. Under dry conditions, this period may be 30 days longer because of the extended quiescent growth period. Late season burning reduces seed yield potential for the following season (see table 2).

Table 2. Seed Yield Reduction from Late Burning.

<u>Crop</u>	<u>Reduction in Seed Yield</u> (%)
Fine fescue	30
Highland bentgrass	35
Orchardgrass	15
Bluegrass	12

Under wet-season conditions, there is little or no quiescent period and, therefore, late season burning conditions exist as early as mid-August. Losses in seed yield potential to 30% are expected. Precautions must be taken to minimize heat injury to the perennial grass plants when burning under late season conditions. a fast burn with reduced fuel, uniformly spread will reduce plant injury.

Removal of excess summer growth

Rapid summer growth followed by normal autumn crop development will result in excess foliage for good seed crop management. A closed canopy in mid-October will interfere with efficient application of soil active herbicides and cause conditions unfavorable to high seed yield potential in the following crop.

If available, grazing with sheep or cattle is an efficient method of removing aftermath growth. Intensive grazing for a short period is preferred to prolonged grazing.

Most Willamette Valley growers must rely on mechanical methods of removing aftermath growth. Mowing, chopping, chopping and vacuuming, or green chopping and removal are options to be considered. Chopped material must be burned or removed from the field in some manner. Cut material must dry for several days before burning is attempted, however, delaying burning more than 2 weeks may produce as much regrowth as before treatment. Fluffing may be necessary to dry material sufficiently to burn. Leaving residue on the field will smother the crop and interfere with weed control.

When flail chopping, the cutter bar must be adjusted to cut above the crown of perennial grasses. Bunch type grasses, such as tall fescue and orchardgrass should be cut 2-4 inches above the soil, while spreading type grasses can be cut at 1 inch.

A more costly option involves removing straw and sanitizing flaming the fields with a flamer. When heavy regrowth is present, a second treatment within 2 to 6 days will be needed to be effective. Flaming for late season sanitation will not be as injurious to plants as the longer duration of high temperatures caused by open burning.

Seed growers have suffered severe crop losses in 1983. However, unless steps are taken to protect the next crop, they face the prospect of loss of seed yield in the next season. Careful planning is needed to weigh the alternatives and minimize the long-term losses.