

## Research Note

### PERFORMANCE OF PEANUT VARIETIES IN AN OXISOL IN NORTHWESTERN PUERTO RICO<sup>1,2</sup>

Peanuts (*Arachis hypogaea* L.) are a food crop with a growing potential for Puerto Rico and elsewhere in the tropics. In the past, peanuts were planted by sharecroppers in the sandy soils in northwestern Puerto Rico. Roberts<sup>3</sup> reported 135 acres planted to peanuts in 1935, mostly in Aguadilla loamy sand and Aguadilla sandy loam. The small Spanish variety was preferred. Currently, no peanuts are grown locally on a commercial basis; only some in home gardens. However, peanuts are a high protein, high energy food source and their production may be increased since local food crop shortages in the island are becoming more critical and efforts are under way to increase the level of local food production.

Several peanut varieties were introduced in 1976 as a corollary to a winter nursery of breeding lines planted in cooperation with North Carolina State University. A variety trial was conducted including the planting of a native, peanut variety of the runner type. The experiment was established December 1976 at the Isabela Substation in a Coto clay, an Oxisol. The experiment followed a randomized block design with 10 treatments and 4 replications. Plots consisted of 2 rows 3.3 m long with 0.9 m spacing between rows.

The varieties included were Florarunner, Spanhoma, Tam nut 74, Stan, N.C. 5, Florigiant, N.C. 2, N.C. 6, N.C. 17, and Nativa.

Lasso (Alachlor)<sup>4</sup> was sprayed as a preemergent herbicide at the rate of 9.4 l/ha at time of planting. Overhead irrigation was applied immediately after the herbicide application was completed. Subsequent irrigation was applied when necessary.

According to research elsewhere<sup>5, 6</sup>, the addition of fertilizers directly

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<sup>3</sup> Roberts, R. C., Soil Survey of Puerto Rico, USDA Bureau of Plant Industry, Series 1936 #8, 1942.

<sup>4</sup> Trade names in this publication are used only to provide specific information. Mention of a trade name does not constitute a warranty of equipment or materials by the Agricultural Experiment Station of the University of Puerto Rico, nor is this mention a statement of preference over other equipment or materials.

<sup>5</sup> Hartzog D. and Adams F., Fertilizers, gypsum and lime experiments with peanuts in Alabama (1967-72) Ala. Agr. Exp. Stn. Bull. 448, 1973.

<sup>6</sup> Robinson, D. L., Soil fertility studies with peanuts in Louisiana, Louisiana Agri. (Winter) 19(2): 4-5, 1976.

to peanuts seems uneconomical. Accordingly, no fertilizer was used in this experiment. The seed was not inoculated with nitrogen fixing bacteria. However, gypsum ( $\text{CaSO}_4$ ) was applied at the rate of 500 kg/ha as a dust over the plants at the blooming stage, approximately 9 weeks after planting. This practice insures good yields of high quality peanuts. The calcium necessary for normal growth of the peanut plant is absorbed by the roots but not translocated in the plant to the peg for pod formation. The forming pod must have available calcium in the surrounding soil to produce full nuts. After gypsum, dusting overhead irrigation was applied to make the calcium readily available to the plant.

No treatments were necessary for the control of insects or diseases. Only rust and leaf spot appeared late in the season, when the crop was already mature. The crop was harvested by hand in April 1976, i.e., 130 days after planting.

The results are summarized in the following tabulation:

<i>Variety</i>	<i>Mean yield kg/ha<sup>7</sup></i>
N.C. 5	1,9000a
Florigiant	1,4825ab
N.C. 6	1,2500bc
N.C. 2	1,0875bc
N.C. 17	0.0725bc
Nativa	0.9750bc
Florarunner-Tam nut 74	0.9100c
Spanhoma	0.9000c
Starr	8375c

The yield of variety N.C. 5 was significant at the 1% level above all other varieties except Florigiant. Varieties N.C. 5 and Florigiant proved superior also, as to pod size and quality of the nut, when compared to Nativa, which is commonly planted in Puerto Rico.

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<sup>7</sup> Means followed by one letter in common do not differ significantly at  $P = 0.05$ .