INFLUENCE OF INBREEDING AND SELECTION ON SEED PRODUCTION OF SPACE-ISOLATED MOTHER BEETS

H. L. Kohls and E. E. Down

The influence of continued inbreeding and selection upon the seed production of space-isolated mother beets was studied with strains of sugar beets used in the regular breeding program at this station in 1930, 1931, and 1932. Mother beets isolated in 1930 and 1931 were selected from material inbred zero, one, or two generations. Fifteen mother beets were also isolated in 1930 from lines inbred three generations. The mother beets isolated in 1932 were beets grown from the seed of mother beets isolated in 1930 and represent lines inbred one, two, three, or four generations.

The pedigrees of all lines of these mother beets trace back to selections made from high-producing brands of commercial beet seed included in the variety tests at this station. The pedigrees of mother beets isolated in 1930 and 1931 trace back to these same commercial brands, but they represent different original selections. No data are available to show the seed producing habits of these commercial brands from which the original selections were made; however, no difference in seed production, death rate, failure to send up seed stalks, or total sterility were observed among the selections which were made from the different commercial brands. Mother beets from lines inbred one, two, three, or four generations do not represent random