University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Historical Materials from University of Nebraska-Lincoln Extension

Extension

1-1-1996

NF96-273 Establishment of Kentucky Bluegrass for Seed Production in the Nebraska Panhandle and Southeastern Wyoming

Ray E. Weed

David D. Baltensperger

Robert C. Shearman
University of Nebraska--Lincoln, rshearman1@unl.edu

Roger Hammons

Jim Krall

Follow this and additional works at: http://digitalcommons.unl.edu/extensionhist

Part of the Agriculture Commons, and the Curriculum and Instruction Commons

Weed, Ray E.; Baltensperger, David D.; Shearman, Robert C.; Hammons, Roger; and Krall, Jim, "NF96-273 Establishment of Kentucky Bluegrass for Seed Production in the Nebraska Panhandle and Southeastern Wyoming" (1996). *Historical Materials from University of Nebraska-Lincoln Extension.* Paper 827.
http://digitalcommons.unl.edu/extensionhist/827

This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Historical Materials from University of Nebraska-Lincoln Extension by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Nebraska Cooperative Extension NF96-273

NebFact

Published by Cooperative Extension, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln

*Establishment of Kentucky Bluegrass for Seed Production in the Nebraska Panhandle and Southeastern Wyoming

Ray E. Weed, Research Technician, Panhandle Research and Extension Center;
David D. Baltensperger, Extension Crop Breeding Specialist, Panhandle Research and Extension Center;
Robert C. Shearman, Extension Integrated Turfgrass Management Specialist, Horticulture Department;
Roger Hammons, Associate Manager, Nebraska Crop Improvement Association;
Jim Krall, Crops Specialist, University of Wyoming Research and Extension Center, Torrington, Wyoming

Markets and certification standards for all turfgrass seed require exceptionally high quality. Therefore, Kentucky bluegrass seed production requires careful attention to field selection, production practices, and specialized equipment.

Grass seed production can fill an important role in a crop rotation by increasing organic matter content, minimizing pest problems such as certain broadleaf weeds and nematodes, and distributing the workload over the growing season. However, to obtain the necessary seed quality, crops grown prior to the turfgrass seed crop in the rotation must be selected and managed to control perennial weeds and reduce potential for objectionable grasses and weed contamination when the seed crop is planted.

Selecting Turfgrass Seed Fields

Cropping history is an important consideration when choosing fields for turfgrass seed production. Potential quality problems may arise from noxious weeds such as Canada thistle, field bindweed, quackgrass, leafy spurge, and curly dock; and from coarse-textured and undesirable perennial forage grasses such as smooth brome, intermediate wheat grass, tall fescue, and rough bluegrass. Many broadleaf perennial weeds can be selectively controlled during the life of the grass crop; however, one should control these weeds and volunteer crops before planting to safeguard greater seed quality at harvest.

One of the most difficult quality problems in Kentucky bluegrass seed production is control of volunteer

plants. Seed from previous Kentucky bluegrass crops or volunteer plants can remain in the soil for many years. Kentucky bluegrass crowns and rhizomes may survive in other crops in the rotation, especially alfalfa, and quickly develop as volunteers in a seedling stand.

Other sources of contamination include irrigation water, drills, trucks, or combines which introduce weed or crop seed even though grass control appears good. Contamination from bluegrasses growing on ditch banks is particularly troublesome and must be handled aggressively. The key to reducing weed and other pest problems is to consider prior cropping history, and then select and manage seed fields well in advance of planting grass. Growers who keep fields as free as possible of weed problems and contamination from combines, drills, and trucks will find the task of producing clean seed much easier and less expensive in the long run.

Controlling weeds and volunteer bluegrasses during the years when the field is in 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.

Nebraska and Wyoming Seed Certification standards require that a field be free of bluegrasses or other objectionable grasses for a given number of years to be eligible to produce the Certified class of seed, and for a longer period of time to qualify for the Registered class seed production. Check the standards for your state, as each state has its own requirements.

Preparation of the Fields for Seeding

Growers use a variety of techniques to get the new turfgrass crop established. Many plant into the dry soil and irrigate to germinate the seed. Applying water frequently enough to keep the surface soil moist below the seedling root level is essential to obtain stand establishment. Irrigation techniques vary with the irrigation system available, but water must be available during the establishment period.

The winter wheat cropping system is one example where turfgrass seed production may be integrated. Spring cereals such as oats or barley may be substituted for wheat in this cropping system. Crops lost to hail in the early summer can also be substituted in this system. When establishing a turfgrass field following wheat or spring cereal harvest, some growers may choose to harvest straw or burn the stubble, use light tillage, plant, then irrigate. These operations have to be well planned as it is critical to plant before August 15th. Others use Roundup instead of the tillage and plant no-till. This works well to prevent erosion on sandier, more wind erosive soils. Volunteer wheat can be controlled by wicking with glyphosate in late May when the height differential between the wheat and grass is greatest.

Spring seedings are less time sensitive and allow for a longer period to prepare the field and make sure it is firm enough. Dry edible beans are easiest to follow, but corn and potatoes can also work well. Spring seedings have the best chance of producing a large grass seed crop the following year.

Fertilizing for Grass Establishment

A soil test should be taken to determine fertilizer carryover from previous crops. Adjustments should be made for residual nitrogen from previous crops. An application of 30-40 pounds of nitrogen (N) and 40-60 pounds of P_2O_5 is made at planting time following a wheat crop. Normally, 110-160 pounds of N (depending on soil type) 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 (P) is over 30 parts per million as measured by soil test, then no additional P should be required. If potassium (K) levels are

medium or lower than 30-60 pounds, then K_2O should be applied. Sulfur (S) deficient soils may be responsive to 10-15 lbs./acre of supplemental sulfur.

Seeding

Whenever the crop is to be planted, success depends on a firm seed bed so that planting depth is controlled to place the seed 1/4 inch into the soil. Kentucky bluegrass seed crops are usually planted in 12-14 inch rows. Distinct rows make weed control and roguing easier. Wider rows make inter-row spraying possible. Given proper production practices, yields are generally higher with wider rows (14 inches) than with narrow ones (6-inch rows).

The crop should be planted at a time when conditions favor seed germination and emergence. This occurs in the spring and late summer when day and night temperatures are lower. Late summer (August 1-15) seeding with adequate irrigation may develop sufficient autumn growth and tillering to produce a seed crop the next season. However, some cultivars seeded in early August will not have a long enough juvenile period, and in some years with cold fall weather no varieties may grow enough to produce a good seed crop the next year. Attempts to intercrop turfgrass seed production fields during the establishment year are not recommended.

Spring seeding (April through early June) requires going one crop production season without a seed harvest because the crop goes through a juvenile stage prior to developing reproductive capability. If the turfgrass is planted in the spring following fall harvested crops, seedbed preparation is not as rushed and chances of having an ideal seedbed are higher, but the producer is losing one crop harvest.

Kentucky bluegrass seeds are very small (1.5-2 million seeds per pound). Even low seeding rates will produce an adequate stand. 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 which usually produces an adequate stand for seed production. Higher rates of 2-3 pounds per acre will allow for seedling losses and germination failure.

Certification of Seed Quality

The Nebraska Crop Improvement Association (P.O. Box 830911, Lincoln, NE 68583-0911; phone: 402-472-1444) and Wyoming Seed Certification (P.O. Box 983, Powell, WY 82435; phone: 307-754-9815) are the agencies responsible for administering the seed certification process. Certification is a voluntary program and participation is usually best determined by economic return. Certification fees and extra roguing are the major added costs. Producing certified quality turfgrass seed may cost more than common seed but usually earns a premium, especially if seed meets Sod Quality standards.

Each turfgrass seed field must have distinct borders (4-5 feet wide) and adequate isolation from other cultivars of the same grass species (check the requirements for your state). The Nebraska Crop Improvement Association (NCIA) or Wyoming Seed Certification (WSC) will make a seedling inspection to assure absence of objectionable grasses and confirm field eligibility. The application for a seedling inspection must be submitted to either the NCIA or WSC office within 60 days of planting a certifiable field. Save the certification and analysis tags from seed bags and your sales invoice as proof of seed origin and class; keep this information on file as part of the field and seedlot records.

For proprietary turfgrass cultivars, the NCIA or WSC is required to obtain a statement from the owner of the cultivar authorizing the contract grower to reproduce seed for planting purposes. An application for field inspection must be submitted by the contract grower to the NCIA or WSC office each year a

certifiable seed crop is to be harvested. Check with your state certifying organization for important deadlines. Other key steps in the quality certification process include seed conditioning, analysis of seed quality, and labeling with official certification labels.

Cultivar Selection and Quality Maintenance

Many improved turfgrass cultivars are available for seed production. These include primarily proprietary ones that are grown and marketed only under contract. Most contracts with the owner require that cultivars be grown, conditioned, and marketed under the seed certification program; and some have additional company standards. Many improved cultivars have excellent seed production potential while others are below average. An adjustment in seed price may be needed to provide adequate return to the producer for growing seed of cultivars with less than average seed yield potential. Certification fees and extra roguing are the major added costs.

Poor field selection or conditions that increase weed or seedling contamination may incur extra roguing costs of $30 or more per acre. The best way to reduce roguing costs is to carefully select fields and control potential weed problems, including bluegrass volunteers, prior to seeding. Roguing may be necessary prior to inspection to meet standards. Removing bluegrass contamination is important prior to seeding time because many cultivars of bluegrass look alike after they become established and can only be distinguished and removed at this time.

For further details on turfgrass seed production in the Nebraska panhandle and southeastern Wyoming, contact the authors.

Suggested Additional Readings and Resources

1. "Effects of post-harvest residue removal on Kentucky bluegrass growth and development: the highlights of eight years of Kentucky bluegrass seed production research *Poa pratensis*, burning." Prog-Rep-Agric-Exp-Stn-Univ-Idaho. Moscow, ID, The Station. Dec 1980. (216) 22p.
2. "Stand thinning in seed production of 'Cougar' Kentucky bluegrass *Poa pratensis*." Agron-J. Madison, Wis., American Society of Agronomy. May/June. v.72 (3).
3. "Effect of foliar fertilization on the seed production of Merit Kentucky bluegrass in 1984." Spec-Rep-Oreg-State-Univ-Agric-Exp-Sta. Corvallis, OR: The Station. July 1985. (747) pp. 51-56.
4. "Grass Varieties in the United States." United States Department of Agriculture: Soil Conservation Service. Agriculture Handbook No. 170. 296 p.
5. "National Turfgrass Evaluation Trial Summaries." National Turfgrass Evaluation Program: Beltsville Agricultural Research Center-West. Beltsville, Maryland.

*Note: "Bluegrasses" include Kentucky bluegrass (*Poa pratensis* L.), rough bluegrass (*Poa trivialis*), plains bluegrass (*Poa arida* Vasey), and other species within the *Poa* genus in the turfgrass industry.

File NF273 under: HORTICULTURE
D-4, Turf
Issued June 1996

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension,

University of Nebraska, Institute of Agriculture and Natural Resources.

University of Nebraska Cooperative Extension educational programs abide with the non-discrimination policies of the University of Nebraska-Lincoln and the United States Department of Agriculture.