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Dry Bromegrass Seed Artificially

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By Don F. Grabe



(J. W. McManigal)

ARTIFICIAL DRYING may be the answer for one of the big problems in the production of high quality smooth bromegrass seed—getting the seed dry enough for safe storage.

Many bromegrass seed lots are low in germination ability because of heating which occurs in piles of seed of high moisture content. Because the seed must be dried quickly, seed companies and growers are considering artificial drying as a solution to the high moisture problem.

Tests at Iowa State College have shown that drying with heated air will accomplish the desired results and is entirely practical.

Two important factors must be considered when drying seed of any crop if the quality of the seed is to be maintained. The first is the temperature the seed reaches during the drying process. The high temperatures used in drying feed grains soon destroy the germination ability of the seed.

The Author

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It is difficult to recommend a standard temperature for drying seeds since resistance to heat injury depends on the moisture content of the seed—the drier the seed, the more heat it will stand without being injured. For instance, in laboratory tests, bromegrass seed with 20 percent moisture is not injured by temperatures of 122° F. for 48 hours, but at 30 percent moisture, the ability of the seed to germinate is lost after 8 hours.

The second important factor is the length of time of drying. Seeds will stand a high temperature for a few hours but will be killed with more extended exposure.

In field drying tests at the Norfolk, Nebr., branch of the Ouren Seed Co., newly harvested lots of bromegrass of various moisture contents were dried in a portable "Cropgard" dryer. With this equipment, seed of 20 to 25 percent moisture was dried at temperatures up to 140° F. without injuring the germination.

These high temperatures do not injure the seed because the air is continually forced through the load of seed and moisture is rapidly removed. The seed may be dried within two to four hours at these temperatures with-

out injury, but the seed would be killed if exposed to these temperatures over a period of one or two days. Therefore, drying periods should not be needlessly prolonged.

Seed with more than 25 percent moisture should be dried at somewhat lower temperatures. Bromegrass seed should be dried to approximately 12 percent moisture for safe storage.

When drying seed with other types of dryers, it is necessary to determine the temperature pattern which develops in each type of dryer and for each type of seed.

The temperature of the seed is generally a few degrees lower than the temperature of the heated air, but this may vary with type of dryer, kind of seed, and resistance to air movement. Small seeded grasses and clovers, for instance, pack tighter than the larger seeded grasses and movement of air may be more restricted.

Artificial drying looks promising for bromegrass and other seeds *IF* temperatures are regulated according to moisture content and care is taken not to dry the seeds too long. Germination tests taken after the seed is dry will serve as checks on the safety of the operation. ★