

# SEED PRODUCTION

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How is turfgrass seed produced and where is the major area of production?

Let's take a look at the turfgrass seed industry to find out. The major production area in the United States is in the northwest states of Oregon, Washington and Idaho. A combination of factors make these states ideal for seed production. These areas have a climate with a distinct rainy season during the winter months while having predictable dry months of June, July and August where minimal rainfall is anticipated. As the harvest takes place during these months, there is less chance of crop loss due to heavy rains and severe thunderstorms. When seed is produced in other climates with less predictable weather patterns, heavy rainstorms can dislodge and shatter the seed from the delicate panicles. Once on the ground the seed is lost and can't be harvested.

Low humidity is also important during harvesting as the crop is normally swathed first, set in wind rows and allowed to dry in the fields. High humidity and/or dampness from rain for extended periods can cause rotting of the seed, lower the germination, and increase the incidence of disease which can destroy the entire crop.

How is seed grown?

It is not a complicated procedure in theory but in practice the demands are high due to potential weed contamination, insects, disease and other related problems. The seed utilized by the farmer when planting a field is provided by the breeder or more commonly by a seed company. Seed companies either develop their own \*proprietary varieties through company breeding programs, or acquire

\*Varieties for which one individual, group of people or company have sole control over production, marketing and sales.

marketing rights for varieties developed by breeding programs which do not have facilities with which to market and promote a variety. This is usually the case with breeding programs conducted at state universities. For example Lofts Pedigreed Seed, Inc., has the proprietary and/or co-marketing rights to the following varieties Baron, RAM I, Majestic, Touchdown Kentucky bluegrass, Yorktown, Yorktown II, and Diplomat Perennial ryegrasses, Jamestown Chewings fescue and Beaumont Meadow fescue. The company or its agent will contract directly with the farmers to grow a set number of acres at a certain contract price for a predetermined number of years. The seed which is provided to the farmer would be either breeders' seed or very often foundation seed. Breeders' seed is produced under supervision of the breeder of a particular variety. Very strict standards are set with respect to isolation, contamination, and weed control for both breeder and foundation seed.



*Swathing Baron Kentucky Bluegrass*

*Field burning rejuvenates the plants, encourages new plant growth, and kills surface weed seeds.*

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Breeders' seed is produced from plants or clones of the original seed source or plant. The purpose of the Breeder block is to have a basic source of seed which is genetically consistent and uniform according to the description of the variety. Foundation fields are planted from breeder's seed which will provide relatively large quantities of seed of desirable quality which is utilized to plant new or re-established plowed out acres. For example a breeder block of Kentucky bluegrass has 500 plants which will produce 10 pounds of seed. The ten pounds of breeder seed can plant five acres of foundation fields which will in turn produce 3,500 pounds of seed the following year. The 3,500 pounds of foundation seed could be utilized to plant 1,700 acres of production fields. From this 1,700 acres, a harvest of over 1,000,000 pounds of seed would be available for commercial sale. In a period of four to five years, a variety may be increased from a single plant or a few grams of seed to over a million pounds of seed to be sold commercially. The production fields are planted in spaced rows 12 to 18" wide using extremely low seeding rates per acre, 2-3 pounds per acre for Kentucky bluegrass, 5-7 pounds for Fine fescues, 1-2 pounds for Bentgrasses, 15-20 pounds for Tall fescues, and 5-7 pounds for fine leaf Perennial Ryegrasses. To insure genetic purity of a variety and minimize contamination, fields must be rotated every three to five years as every field planted has a seeding and plow out schedule. Fields planted to sexual grass species are isolated far enough from other varieties of the same species so that pollen from a nearby field will not fertilize the desired crop.

After the field is seeded to "Baron" Kentucky bluegrass, for example, the field agronomist, employed by or acting as a representative for a seed company, must take special precautions to see that off types and aberrants (plants which are not characteristic of the variety being grown are eliminated.) The agronomist advises and works with the farmer to see that field hands walk every foot of the field looking for plants that are larger, smaller, have different color, textures, etc., than the desired variety. These plants are eliminated by spot spraying with a contact total kill herbicide. The purpose of this procedure is to provide uniformity from plant to plant within a field. Weeds are selectively removed from the fields by using various herbicides. Fields which have extremely high weed infestations will be plowed up as directed by the field agronomist, thus resulting in a total loss with the crop in order to assure high seed quality.

There is one harvest per year. Harvest takes place between the months of late June thru August. Each species matures and is ready for harvest at different time periods. Kentucky bluegrasses, Tall fescues, and Fine leaf fescues mature first during late June and early July. Next are the Perennial Ryegrasses in mid-July followed by Bentgrasses in mid-August.

From seeding to harvest all fields are routinely visited by state seed inspectors whose responsibility is to verify records as to what variety and species was planted in a field. They also check for weed contamination, if any, and for off-types and aberrants, which may prevent a variety from being certified. The state inspectors, field agronomist and farmers do an excellent job in assuring the public a source of high quality turfgrass seed.

After harvest the seed is combined to separate the seed from the seed head while straw, dust and other inert debris are removed by cleaning machines. These cleaners utilize different size screens and air blowers to sift and separate the viable seed from weed seeds and undesirable elements. All seed is labeled by lot numbers designating the farmer and field in which the seed originated. All seed is tested by licensed laboratories for percent purity, germination, inert matter, and weeds. Seed not meeting strict quality standards as regulated by state and federal laws, can not be sold as certified seed.



After harvest, preparation has already begun for next year. One of the most critical field procedures conducted in an established field after harvest, is to burn the field stubble with fires set and controlled by the farmers. The field burning is necessary to rejuvenate the plants, encourage new plant growth, kill weed seeds, and temporarily kill surface soil pathogens. If not burned, the yield generally will decline in succeeding years.

The procedures described above have been generalized in some cases, and only the most important grass species utilized for fine and sports turf have been mentioned. However, I feel it is important for everyone interested in turfgrasses to have a basic understanding of seed production procedures.

## CORRECTION:

Our apology to U.S.S. Agri-Chemicals for omitting their name in our list of advertisers that appeared with The President's Message in the April 1979 issue of "The South Florida Green".

# ROUNDUP

Two major turf products — one an herbicide and one an improved turfgrass variety — have joined forces to provide professional turf managers with a new, effective program for renewing or renovating existing turf areas.

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