

MECHANIZATION OF SUGAR BEET PRODUCTION ON THE MARCH¹

By
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Sugar beet growing on a commercial scale in the Red River Valley³ began with the construction of the sugar beet factory at East Grand Forks, Minnesota, in 1926. In 1947 more than 36,000 acres of beets were harvested in the area. Including government sugar payments growers received a gross income of approximately \$4,250,000 from the 1947 crop. The opening of another factory at Moorhead, Minnesota has increased the 1948 plantings to about 50,000 acres. Available plant capacity will permit still further increases in acreage. Sugar beets have become an established crop and an important source of income in the Red River Valley.

Not only is the sugar beet industry in the Valley growing in acreage, but it is "growing up" in terms of production practices. It is becoming a mechanized industry. Mechanical harvesters were used successfully on a commercial scale in this area for the first time in 1947 when approximately 7 percent of the total acreage was harvested by machines. Experience with these harvesters justifies a belief that machines will soon replace hand labor used in pulling and topping beets. Less progress has been made toward eliminating hand labor used for blocking, thinning and hoeing beets than for harvesting. However, many growers believe that through the use of improved seed, more accurate drills, improved cultivators and a harvester which will successfully top small and irregularly shaped beets, these operations, too, will be mechanized. Current developments along all of these lines give real significance to predictions by leaders in the industry that within five years the Mexican and other contract labor which has, heretofore, been so closely associated with sugar beet growing will have been practically eliminated.

Problems in the further mechanization of beet production are not limited to the Red River Valley. They characterize the industry in all sections of the United States. The competitive position of the Valley as a beet producing area will depend upon how successful growers here are in adapting new machines and practices to local conditions. At present there is some question as to whether mechanical harvesters can be made to work as successfully in the heavy soils of the Valley, particularly when they are wet, as in the lighter soils and drier conditions of the irrigated areas. More experience is needed to answer such questions. However, growers in this area have been leading the way in utilizing machine methods of production to date, and there is good reason to expect they will make full use of further developments.

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³See postscript at the end of this article.

The most significant result of mechanization of the beet industry will probably be the improvement of the competitive position of sugar beets relative to other crops in the farm organization. At present most growers report that their most serious objection to sugar beets as a farm enterprise stem from problems associated with contract labor. Many growers state that the development of mechanical means of growing and harvesting the crop is a prerequisite for continued production regardless of whether or not such developments result in lower production costs. (Of course it is usually assumed that mechanization will eventually result in cheaper production). This is particularly true in regard to harvest operations. One grower reflected a rather general attitude toward harvesting problems when he stated his reason for using a harvester as follows: "I don't know whether the harvester saved me any money last fall or not, but I can sleep better nights when I have a machine which I know will be on the job and ready to work when the crop is ready to harvest". In this area where farmers are machine minded and where other major crops are produced almost entirely by machine methods the elimination of hand labor on beets will make them a much more attractive crop. As another grower reported, "It just doesn't make sense to be using all this hand labor on beets when we grow our other crops by machinery."

During the period beets have been produced in the Valley growers have found them a generally profitable crop. Until recently beet contracts have been eagerly sought. During the last few years, as a result of exceptional yields and very favorable grain and potato prices, sugar beets have been relatively less profitable than formerly. However, growers generally believe that, over a period of years, beets will again regain their former favorable position. For this reason most growers have wanted to maintain or increase their beet acreage even though they may have thought that at 1946 or 1947 prices beets were not particularly attractive. This consideration is an important factor in explaining why growers have taken immediate advantage of the opportunity for acreage expansion made possible by the opening of the Moorhead factory. Sugar beets are produced and sold only under contract arrangements with the processing company. The acreage contracted is definitely limited by plant capacity. Under normal conditions, the demand for beet acreage on the part of farmers has exceeded plant capacity. The policy of the Sugar Company has been to continue existing contracts. Thus an established history of production may be of considerable value to a grower in the future.

The desire of farmers to increase sugar beet acreage in the Valley is of long standing. The opportunity to do so has come with the opening of the Moorhead factory. And it has come at a time when other crops offer exceptional returns for use of land and other resources. To a considerable extent it is to be more sure of satisfactory contracts in the future that old growers are maintaining or increasing present acreages and that many new growers started with the crop in 1948. Under such conditions growers tend to look very critically at the beet enterprise and to give serious thought to

all possible methods of eliminating those features of the industry which they find most difficult to handle. This means that at the present time they are particularly interested in machines which will replace contract labor.

Another factor making for rapid mechanization of the beet enterprise in this area is the number of growers now raising beets for the first time. The number of beet contracts in the Valley increased from about 600 in 1947 to approximately 900 in 1948. These new growers are faced with a choice of investing in older style harvesting machinery which will probably be obsolete long before it is worn out, or of buying mechanical harvesters, which, while not completely proven, offer reasonable prospects of being successful. With these choices many new growers are going all out for mechanical production. Older growers are more apt to use present machinery until new machines have been thoroughly tested.

In contrast with growers in some other beet producing areas, farmers in the Red River Valley have long been interested in larger beet acreages. The use of machines which will eliminate or greatly reduce the present extensive use of hand labor will undoubtedly increase the optimum size of the beet enterprise on the individual farms. For this reason farmers in this area are concerned about the possibilities of acreage quotas. They want to know they can grow a sufficient acreage to permit efficient use of the new labor saving machines. In 1947 average beet acreage per grower was slightly more than 60 acres per farm. However, 60 percent of all growers harvested less than 60 acres; 38 percent harvested less than 40 acres, while 11 percent harvested less than 20 acres. Experience to date indicates that single row harvesters will handle about 75 to 80 acres of beets per season. It is expected that the two-row machines, some of which are being used this year, will handle up to 200 acres per season. Thus there does appear to be considerable need for increased acreage on many farms if harvesting machines are to be fully utilized, even though many will, doubtless, be used cooperatively.