One characteristic of varieties or treatments in sirup manufacture is the amount of skimmings. These data are usually somewhat more erratic than the percent sirup. Even so, there was a relatively high correlation (+0.7583) between the 2 pans for this characteristic.

A very critical evaluation of sirup is the final density as measured by the finishing temperature. The standard finishing temperature for sorgo sirup at Meridian is 110 °C. Results from the 2 pans were very close, the widest discrepancy (1 °C.) being well within the sampling error. The average temperatures of the finished sirups in the 2 pans were within 0.1 °C.

Advantages of the small pan over the standard are: (1) the number of samples processed per day was increased from 7 to 12 for sorgo and from 12 to 16 for sugarcane; (2) it is now possible to test breeding lines of sorgo as early as the F₂ generation in 1/1000-acre plots and to evaluate sugarcane lines in the 1/1000-acre advanced nursery plots; (3) early evaluations for sirup make it possible to discard undesirable lines 1 to 5 years earlier than before; and (4) the smaller juice sample required for the sirup test reduces the cutting and harvesting cost in regional sorgo variety experiments. Ten-stalk samples rather than 15- to 20-stalk samples are collected. In many cases, it is possible to use a smaller vehicle for the harvesting trips and thus reduce the over-all cost of operation.

The development of this small sirup pan is the most significant improvement in sorgo and sugarcane sirup evaluation techniques since the Station started using steam heat several years ago.—O. H. Coleman, Research Agronomist, Crops Research Division, ARS, USDA, Meridian, Miss.

**A SMALL, VERSATILE, TRACTOR-MOUNTED DRILL FOR EXPERIMENTAL PLOTS**

A considerable number and variety of specialized, nursery drills have been described by workers who have designed and constructed such equipment for their particular needs in crops research. The construction and operational features of the drill described here differ in many respects from any described heretofore, to the knowledge of the authors. The principal advantages of this drill include (a) simplicity of design and construction, (b) ease of operation, requiring only the tractor driver, (c) all controls within easy reach of the operator, (d) clear visibility of all functional parts during operation, (e) excellent maneuverability, (f) rapid and accurate adjustment of rate and depth of planting, and (g) ease and rapidity with which seed hopper can be emptied and cleaned for the purpose of planting successively several crops or varieties with little delay in the field.

The drill is mounted on an Allis-Chalmers Model G tractor (Figure 1). Although no longer manufactured, this tractor is currently in widespread use. The drill utilizes the tractor's hydraulic system and split-type front lift shaft for maneuverability, (f) rapid and accurate adjustment of rate of all functional parts during operation, (e) excellent maneuverability, (f) rapid and accurate adjustment of rate and depth of planting, and (g) ease and rapidity with which seed hopper can be emptied and cleaned for the purpose of planting successively several crops or varieties with little delay in the field.

The seed hopper (1), with about a 1-bushel capacity, was taken from a small lawn-fertilizer spreader. Ten of the round holes for fertilizer delivery at the bottom of the hopper were welded shut. These 10 holes are spaced along the length of the hopper, with the long dimension perpendicular to the direction of movement of the hopper. The flared cup atop each downspout is fastened to a stationary bar and is positioned directly under one of the delivery holes in the hopper.

A movable shutoff plate (2) governs the openings of the seed delivery holes by its sliding movement along the holes at the bottom of the hopper. This same part of the lawn-fertilizer spreader, is controlled by forward or backward movement of a control handle, and consequently the shutoff plate, opens or closes the hopper. This movable catch (5). Rate of sowing is altered by changing the number of samples processed per day was increased from 7 to 12 for sorgo and from 12 to 16 for sugarcane.

1 Numbers in parentheses refer to construction features identified in Figures 2 and 3.