

A SWISS CHARD GARDEN BEET HYBRID

Frank F. Lynea^{1/}

In 1938 two roots of swiss chard, a form of Beta vulgaris commonly grown in vegetable gardens for the edible tops, and one root of the common red garden beet of the Crosby variety were planted as an isolation allowing them to cross pollinate. The seed produced was harvested separately from the chard and garden beet plants. The seed produced by the chard plants was planted in the field in 1939 and thinned to twelve inch spacing. Only two chard plants occurred in the population indicating a high percent of crossing in 1938. Twelve large, oval shaped, red roots, reasonably free of side roots, with garden beet type foliage were selected from this population for seed production in 1940. These F₁ roots had an average weight of two pounds and five ounces and an average percent sucrose of 8.6%. A portion of the F₂ seed produced in 1940 was planted in the field in 1941 and the plants were thinned to twelve inch spacing. Segregation occurred in this generation giving rise to many types of roots and foliage. Twenty-one large, conical shaped white roots, with only minor side roots and beet type foliage without red color were selected from this population for seed production in 1942. These F₂ roots had an average weight of two pounds and an average percent sucrose of 15.6%. A portion of the F₃ seed produced in 1942 was planted in the field in 1943 and the plants were thinned to 12 inch spacing. All of the plants produced were similar to the sugar beet in shape, size and color with an occasional minor side root. Eight roots were selected for seed production in 1944. These roots have an average weight of two pounds and one ounce with an average percent sucrose of 16.1%.

The F₃ ^{generation} germination of this hybrid will be evaluated in variety tests in 1944 in comparison with commercial varieties of sugar beets. It will also be evaluated in crosses with sugar beets. This chard x garden beet hybrid may prove of value in sugar beet breeding work.

^{1/} Associate Agronomist, Beet Seed Breeding Department, Holly Sugar Corporation, Sheridan, Wyoming.