LITERATURE CITED


Notes

A VERSATILE GRAIN AND FERTILIZER APPLICATOR

Numerous machines have been developed (2, 4, 5) to reduce labor costs in planting small grain variety trials. Machines have also been made to adapt portions or all of the small grain variety seeders for distributing fertilizer. Hunter (3) has developed a 4-belt distributor which has been used universally by soil scientists in fertilizer plot work. No provision, however, is made in the machine for distributing one sample of fertilizer over more than one row. Fertilizer has to be measured or weighed for each row. In order to speed up the operation of the 4-belt machine, attempts have been made to include a dividing provision in the machine, and, thereby only one belt would be necessary for each plot. Two dividers, developed by Grafius (2) and by Smith et al. (6), were tried at this station but neither proved entirely satisfactory in obtaining uniform division of the fertilizer.

1 Contribution from Agronomy Department, South Dakota State College, and South Dakota Agr. Exp. Sta., Brookings. Published with permission of Director as Journal Article No. 390. Received Mar. 1, 1958.

Description of Machine

After many changes in plans and construction a machine mounted on an Allis-Chalmers Model G tractor was developed for drilling grain and applying different rates and kinds of fertilizer at the same time. Principles involved in the machines developed by various workers have been incorporated in one machine. A view of the machine is shown in figure 1.

The grain, when seeded at a constant rate independently of the fertilizer with a separate mechanism made of appropriate parts from a conventional drill. This mechanism eliminates the necessity of measuring out the grain and placing it on the belt with the fertilizer. A box serves as the seed carrier and frame of the drill. The box shown is 36 by 6 by 5 inches; twice the capacity would be more satisfactory.

The fertilizer is fed by a belt into a stainless steel divider which separates the fertilizer for as many rows or compartments in the divider. The fertilizer is directed by tubes to the seed or to any location desired, as shown most clearly with cover off in figure 2.