STORAGE OF SUGAR BEETS UNDER CONDITIONS OF HIGH HUMIDITY AND LOW TEMPERATURE

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STORAGE of sugar beets for breeding purposes has been accomplished in the past in a number of ways. The methods most commonly employed included the root storage cellar and the pit silo or trench, in each of which the beets as a rule were covered by or packed in some moisture-holding medium, such as moist sand, as recommended by Pack (3), or ordinary moist field soil. Straw cover has been used to some extent, and Harris (1) reported satisfactory results from storage in dry sand. Kohls (2) reported that mother beets coated with paraffin and stored in crates in a root cellar, without sand or any other covering or packing material, kept satisfactorily. For best results it was necessary to remove the paraffin from the root sutures before planting. The importance of minimizing loss of water from the roots apparently has been rather generally recognized, and was emphasized by Pack.

For the period between harvest and analysis, Pack (4) suggested piling without packing material in a ventilated but covered pit in order to induce a more uniform moisture content. He recommended that the roots be analyzed within a relatively short period after harvest and then be stored over winter in moist sand.

This paper describes a method of moist cellar storage in which considerable economy of labor is effected through elimination of paraffin, sand, or other treatment. The loss of sucrose which occurred in beets stored by this method is compared with that which occurred with the ordinary pit silo.

METHODS

Several crates of mother beets were stored satisfactorily throughout the entire winter of 1933-34 in a root cellar at the U. S. Sugar Plant Field Station, Fort Collins, Colo, without the use of paraffin coating, packing material, or cover of any kind. These roots, after about 2 months of storage, were rasped as though for analysis and then returned to the cellar, simulating approximately the usual routine of handling mother beets at the station. Temperatures a few degrees above the freezing point and high humidity were maintained. No loss in weight occurred, other than that resulting directly from the removal of a portion of each root in the rasping operation, foliage growth was slight, and the beets were in good condition at the end of the storage period.

In the fall of 1934, this method of storage was adopted for general use at the station. Satisfactory results were obtained during the two winters which followed.