A POWER-DRIVEN SEED METERING DEVICE

A DEVICE for rapid and accurate measuring and packing of seed to be sown in replicated yield nurseries has long been needed. In the past, equal amounts of seeds have been determined by weight or by hand filling a container to a constant volume. The seed is then transferred to a standard envelope. To speed this work, a machine was constructed to measure and package equal amounts of seed.

The machine consists of a seed hopper, a cylinder with a variable sized seed chamber, an electric motor to turn the cylinder, and a grain spout to receive the grain from the seed chamber and transfer it to an envelope (figure 1). The hopper will hold from 3 to 4 pounds of grain and fits tightly over the cylinder 4 inches in diameter and 21/4 inches long. A seed chamber, 11/8 inches in diameter and 31/2 inches deep, was drilled into the face of the cylinder. In the center of the seed chamber, a 1/8-inch bolt 4 inches long was fastened solidly. A 1/8-inch round brass plate was drilled to fit on the 1/8-inch bolt inside the seed chamber. By turning the plate onto the bolt the volume of the seed chamber can be altered. A sleeve with a second bolt allows the cylinder to 40–50 R.P.M. The left-hand end of the shaft, on which the cylinder is mounted, has a switch which allows the cylinder to turn one revolution and stop. When another envelope is placed under the spout, the switch is then touched and may be immediately released, thus activating the cylinder for one more revolution.

The entire device is on a hinge so that when all of one variety has been packeted the machine can be tipped forward to permit emptying the remaining grain into a sack. There is no place for grain to lodge and thus cause mixtures when changing from one variety to another.

A comparison was made between the power-driven metering device and a hand-filled measuring cup. One hundred samples were measured with each method, using three different cereals, Rescue spring wheat, Vantage barley, and Park oats. These samples were measured into coin envelopes. The samples were weighed before and after being measured to determine the amount of moisture on the longevity of imported seed under laboratory and warehouse conditions. To determine the effect of moisture on the longevity of imported seed, a comparison was made between the power-driven metering device and a hand-filled measuring cup. One hundred samples were measured with each method, using three different cereals, Rescue spring wheat, Vantage barley, and Park oats. These samples were measured into coin envelopes.