A MECHANICAL METHOD OF DEHULLING SMALL SAMPLES OF OATS

A MECHANICAL method of dehulling small samples of oats was devised in Minnesota in 1947 and has been used effectively on four successive crop years. A study was conducted on the relative efficiency of the tedious method of hand-hulling as compared with this mechanical method. It was found that hull percentages determined by the two methods were in good agreement and that the mechanical method reduced the amount of time expended per sample. The method was devised with the cooperation of J. L. Larson and C. E. Christensen of the Minnesota State Seed Laboratory, University Farm, St. Paul 1, Minn.

The method, as used on replicated trials, is outlined as follows:

1. Two-hundred kernel samples are counted from each replication of each variety. Dehulled kernels are not included. Primary and secondary kernels are included in the sample and are counted as they come at random in the bulk sample. The counted samples are stored together in order to have a near uniformity of moisture content.

2. All samples of a given replication from a given location are then weighed on a torsion balance, in grams to the nearest thousandth of a gram. The samples of a given replication are then run on the same day during a period of time usually of several hours.

3. A sample is placed in a dehulling machine originally designed for dehulling sweet clover (Fig. 1). No specific name has been given the machine, which is simply a large tin can, with corrugated sides having a set of baffles inside, powered by an electric motor. Samples are run for a period of 30 seconds.

4. The hulled sample is then placed in the South Dakota Seed Blower column 1 and blown for 30 seconds beginning with a low pressure and increasing the pressure mechanically through an adjustment in the column until only the groats plus unhulled grain remain (Fig. 2). Unhulled grains are pinched out by hand if no more than 20 kernels are unhulled, while if more than 20 are left unhulled the sample is separated and the unhulled grains are run through steps 3 and 4 again.

5. The sample of groats is then weighed.

6. Per cent groats is determined by dividing the weight of the groats by the initial weight of the sample.

7. Per cent hulls is determined by subtracting the per cent of groats from 100.—William R. Kehr, Division of Agronomy and Plant Genetics, Minnesota Agricultural Experiment Station, St. Paul, Minn.

DRILL FOR EXPERIMENTAL PLOTS

A TRACTOR-MOUNTED four-row drill for nursery plots has been constructed and used during the past year for seeding crops in the Nebraska Outstate Testing Program. It is an adaptation of the machine described by Grafius1. The mechanism has been mounted on a four-wheel tractor and a variable-speed feed belt drive has been added.

The seeding unit consists of a special troughed rubber V-belt hopper which delivers the seed to a four-way

---

1Paper No. 690 of the Misc. Journal Series, Minnesota Agricultural Experiment Station.