THE EFFECT OF CALCIUM ON YIELD AND QUALITY OF
LARGE-SEEDED TYPE PEANUTS

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ONE of the principal objectives in a research program concerned with the nutrition of peanuts is that of obtaining good kernel development, or, conversely, reducing the number of unfilled ovarian cavities ("pops"). Although the use of certain calcic materials has been known to be beneficial in the formation of well-developed kernels, their addition to soils of the peanut area of the southeastern states has not produced favorable results in many of the reported experiments. Furthermore, the effects reported from the use of limestone and gypsum as sources of calcium are quite different. Those working with the problem are continually confronted with certain inconsistencies in results that have been inadequately explained. These facts are well brought out by West's recent compilation of experimental results obtained in the southeastern states over a long period of years (5), together with the two recent summaries of data obtained in North Carolina (2, 3).

The purpose of the present study was to investigate certain factors which affect the response obtained from large-seeded varieties of peanuts to calcium additions. Varietal differences with respect to calcium nutrition are to be reported in a subsequent paper. Results are reported from field experiments in which particular attention was given to (a) comparisons of two different practices used to supply calcium, (b) the placement of gypsum, and (c) chemical characteristics of the soils on which the experiments were located. Improved technics described in detail below were used to evaluate the behavior of the peanut plant to calcium variables.

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2 Associate Agronomist and Assistant in Agronomy, respectively. For the statistical analyses the authors are indebted to the Department of Experimental Statistics.
3 A peanut fruit has one or more compartments, in each of which one kernel may form. An individual compartment is referred to as an ovarian cavity.
4 Figures in parenthesis refer to "Literature Cited", p. 428.