

## Research Notes

### CANNING OF RIPE PLANTAINS IN SYRUP<sup>1</sup>

Plantains are among the most important agricultural products of the mountainous area of Puerto Rico. They are used extensively both in the green and in the ripe stage. The ripe stage shelf-life, however, is very short. Research was conducted trying to develop a procedure for the preservation of ripe plantains in syrup by canning. There is no information on this type of preserve in the literature.

Preliminary work clearly demonstrated that a marked discoloration as well as hardening of the pulp developed almost immediately after canning. Variations in parameters such as pH, syrup concentration, water and steam blanching, seed removal, syrup composition, slice size, and pretreatment of the pulp were introduced without satisfactory results. However, a good quality product with a shelf-life of about 2 months was obtained by slow boiling in syrup, following prefreezing of the slices. The product prepared following this procedure did not change in color or texture for 2 months. Organoleptic evaluation indicated a slow decrease in general quality after 3 months (table 1).

TABLE 1.—*Organoleptic evaluation (scale 0 to 6)*<sup>1</sup>

Time in storage	Appearance	Flavor	Texture	General acceptability
<i>Days</i>				
0	5.0	4.1	4.8	4.3
60	4.8	4.1	4.2	4.1
90	3.2	2.8	2.7	2.7

<sup>1</sup> 0 is unacceptable; 6 is highly acceptable.

To obtain good quality ripe plantains in syrup, the following procedure is recommended: Harvest plantains as recommended by Sánchez et al.<sup>2</sup> and ripen in environmental chambers using the procedure described by Sánchez et al.<sup>3</sup> A proper stage of development and suitable ripening are essential for a good final product. Hand-peel ripe plantains, discard the ends and cut into slices 1 to 1½ in thick. Remove seeds with the aid of a cork-borer so as to extend shelf-life. Then quick freeze the slices at -40°

<sup>1</sup> Manuscript submitted to Editorial Board, May 27, 1975.

<sup>2</sup> Sánchez Nieva, F., Colom Covas, G., Hernández, I., Guadalupe Luna, R., Díaz, N., and Viñas, C. B., Pre-harvest changes in the physical and chemical properties of plantains. *J. Agr. Univ. P.R.* 52(3): 241-55, 1968.

<sup>3</sup> Sánchez Nieva, F., Hernández, I., and Viñas, C.B., Studies on the ripening of plantains under controlled conditions, *J. Agr. Univ P.R.* 54(3): 517-29, 1970.

F in a plate freezer and store at  $-10^{\circ}$  F. Thaw the slices in water at room temperature, add a  $30^{\circ}$  Bx (100% sucrose) sugar syrup, and slowly boil the mixture until it reaches a  $55^{\circ}$  Bx concentration. Use 3 lb of syrup per pound of slices. Boiling to higher concentrations would produce discoloration in storage (pinkish-violet). When the syrup reaches the desired concentration, place the plantains in sterile 303 enameled cans (about 7 to 8 oz/can). Pour the syrup while still boiling and seal the cans immediately.

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