

Research Note

PROGRESS IN GUAVA SELECTION IN PUERTO RICO¹

Guava (*Psidium guajava* L.) is a very popular fruit in Puerto Rico. There is considerable demand for it for processing and also for use as a fresh fruit. Almost all the guava fruits harvested in the Island come from wild trees, growing in pastures and wastelands. These fruits are highly variable and generally of poor quality. Their supply is often insufficient and undependable.

In 1966-67, 35,000 cwt. of guavas was harvested from wild trees and used in making jelly and nectars worth \$127,000; and during the same period pre-processed pulp and rinds, valued at \$90,000, were imported.

Guava is severely affected by the *Glomerella* disease caused by the fungus *Glomerella cingulata* (Stom) Spaulding and Schrenk. The disease causes mummification and blackening of immature fruits and rotting of mature fruits. It occurs in all the guava-growing regions of Puerto Rico. In many localities up to about 50% of the guava crop is usually lost due to this disease.

All the guava varieties now available for cultivation in Puerto Rico are severely affected by the *Glomerella* disease. In spite of some efforts, no method to control the disease has been found. Consequently, there is an urgent need for guava varieties resistant or at least tolerant to the disease, and desirable for cultivation in Puerto Rico. At this Station, efforts to develop such guava varieties have been in progress since 1970. A brief report on the progress of this work up to 1979 follows:

First generation progenies of six commercial guava clones of Puerto Rico, PR2, PR3, PR4, PR5, PR6, and PR7, comprising 960 seedlings, and 10 populations of wild guava comprising 800 seedlings, were planted in the field at the Gurabo Substation in 1973. At this location the incidence of the *Glomerella* disease is very severe. Guava trees produce their main crop in the fall. From 1975 and up to 1978 four fall crops of these guava progenies and populations were studied. After careful consideration of the available information, 15 trees tolerant to the *Glomerella* disease and giving high yield of large size fruits were finally selected. They were propagated asexually by the air layering method.

Fourteen populations of guava varieties for home gardens of Puerto Rico, comprising 886 seedlings, were planted in the field at the Gurabo Substation in 1975. In 1978 these guava populations produced their first fall crop of small size. In the fall of 1979 they produced heavily and were

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evaluated. After careful consideration of the information collected from the fall crops of 1978 and 1979, 10 trees, tolerant to the *Glomerella* disease and yielding large size fruits, were finally selected and asexually propagated.

It is possible that some of the above-mentioned 25 trees finally selected may have low incidence of the *Glomerella* disease and high fruit yield because of especially favorable environmental conditions prevailing at those spots in the field where they are growing rather than to their genetic makeup. Therefore, it is essential to compare the performance of their clonal progenies by planting them in replicated plots.

The clonal guava progenies with very low incidence of the *Glomerella* disease and giving high fruit yield in two to four fall crops are to be further evaluated as to the quality of their fruits. Ease in harvesting their fruits and their general adaptation are also to be considered.

Finally, the best two or three clones tolerant of the *Glomerella* disease—clones of high yield, of high quality fruits, of trees easy to harvest, and well adapted—can be released for cultivation in Puerto Rico.

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