What We Need In a Beet Drill

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We are all today facing the necessity of changing as rapidly as possible from our present hand labor methods of growing the sugar-beet crop to the mechanization of the crop. It is apparent that it will be necessary to handle part of the crop mechanically this year if we are going to *get* and successfully handle the acreage that it is now indicated the growers desire to grow.

Tn order to mechanize the thinning successfully, it is necessary that the proper stand of beets be secured. This means that as far as the Great Western districts are concerned we must come to a lower seeding rate per acre, using as far as possible drills that will give uniform spacing of the seed in the row.

Considerable work has been done and progress has been made in solving this problem. Last winter a remodeling of some of the John Deere 55's was done, and one of these remodeled drills was furnished to each factory district of the Great Western Sugar Company. Tn all cases excellent results were secured. Stands obtained from plantings with this remodeled drill are easily handled by either a hoe alone, by blocking, or by a combination of both. Any of these methods eliminates finger work and saves from 50 to 75 percent of the labor necessary to handle spring and summer work on the crop.

Changes made in remodeling this drill were as follows: Cans were lowered and set immediately on top of the disk furrow openers. Seed was discharged from the cans into a half-inch diameter, stainless-steel tube. The tube ran down through the disk furrow opener with a slight curve in the tube, discharging the seed almost immediately below the hub of the disk. This discharged the seed ai. the proper point so that the seed was not caught between the disk and yet was deposited in the furrow soon enough so that any dirt rolling back into the furrow would not give an uneven depth of planting. It was necessary to install a jack shaft driven from the regular shaft above in order to drive the plates in the cans on this remodeling job.

Lowering of the cans to the disk furrow opener casting made a complete unit out of the cans and disks so that at the end of the row the can, tube, and disk were raised together.

Last spring the John Deere Company put out an experimental 6-row drill built along similar lines and of course a better mechanically built drill than was obtained on the remodeling.

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Both of these drills give very satisfactory results in the distribution of the seed without sacrificing the ability to use the implement as an all-purpose drill.

For the intermouutain districts, or any district where other crops such as beans, peas, soybeans, corn, etc. are grown, growers need an all-purpose drill adaptable not only to beet planting but to other crops. This principle, 1 believe, also applies to the manufacturers in order to give them a volume of production. A can-type drill with piates for use on other crops seems to meet, the needs of the growers.

Such a drill should embody the following features:

1. Can-type drill with changeable plates quickly converted from small, smooth tube to standard spiral tubes or vice versa. Beet plates should have slightly tapered holes 1/64 inch greater in diameter than the size of the larger seed. Thickness of plate not greater than 8/64 inch for the 7-10 seed. This thickness could, T believe, be also used for 7-9 seed.

Plates should be accurate in the spacing of the holes and carefully machined. For beet planting a small stainless-steel tube not more than $^1/_2$ inch in diameter should be used.

2. Low cans set down on top of the disk furrow opener casting, making a complete unit of the can and furrow openers. No apparent difference has as yet been found in the distribution of the seed using the high-can, long-tube or low-can short-tube, both discharging the seed below and immediately under the hub of the disk furrow openers. However, in the operation of the drill in the field, unless the tube is fixed so that it will telescope, care must be exercised in turning around at the ends of the field. In converting drills now in the hands of the growers the long tube, leaving the cans in their present, positions, makes a very satisfactory drill. However, in the production of new drills, certainly the low can makes a better mechanical drill.

.3. A wide range in gear ral io should be provided giving different seeding rates, not only for beets but for other crops. For the beet crop it should be possible to get as low as 1 pound per acre.

4. Disk furrow openers. A difference of opinion exists on the merits of the disk furrow opener and the shoe furrow opener. T believe that practically all tests in the intermountain area and certainly in Great Western territory show better germination results with the disks.

5. Depth bands on disk furrow opener should be easily attached or removed. Three sets of bands should be furnished with the drill, 1 inch depth, $1\text{-}^3/_4$ inch depth, and $2^1/_2$ inch depth.

6. Chain drive should be eliminated wherever possible and gear-to-gear drive used. All chains should be of the roller type.

7. Steel sprockets should be used. It is very desirable that wear on both chains and sprockets be held to a minimum.

8. Press Wheels. On most of the work on improvement of drills, the press wheels have been neglected. It is possible that some improvement, can be made.

8. The furrow planting—planting $2^1/_2$ inches deep and removing an inch of soil, or the ridging of dirt over the seed covering the row with about 3 inches of dirt, have merit under certain conditions. Attachments for either of these methods .should be available in the hands of the dealer, not necessarily being furnished with the drills.

The type of drill just described does not make too radical a change from the present plate drills of all makes and it should again be emphasized that it will give very satisfactory results in the drilling of beet seed and still can be used for other crops.

It is unfortunate that under present conditions the implement companies will not be able to put many new drills on the market. The immediate problem is 1o convert in some way as many as possible of the drills now in the hands of the growers so that better results may be obtained in the distribution of the seed in the row.