A LABORATORY THRESHER FOR SMALL SEEDED LEGUMES

B. L. Norwood

The thresher described in this paper was developed for threshing seed from a large number of individual plants. It was designed primarily for threshing alfalfa, but it also has been effective for threshing Lotus, Trifolium, Lespedeza, and several Medicago species. In all cases, seed injury was minimal.

Materials required for fabricating the thresher were simple and readily available. A slow speed electric drill (350 to 750 rpm) having a 1/2-inch chuck was used to power the thresher attachment. The thresher attachment consisted of an exhaust or intake valve from a valve-in-head internal combustion engine (Fig. 1). A heavy gauge aluminum drinking tumbler was used to hold the seed pods. The dimensions of the aluminum drinking tumbler were compatible with the valve. The narrowest diameter of the tumbler (bottom I.D.) was approximately 5 mm greater than the diameter of the valve face.

The depth of the tumbler was such that when the face of the valve rested on the bottom of the tumbler, the stem extended above the lip of the tumbler for insertion in the drill chuck.

The face of the valve and the bottom of the tumbler were covered with a corrugated rubber matting with fiber reinforcement. Discs of matting were cut to size and one was glued to the valve and another one was glued to the tumbler with epoxy glue. The disc for the base of the tumbler fit snugly so that seeds could not lodge between the matting and the tumbler wall. A disc of pressed paper or thin metal served as a pattern for making extra discs. A glue that decomposed at approximately 65 C was selected.

Operation of the thresher consists of placing the electric drill in a stand so that the armature shaft is vertical. The valve stem is inserted into the chuck. Pods are poured into the aluminum tumbler and the tumbler is moved vertically so that the valve comes in contact with the pods at the bottom of the container. With a little practice, the operator can sense when all of the pods are threshed. Partially lowering and shaking the tumbler

---

1 Contribution from the Crops Research Division, ARS, USDA, Beltsville, Md. Received Aug. 24, 1966.