

## Research Note

### SENSORIAL AND CHEMICAL EVALUATION OF SAPODILLA (MANILKARA SAPOTA L. V. ROGEN, ACHRAS SAPOTA LYNN.) VARIETIES<sup>1</sup>

Fourteen sapodilla varieties were harvested during the 1989-90 season and submitted to sensorial and chemical evaluation. These varieties are part of the sapodilla collection established at the Fortuna farm of the Agricultural Experiment Station in Juana Díaz, P. R., and were not included in the sapodilla experiment evaluation previously reported.<sup>2</sup>

The sapodilla collection consists of 16 varieties (two to four trees per variety) that were planted in September 1971 on a 1.18-

acre tract at Fortuna substation. A contour planting system of the trees was used with no experimental design. Two of the 16 varieties, Mendigo IV and Homestead Seedless, were not evaluated at this time because of insufficient fruit production. The 14 varieties evaluated were Modelo, Hanna, Mendigo I, Mendigo II, Mendigo III, Mendigo Playa, Vasallo I, Vasallo II, Vasallo III, Vasallo IV, Guilbe, Arcilago, Gallera and Gallera Tenerife.

TABLE 1.—Sensory evaluation of sapodilla (*Manilkara sapota* L. V. Rogen) varieties.

Variety	Mean values <sup>1</sup>	
	Appearance	Flavor
Modelo	1.86	1.50
Hanna	1.67	1.00
Mendigo I	1.62	1.08
Vasallo IV	1.43	0.93
Mendigo II	1.41	0.25
Vasallo I	1.27	0.73
Guilbe	1.27	1.55
Arcilago	0.88	0.69
Mendigo III	0.79	-0.14
Vasallo III	0.77	0.38
Vasallo II	0.75	0.58
Gallera	0.44	0.50
Mendigo Playa	0.22	1.00
Gallera Tenerife	0.15	0.46

<sup>1</sup>Average of 2 evaluations per variety using +2, -2 scale; +2.0= Highly acceptable; +1.0 = Acceptable; 0 = Questionable; -1.0 = Slightly not acceptable; -2 = Not acceptable.

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<sup>2</sup>Vélez-Colón, R., I. B. de Caloni and S. Martínez Garrastazú, 1989. Sapodilla (*Manilkara sapota* L. V. Rogen, *Achras sapota* Lynn.) Variety trials in southern Puerto Rico. *J. Agric. Univ. P. R.* 73 (3): 255-64.

The sensorial evaluation of the fruits was done by a 9- to 11-member taste panel in at least two sessions, on the basis of a +2, -2 scale.<sup>3</sup> The criteria used for the evaluation were fruit appearance and flavor. The criteria used in the chemical analyses of the fruits were brix, pH, acidity (%), reduced sugars (mg) and total sugars (mg). Tables 1 and 2 summarize the results obtained.

In relation to the appearance of the fruits the varieties found acceptable or more than acceptable (mean values = +1.0 to +1.9) were Modelo (+1.86), Hanna (+1.67), Mendigo I (+1.62), Vasallo IV (+1.43), Mendigo II (+1.41), Vasallo I (+1.27) and Guilbe (+1.27). As to flavor, varieties Mendigo Playa and Hanna were found acceptable (+1.0), and varieties Guilbe (+1.55), Modelo (+1.50) and Mendigo I (+1.08) had more than acceptable values (+1.0 to +1.9). Within all the varieties evaluated, the best and worst in appearance were Modelo (+1.86) and Gallera

Tenería (+0.15), respectively. Flavor evaluation showed Guilbe variety (+1.55) as the best and Mendigo III (-0.14) the worst.

Chemical evaluation of sapodilla fruit analyses showed a value range from 19.9 (Mendigo I) to 25.4 (Mendigo Playa) in brix; 4.93 (Mendigo III) to 5.55 (Hanna) in pH; and 0.09 (Modelo and Hanna) to 0.16 (Mendigo III) in acidity (%). As to the reduced sugar content (mg), Gallera had the lowest (7.14), and Guilbe the highest (11.99). The lowest total sugar content (mg) was found in Gallera (10.36), and the highest in Modelo (14.80).

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TABLE 2.—Chemical evaluation of sapodilla varieties.

Sample	Brix	pH	Acidity (%)	Sugars (mg)	
				Reduced	Total
Vasallo I	22.7	5.26	0.13	10.43	13.93
Vasallo II	25.3	5.23	0.11	11.05	12.50
Vasallo III	21.7	5.17	0.15	10.12	13.09
Guilbe	24.8	5.30	0.12	11.89	13.35
Gallera tenería	20.3	5.11	0.11	8.57	12.93
Mendigo I	19.9	5.16	0.12	10.21	13.32
Mendigo II	20.2	5.29	0.10	10.17	11.33
Mendigo III	20.1	4.93	0.16	10.97	12.46
Vasallo IV	22.5	5.20	0.10	9.68	12.75
Modelo	23.4	5.43	0.09	10.91	14.80
Mendigo Playa	25.4	5.51	0.12	9.95	13.33
Hanna	22.7	5.55	0.09	10.10	13.62
Gallera	23.1	5.50	0.13	7.14	10.36
Arcilago	23.9	5.30	0.12	10.95	14.01

<sup>3</sup>Tellenick, Gisela, 1985. Sensory evaluation of food. Theory and practice. Ellis Horwood Series. In: Food Science and Technology. Chichester, England.