A VERSATILE NEW EXPERIMENTAL THRESHER

The improvement of machines for threshing nursery rows and test plots of small-seeded grasses and legumes is a continuing problem confronting agronomists, plant breeders, plant pathologists, and other agricultural scientists. The principal problems encountered in test plot threshing have been (1) recovery of essentially all of the seed present in widely varying amounts of harvested material in an undamaged condition, and (2) the avoidance of seed mixtures when different species and varieties are being threshed. Also, there has been a need for an easily transportable machine that can be readily adjusted to thresh not only the small-seeded grasses and legumes, but also vetches, peas, and cereal grains.

An experimental thresher to meet all of these requirements was developed recently by the United States Department of Agriculture and the Oregon Agricultural Experiment Station, cooperatively (see figure 1). Before constructing the thresher, several references were consulted and agricultural workers contacted to gain information on experimental type threshers already in use, and to determine the merits of the different types of threshing cylinders.

Allen, Jones and Bunnelle, and Park, et al. showed the relationship of cylinder speed to seed quality, which emphasized the need for easy, quick speed adjustment and an accurate speed indicator. Park reported the superiority of the angle bar cylinder for threshing crimson clover. Hawthorn suggested the use of interchangeable screens for greater efficiency. Elling reported the superiority of the angle bar thresher sieve. Vogel, et al. described a thresher that is especially well adapted for threshing cereals, lacks screen capacity, ease of cylinder speed adjustment, and concave clearance adjustment for small-seeded crops, vetches, and peas.

Description

The new machine is a mobile unit, mounted on a 2-wheeled, rubber-tired trailer and is designed so that the over-all height is at a minimum and the center of gravity is low, thus facilitating transportability, operation, and storage. The principal features of the machine are as follows:

A feed regulating cylinder running at 65 rpm and driven through a slip-clutch, meters the flow of material into the threshing cylinder. This feature avoids overload, aids in maintaining a constant flow of material through the machine, protects the operator from objects that might be thrown from the threshing cylinder, prevents valuable seed from being thrown out, and provides a safety device in the slip-clutch that reduces possibilities of serious injury to the operator, and damage to the machine.

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