ABSTRACT

The response of soyabean (Glycine max(L.) Merrill), variety F62/3977, to nitrogen, phosphorus and potassium fertilizers (0, 84 and 168 kg./ha. for each element) on River Estate Loam and Cunupia Sandy Clay, and to residual fertilizers on River Estate Loam, was investigated in 3^3 confounded factorial experiments. Phosphorus increased seed oil content and yield, and seed yield on River Estate Loam, where luxury consumption of nitrogen occurred. On Cunupia Sandy Clay, nitrogen increased leaf nitrogen content, seed size and seed and protein yields. Leaf phosphorus and potassium contents were increased by addition of phosphorus and potassium fertilizers respectively to River Estate Loam only. On both soils seed oil content was decreased by nitrogen fertilization and seed protein content was affected by the interaction of P and K. Residual nutrients had no effect on seed oil content or yields of seed, oil or protein, but both nitrogen and potassium affected seed size, and nitrogen increased the seed protein content.

The growth analysis technique was utilized in a study of the effect of planting date (thirteen in all, starting October and ending September) on the growth, development and yield of ACADIAN and F62/3977 varieties of soyabean. Planting date affected the duration to full bloom, growing period, seed yield, pod number per plant, seed number per pod, seed size, the number of reject seeds, seed oil and protein contents and yields, plant height, total plant dry weight and the per plant dry weights of stem, axillary branch, leaf, and seed plus pod, leaf area index, net assimilation rate and crop growth rate.

Certain macroclimatic factors which varied with planting date were examined for possible associations with the variations observed. The varieties reacted differently to certain climatic factors, and F62/3977 appeared better adapted than ACADIAN under Trinidad conditions.

The practical implications of the important findings in both sets of trials conducted are documented and suggestions are proposed for future work.