been permanently described according to the requirements of the I. C. I. system.

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Flowering of the Jersey Type Sweet Potato

J. J. MIKELL, JULIAN C. MILLER, and J. B. EDMOND

Department of Horticulture Research, Louisiana State University, Baton Rouge

Within the past 11 years certain investigators (*1–5*) have induced flowering and fruiting of many varieties, strains, and introductions of the sweet potato (*Ipomoea batatas* Lam.). In these investigations, varieties and strains of the Jersey type were a noticeable exception in that they failed to produce flowers under the conditions described. This was most unfortunate, since they generally produce a high percentage of No. 1 roots and have an attractive skin and the desired shape. Thus, the induction of flower primordia with the subsequent development of fertile pollen and ovules would be highly desirable, since the excellent characteristics of the roots of the Jersey type could be combined with disease resistance, general adaptability, and vigor of other types.

During the fall of 1947 two plants of Maryland Golden produced a small number of functional flowers in the breeding nursery of the Horticulture Research Department of Louisiana State University. Since many sweet-potato breeders are interested in the development of flowers and seed of varieties and strains of the Jersey type, a description of the conditions under which the plants flowered is presented.

The breeding nursery in which the plants were grown is equipped with vertical trellises constructed of chicken wire 6′ high and arranged in rows 8′ apart. The soil type is well drained, moderately fertile, slightly acid Lintonia silt loam. Vine cuttings were taken from plants grown in the field during the last week of October 1947, planted singly in 12″ clay pots, and trained to 1″ × 1″ × 5′ stakes. The plants were grown in a greenhouse until April 22, when they were set in the nursery rows. The greenhouse was maintained at temperatures varying from 75° to 85° F during the day and from 60° to 65° F during the night, and the plants were watered as often as necessary to permit steady vegetative growth. At the time of transplanting, the stems were 8–9′ long, the internodes were short, the leaves were normal in size and color for the variety, and the roots had thoroughly ramified through the soil in the pots. However, there were no indications of flower bud development. This was in sharp contrast to the large number of flower buds which had developed on certain seedlings which flower readily.

Transplanting operations consisted of making holes directly under the trellises 30′ apart, 18″ deep, and 12″ wide, thoroughly mixing with the soil about ½ lb of a 4–12–4 commercial fertilizer in each hole, transferring the plants from the pots to the holes, and firming the soil around the roots. In general, the plants recovered rapidly from the check in growth incident to shifting to the nursery.

Growing operations consisted of training the vines on the trellis to provide for maximum exposure of the leaves to sunlight and air, and manipulating the nitrate and water supply to promote rapid development of vines during spring and early summer and a slow growth of vines during late summer and fall. About 40 days after transplanting, $NaNO_3$ was applied, as a side dressing, at the rate of ½ lb/plant, and water was run in small irrigation furrows at biweekly intervals in May and June, at weekly intervals in July and August, and at biweekly intervals in September. Irrigation water was not applied in October. No vine trimming or stem girdling was practiced. October weather was particularly favorable for the slowing down of vine growth and the accumulation of carbohydrates, a condition associated with flower bud formation. The days were bright and warm, the nights were comparatively cool, and the rainfall was only 0.93″.

On October 28 small clusters of comparatively slender flower buds on 3–4″ slender peduncles appeared in the axes of short secondary stems on 2 of the 6 plants. The expanded corolla was about 1″ in diameter and was pale pink with a light purple throat. The stamens were slightly prostrate, and the anthers extended slightly above the level of the stigma. Pollen production was low. The superior pistil was normal in appearance and, when receptive, retained pollen on the stigma. Six cross-pollinations were made. Of these, 5 were unsuccessful, and one, between Maryland Golden and seedling L-130, was apparently successful. The ovary of the Maryland Golden, the female parent, began to grow—characteristic of successful pollinations. However, low temperatures on November 8 and 9 prevented further ovary development.

Observations at the Louisiana Experiment Station on the behavior of Maryland Golden indicate that the Jersey type requires relatively long periods for the vegetative and reproductive stages. Apparently, the vegetative stage requires conditions favorable for the development of a large number of vines; the reproductive stage, conditions favorable for the accumulation of carbohydrates for a longer period than is necessary for flowering of varieties of other types.

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