THRESHING SAMPLES OF KENTUCKY BLUEGRASS SEED

In studies pertaining to Kentucky bluegrass seed production at the Kentucky Agricultural Experiment Station it became necessary to develop a rapid process for threshing quantitatively small lots of Kentucky bluegrass seed. Bluegrass seed is difficult to thresh and clean because of the filaments at the base of the lemma. When the attempt is made to thresh it with a combine or grain thresher the filaments on different seeds cling together, causing the seed to mass in clumps. Seed in that condition cannot be cleaned properly; consequently it is impossible to thresh and clean bluegrass seed satisfactorily with equipment used for other ordinary kinds of seed.

Commercial threshing and cleaning of Kentucky bluegrass seed are essentially two steps in one continuous process. The threshing consists of mechanical beating of the rough cured seed and the removal of the straw and other more or less coarse material. The retained portion of the rough cured seed is next subjected to prolonged rubbing that breaks the filaments from the lemma. As the rubbing continues, the broken filaments collect into cottony balls that are removed readily in cleaning the seed.

Because the process of commercial threshing of Kentucky bluegrass seed requires a continuous full charge of material in one unit of the threshing outfit, it was impossible to use a small scale model for quantitative threshing of small lots of seed. Various other ways of threshing were tried, including hand rubbing, before a simple and effective process was devised. This process combines beating and rubbing in one operation.

The apparatus devised for the rubbing consists of a partitioned box that holds two rows of jars or metal cans (Fig. 1). A disk is attached to each end of the box. When threshing, the box is turned by longitudinal rollers which are turned by an electric motor, and the box thus rotated. The box must be rotated rather slowly—about 25 to 65 rpm, depending upon the size of the box. Suitable speed-reducing pulleys must be used.

A sample of rough cured bluegrass seed is placed in each container along with a somewhat larger volume of ¼- to ⅔-inch limestone fragments. Undoubtedly other kinds of fragments could be used, but limestone fragments were superior to other kinds tried. Each container is closed with a lid that fits tightly on its top edge. The length of time required for complete threshing varies somewhat with atmospheric humidity and with other conditions. Usually the seed is threshed in 30 minutes with very little dehulling of seed. Threshed seed is cleaned on a properly adjusted small fanning mill driven at constant speed by a small motor.

Obviously the size of the container must be such as will accommodate the sample of rough cured seed to be threshed. A sample from a 2-square-foot area can usually be threshed in a 1-pint jar. Smaller samples may require a quart jar or larger container.

For threshing rather large samples, the rough cured seed, together with the proper amount of limestone fragments, is placed in a cylinder of suitable size and then rotated in horizontal position (Fig. 2). If these samples weigh ½ pound or more they are first partially threshed in a small plot thresher over