Results of this preliminary study indicate that proper fertilization, when practiced annually, may reduce the amount of velvetgrass in a pasture stand, but fertilization alone is probably inadequate for complete control.—

RICHARD H. HART, formerly Research Fellow (now Research Agronomist, USDA, ARS, Coastal Plain Experiment Station, Tifton, Ga.) and WILLIAM S. MCGUIRE, Associate Professor, Farm Crops Dept., Oregon State University.

A VERSATILE SMALL GRAIN NURSERY PLANTER4

THE necessity for adapting nursery planters for planting specific crops has resulted in numerous planter innovations in the last 20 years. Several planters have been described in the Agronomy Journal and in state agricultural experiment station publications. This paper reports a versatile nursery planter that has been used successfully since 1954 for seeding nursery plots of rice, oats, barley, wheat, and flax. It was first assembled in 1954 by H. M. Beachell and J. T. Henderson at the Rice-Pasture Experiment Station, Beaumont, Texas. Slight modifications were made and are included in this report. This nursery planter or some variation thereof might be useful to plant breeders who undertake to plant similar experimental nurseries.

A Bolens Huski Ridemaster (Model 35AB) tractor was adapted for the power source of the planter.2 The tool bar, seat for the operator, clutch, throttle, and steering mechanism were modified to provide space for mounting the sliding seed tray (Figure 1). This planter was designed to plant 4 rows spaced 12 inches between rows; however, number of rows and row spacings may be varied within the limits of the 48-inch tool bar. A row marker is mounted in front of the motor (Figure 2).

The sliding seed tray is a modification of the one described by Rea and Meek3 and has been adapted to several other tractors for planting and fertilizer application. The seed tray is without top or bottom and is divided into four or more separate compartments. A seed belt (made of 1/4-inch rubberized fabric) that traverses around 2 rollers forms a false bottom to the seed tray which is mounted inside a metal tray-rack frame which is attached to the Bolens tractor with flat steel braces. The seed belt is attached to the front edge of the seed tray and is pulled around the rear roller by a drive pinion when the tractor is in motion. When seed are placed on the belt inside the seed tray and the tractor is activated, the seed are carried to the rear and dropped from the belt into open spouts provided for the four seed tray compartments. Thus, the seed tray and seed belt move to the rear of the tractor together. The seed tray is driven by a pinion shaft attached to the left front edge of the seed tray and the drive pinion attached at the left rear of the tray-rack frame. This pinion is chain-driven by sprockets mounted on the axle of the left rear ground wheel. The seed tray drive pinion is equipped with a throw-out device, a front and rear stop which disengages the seed tray at a predetermined plot length. The number of teeth on the drive sprockets determines the speed at which the seed tray moves in proportion to the ground speed of the tractor. Different-sized sprockets can be used to accommodate the different plot lengths desired.

The planter shoes are regular John Deere sugar beet drill spear point openers MD 624 D. The depth of planting is controlled by a conveniently located rack-lock hand lever which also functions to raise and lower the tool bar. Regular Planet Junior covering plows are mounted behind each opening shoe (Figure 2).—G. W. RIVERS and H. M. BEACHELL, Research Agronomists, Crops Research Division, ARS, USDA, College Station and Beaumont, Texas.

EFFECT OF AMMONIUM SULFATE ON WATER INFILTRATION RATE OF HESPERIA SANDY LOAM SOIL

LONG-TERM rotation plots were established in 1957 at the U. S. Cotton Research Station, Shafter, Calif. The three crop rotations (replicated three times) were: (1) Alfalfa 2 years, cotton 2 years; (2) corn 1 year, cotton 1 year; and (3) continuous cotton. Each of the seven crop phases appeared each year. The whole plots were split for 2 rates of nitrogen, 0 and 80 pounds per acre for cotton, and 0 and 150 pounds per acre for corn. No nitrogen fertilizers were applied to the alfalfa. The corn and cotton were sidedressed at planting with ammonium sulfate placed about 8 inches on each side of the row (40-inch row spacing) and about 7 inches deep. A yearly (fall) application of superphosphate at the rate of 18 pounds P per acre was broadcast uniformly over all plots.

The first rotation cycle was completed in 1960. Infiltration rates were measured on the cotton plots in 1960, 1961, and 1962. Infiltration was determined volumetrically by measuring the water entering the furrow from the head.