A TWO-ROW NURSERY HARVESTER

SOME years ago Brown and Thayer described a garden tractor attachment which was used for cutting rod-rows of small grains. They were able to cut one or two rows at a time with this cutter.

A similar attachment has recently been built to fasten to a Jari-mower. The Jari and attachment are shown in Fig. 1. The principal improvement of this machine over the older one is the shortness of its overall length. It is only 72 inches long. With the other machine a number of ranges of plots had to be cut at the same time because turning the cutter required a wide turn-around-area. Consequently individual plots of oats which ripened ahead of the average had to be cut by hand. The new machine is so short and easily pivoted that it can be turned in a 5-foot alley way and thus individual plots can be cut with ease.

The cutter and attachment weigh less than 200 pounds, so it can be transported easily to any location for cutting rod-row plots.

The two center rows of a four-row plot are cut at once and after all plot harvesting is completed the discard border rows are cut with a grain binder. A crew of five persons is required for efficient operation of the machine. One drives the tractor, one uses a paddle to keep the grain upright, two bag the heads of the grain bundles, and one ties the bundles.

The Jari tractor described here has two limitations, one is that it does not have sufficient power to push through severely lodged grain, and the other that when the ground is damp from rain or dew too much slip.

SEED SETTING AND GERMINATION IN HYPARRHENIA HIRTA (L.) STAPF (SOUTH AFRICAN BLUESTEM) AS AFFECTED BY NITROGEN, PHOSPHORUS, AND POTASSIUM

THERE seems to be a general agreement among workers that seed yields of grasses may be increased by applications of nitrogen and that phosphorus and potassium have little effect upon yields either with or without nitrogen. Burton discussed the influence of these materials upon the percentage of florets to set seed. Calder reported that fertilizers have no appreciable influence on the power of germination, but there was a slight difference in favor of the control over phosphorus plus potassium. Hyparrhenia hirta has not only been observed to be a poor seed producer, but in all reported trials the germination percentage has been low. The grass appears to be of value in sections of Texas as a forage crop; thus, in May, 1946 a fertilizer experiment was set up on a Lufkin fine sandy loam soil in an effort to determine the influence of nitrogen, phosphorus, and potassium on seed setting and germination. Plants were set 3 feet apart in 3-foot rows. Each plot was 9 by 12 feet and contained 12 plants of which 6 were harvested. The design used was a 2 by 2 by 2 factorial with three replications. The nitrogen (N) was applied at the rate of 60 pounds, phosphoric acid (P₂O₅) 80, and potassium oxide (K₂O) 40 pounds per acre.

Seed planted in pots, at a depth of one-half inch in a media of two parts compost and one part clay, germinated 81% in 5 days. Therefore, it may be assumed that Hyparrhenia hirta seed germinate in a relatively short period. This fact was further substantiated in an electrically controlled Mangelsdorf germinator. Alternating temperatures of 20°C and 30°C were found to be the most satisfactory for germinating the seed. There appeared to be no difference between the germination of seed from the 1946 and 1947 crop or between blotters moistened with tap water and 0.2% potassium nitrate solution. Seed from the 1947 crop germinated slower but the per cent germination was the same as in

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Notes

Fig. 1.—The Jari-mower with small grain cutting attachment.

1Contributed by the Department of Agronomy, Texas Agricultural Experiment Station, College Station, Texas.


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