1-1-1957

Drying Facilities Boost Seed Quality

H. D. Bunch

DRYING FACILITIES BOOST SEED QUALITY [1]

H. DEAN BUNCH [2]

The need for seed drying facilities in the South has been reemphasized by conditions of the past growing season, especially the wet, humid early summer. Those of us who have been especially interested in good seed have long "preached" the importance of driers in the production of high quality seed. True, driers are regularly used for hybrid seed corn, rice, and a few other special seed crops. But it is taking the commercial production of the small grains and hybrid sorghum, and the use of field picker-shellers for corn to show the importance of drying of grain. How much more important is it that we give at least equal attention to seed crops.

When a seed matures on the plant the moisture content of that seed is in the range of 25 - 35 percent, depending upon the crop. In any event it is too wet to harvest and store safely under ordinary conditions. Water must be evaporated from the seed until it is dry enough for storage or sale. During this drying period the vigor and viability can move in only one direction - down. The amount of vigor and vitality lost depends upon the length of time required for the drying process and the environmental conditions prevailing during this period.

Under conditions of low soil moisture and low air humidity field drying on the plant occurs rapidly, consequently, good quality seed is likely to result. However, under the conditions which too often occur in the South, high moisture and/or high humidity, this natural drying time may be quite lengthy.

Let us examine the situation and determine what may happen, often does, to the seed crop as it stands in the field drying. First, each seed is respiring (breathing), as all life does, but wet seeds respire much faster than dry ones. Respiration uses energy and the only source of energy is within the seed itself. Therefore, when this drying period is prolonged, an excessive amount of energy is used, which can leave seeds with low vitality or even reduced viability. While the slowly drying seed is dissipating energy by "burning the candle at both ends" so to speak, other sinister forces are at work. High winds and beating rain test the strength of plant roots and stalks, diseases of various sorts have ample time to become established, and field infestation of storage insects occur in some crops during this stage.

---

[1] Reprinted from "Seedsmen's Digest, October 1957.

[2] Dr. Bunch is Supervisor, Seed Technology Laboratory, Mississippi State University, State College, Mississippi.

The effect of such deteriorating factors can be nullified to a great extent by the use of an artificial drier. Furthermore, the use of a drier will lower harvesting losses due to shattering and enable the producer to prepare the land for the next crop earlier than would otherwise be possible.

It looks as if grain production in the South is on the increase and accompanying this increase in production is the construction of grain elevators. Those elevators which also have drying facilities are doing a land office business on wheat, oats and sorghum. With the wider use of the corn picker-sheller we expect that much commercial corn will soon be artificially dried.

Perhaps some of these grain driers will be used for seed driers. In any event their use accentuates the need for attention toward our seed crops. (A word of caution: seed for planting cannot be safely dried at as high temperature as grain).

One of the most comprehensive bulletins on drying to be published is written by J. W. Simons of the Georgia Station. We take pleasure in recommending it to anyone interested in drying seed. Ask for, How to Dry and Store Grain and Seed on Georgia Farms, Bulletin No. N.S. 33, Georgia Agricultural Experiment Station, Athens, Georgia. In this bulletin Mr. Simons answers such questions as "Which method of drying should I use", "How much air do I need for safe drying," "What kind and size of fan should I use" and many other pertinent questions. Anyone considering on the farm drying will do well to acquire this publication.