



# Crop Science Report

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RESEARCH/EXTENSION

## ESTABLISHING BLUEGRASS SEED CROPS IN CENTRAL OREGON

By

Martin Zimmerman and Harold Youngberg (1)

### Introduction

Markets and standards for turf grass seed require exceptionally high quality. Therefore, turf grass seed production requires specialized equipment and timely attention to field selection and production practices.

Grass seed production can fill an important role in a crop rotation by increasing organic matter content, controlling certain broadleaved weeds and distributing the work load over the growing season. However, to obtain the necessary seed quality, crops grown prior to the seed crop in the rotation must be selected and managed to control perennial weeds and reduce potential for volunteer crop plant contamination when the seed crop is planted.

### Selecting Grass Seed Fields

Cropping history is an important consideration when choosing fields to be planted to grass for seed production. Potential problems may arise from noxious weeds such as Quackgrass, Canadian Thistle, Field Bindweed, and Curly Dock. A concerted effort must be made to control the Quackgrass before planting because no selective control is available. Many broadleaf perennial weeds can be selectively controlled during the life of the grass crop, but risk of reduced quality can be avoided if these weeds are controlled before seed crop establishment.

One of the most difficult quality problems in bluegrass seed production is control of volunteer bluegrass. This problem is particularly difficult if certified seed is to be produced. Old bluegrass crowns and rhizomes often survive in other crops in the rotation and quickly develop as volunteers in a seedling stand. Seed from previous bluegrass crops or volunteer bluegrass plants can remain in the soil for many years. Other sources of contamination include irrigation water, drills, trucks or combines which introduce weed or crop seed. Seed from bluegrass plants on ditchbanks finds its way into fields by wind, water and machinery. This contamination is particularly troublesome and must be dealt with aggressively.

(1) Jefferson County Extension Agent and Extension Agronomist, Oregon State University Respectively

Standard weed control practices in mint production do not control bluegrass plants sufficiently to prevent seed formation. Therefore, although grass control appears good, seed may be added to the soil that will produce seedlings in later seasons.

The key to reducing weed and volunteer problems is to select seed fields 3 years or more in advance of planting grass. Growers who work toward having fields as free as possible of weed problems and contamination at planting time will find the task of producing clean seed much easier.

Controlling weeds and volunteer bluegrass during the years when the field is in mint, wheat or other rotation crops is better than waiting until the seed crop is planted. Glyphosate (Roundup) can be used effectively as a spot spray in the crop or after annual crop harvest.

Oregon Seed Certification standards require a field to have been free of bluegrass for 3 years to produce the certified class of seed and for 5 years to qualify for registered or foundation class seed production.

### Preparation of the Fields for Seeding

Growers use a variety of techniques to get the new grass crop established. Many plant into the dry soil and irrigate the crop up. Applying enough water to keep the soil moist below the seedling root level is sufficient to get the stand established. Irrigation techniques will vary with the irrigation system available.

Following wheat harvest, some growers may choose to burn the stubble, then use light tillage, plant, then irrigate. Some may moldboard plow the field if there is no danger of turning up weed seeds. If old bluegrass plants are present, the seeds that have shattered over previous years may be turned up by tillage and now germinate. A few growers first irrigate wheat stubble to germinate shattered wheat seed, burn, then plant the grass crop.

Following a peppermint crop, growers may plant directly into the crop debris, then irrigate the new seeding up. Some irrigate mint stubble, spray with glyphosate, then plant. After garlic, radish or other early-harvested crop, a disc, harrow and roll sequence will make a good seedbed.

### Fertilizing for Grass Establishment

A soil test may be desirable to determine fertilizer carryover from previous crops. Adjustments should be made for residual nitrogen from previous crops. An application of 40-60 lbs. of nitrogen is made at planting time following a wheat crop. After garlic, potatoes or radish seed, residual nitrogen may be sufficient for grass seed crop establishment. Normally 150 lbs. of nitrogen should be available to the crop the first year and a spring application should be made to supplement the residual and initial treatment. If residual phosphorous is over 30 parts per million as measured by soil test, then no additional material should be required.

### Seeding

Bluegrass seed crops are usually planted in 6 or 12 inch rows. Distinct rows make weed control and roguing easier. Twelve inch rows make inter-row spraying possible.

The crop should be planted at a time when conditions favor seed germination. This occurs in late summer when day and night temperatures are lower. Late summer (August 15 - September 15) seeding with adequate irrigation will develop sufficient autumn growth and tillering to produce a good seed crop the first season.

Bluegrass seeds are very small (2.2 million per pound). Therefore, even low seeding rates will produce an adequate stand. However, good seeding equipment is needed to obtain accurate seed rate and placement without seed leaking from the drill. One pound of bluegrass seed in 12 inch rows will place 52 seeds per foot of drill row. Therefore, a rate of one pound per acre provides more than enough seed for an adequate stand for seed production. Higher rates of 2-3 pounds per acre will allow for losses and germination failure.

Seed should be planted no more than 1/4 inch deep in a smooth, firm seedbed.

### Certification

An application for a seedling inspection must be filed at the County Extension Office within 60 days of planting a certified field. Certification tags from planting stock must be saved and submitted at that time. A seedling inspection will be made to assure freedom of volunteer and field eligibility. Roguing may be necessary prior to seedling inspection to meet standards. Removing bluegrass contamination is important at this time because many varieties of bluegrass look alike after they become established and can only be distinguished and removed at this time.

A seed crop application form must be filed each year a certified seed crop is harvested. Roguing of off-type and other-variety plants will be needed each year. Distinctive plant characteristics may be apparent only at specific growth stages, thus the proper roguing time may differ with different varieties.

### Variety Selection

Many improved bluegrass varieties are available for seed production. These include public varieties available to any interested grower or proprietary varieties that can be grown and marketed only under contract with the owner. Some proprietary varieties are grown under the state certification program and some under company standards.

Many improved varieties have excellent seed production potential while others are low. An adjustment in seed price may be needed to provide adequate return to the producer for growing seed of varieties with less than average seed yield potential.

Certification is a voluntary program and participation is determined by economic return. Producing certified quality seed may cost more than common seed but usually earns a premium. For example, a 10 cent premium on an 800 pound yield returns an extra \$80 per acre. Fees and extra roguing are the major added costs. Poor field selection or other conditions that increase weed or seedling contamination may incur extra roguing costs of \$30 or more per acre. The best method of reducing roguing costs is careful selection of fields and controlling potential weed problems including bluegrass volunteers prior to seeding.