

A Monogerm Gene from MW 391

DONALD F. PETERSON¹

During the summer of 1950 two monogerm roots of Dr. Savitsky's line SL.C 101 were used as pollen parents in producing F_1 hybrids with several of our varieties, one of which was Holly 13, the stock source of our commercial variety MW 391. This F_1 was given the breeding number 011-00C59.

In the winter season of 1950-51 plants of the F_1 011-00C59, and the parental variety, Holly 13, were produced and a backcross was made using the self sterile Holly 13 as the female plant and the self fertile F_x 011-00C59 as the male parent. This backcross was given the breeding number 111-00C265.

Seedlings of this backcross were produced during the summer of 1951, given thermal induction in the root cellar, and transplanted to the greenhouse during the 1951-52 winter season for the purpose of self sterility and self fertility classification.

In this segregating population of 700 plants, one plant was found to be monogerm. Since the F_1 plants in the original cross must be assumed to be heterozygous (Mm) for the monogerm gene, then the only possibility for a monogerm plant to appear in the backcross generation would be for one of the Holly 13 plants used in the backcross to be heterozygous for the monogerm gene also. The resulting monogerm plant in the backcross must have obtained one recessive gene from the F_1 parent and the other recessive gene from Holly 13.

This new monogerm segregate has been used in hybridization with several of our breeding stocks during the 1952-53 winter season. Monogerm segregates from these crosses will be studied with interest and should be valuable in our future breeding program.

¹ Plant Breeder, Experiment Station, Holly Sugar Corporation, Sheridan, Wyoming.

SUGAR SEARCH INSTITUTE

MACKAY