INTRODUCTION

Beans (Phaseolus vulgaris Linn.) are an important crop from many vital considerations. They approach animal foods in nutritive value, containing a high percentage of protein. Their capacity to fix atmospheric nitrogen under certain conditions makes beans a valuable crop in rotation systems. Dwarf beans are an important economic crop in many parts of the tropics; in Trinidad, they are grown entirely by peasants either as a pure crop or as a catch crop (15), the best crops being produced in the dry season when the risks of diseases and faulty drainage are less.

In general, the bean crop requires about the same climatic and soil conditions as maize. It prefers a uniform growing season, characterized by cool nights, ample rainfall and a comparatively high humidity. Excessive and beating rains reduce the crop by aggravating diseases, by interference with pollination, and perhaps by knocking off some of the blossoms. The Agricultural Experiment Station of the University of Puerto Rico (1) has developed a number of definitely improved dwarf bean varieties highly resistant to local insects and diseases.

The crop is grown successfully on a great variety of soils providing there is good drainage. It thrives best on warm porous soils that are at the same time fertile, retentive of moisture and yet well drained, for example, sandy loams. Like most leguminous crops beans require a soil well supplied with lime. They do not do well on acid soils. Soils very rich in organic matter tend to produce a rank growth of vine and a late maturing crop.

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Two other cultural aspects of the bean crop, namely the effects of different interplant spacings and rates of fertiliser application on yield, are being investigated in the present experiment which in many respects is a continuation of the 1953/55 experiments. If beans are planted at too low a rate the crop cannot utilize the full productive capacity of the soil (enhanced by fertiliser); if more than the optimum rate of seeding is used, the yield is not significantly increased and the additional seed is wasted.