INTRODUCTION.

The tomato is one of the most popular as well as one of the most important vegetables in the tropics and temperate region. Rich in vitamin C and minerals especially phosphorus, potassium and calcium, and high in palatibility it is esteemed in various dishes. In the tropics its increased consumption will go a long way in decreasing the many deficiency diseases found there. For most countries it is an important commercial crop bringing in much needed revenue.

Though a native of tropical Central America, the tomato has reached its maximum production in temperate countries. In Britain the green house culture of the tomato now produces up to 60 tons per acre, the average yield being 35.0 tons per acre. This is about $2\frac{1}{2}$ times larger than the average yield of the outdoor crop produced in the U.S.A.

In the U.S.A. the tomato ranks among the vegetable crops second only to the potato in farm value, and heads the list in value among the perishable vegetables. The average annual production and farm value for the crop grown for the fresh market for the period 1948-52 were 33,322 million bushels and $133,893 million respectively. For the same period the production and value of the crop for processing were 3,144,700 tons and $88,398 million (Thompson and Kelly, 1957).

Fresh tomatoes in South Africa brought to the farmers during 1952-53 £1,310,000 on the nine principal markets of the Union.

In Cuba and some of the islands in the Caribbean, principally Jamaica and the Bahamas, tomatoes are grown mainly for export to the U.S.A. during the winter and early spring when field production is not possible in most parts of the latter country. Montserrat ships its produce to Eastern Caribbean countries like Trinidad and British Guiana. Since the last war the former trade in fresh fruit between Canada and the British West Indian islands, Jamaica, Antigua, St. Kitts, Montserrat, Bahamas and Bermudas has stopped owing to lack of regular shipping.

Other important tomato-growing countries are Mexico, Puerto Rico, the Canary Islands, and Hawaii.

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In the Canary Islands the crop is grown mostly under irrigation and exported to Europe, the United Kingdom taking the greatest amount. Hawaii tomato cultivation has recently come very much to the fore and much scientific research has gone into it. The Mexican crop is exported to the U.S.A.

In the tropics in general the tomato is grown mainly in the dry season, because high temperatures and continuous heavy rainfall during the wet season create conditions unsuitable for growth. Techniques of cultivation are backward and yields are low. Resistant varieties are not available and a large part of the crop is lost through diseases. Great improvement is therefore needed in the techniques of cultivation of this crop.

For the past five years or more, based on the findings at the John Lunes Horticultural Station that yields of tomatoes depend to some extent on methods of production of seedlings, experiments have been conducted at the I.C.T.A. into methods of raising seedlings with a view to improving on the existing local methods. Three methods have been compared: raising seedlings in 3" clay pots containing specially prepared composts; raising seedlings by the methods of the peasant farmers who sow nursery beds thickly with seed and do not thin out; and producing seedlings by the "improved" method at a spacing of 3" x 3" on open beds. The results have so far indicated that pot raised and "improved" seedlings are superior in yielding capacity than the "peasant" seedlings with the pot raised seedlings giving higher yields than the "improved" seedlings.

Cultivation methods have also been investigated. Plants grown on ridges, on the flat and on the flat with subsequent moulding up have been compared. In most of the experiments ridged and moulded plants have out-yielded those grown on the flat. But there are as yet no clear cut, confirmed differences between ridged and moulded plants.

The effect of Starter solution used in transplanting has also been probed into and found beneficial.

In the experiment reported in this paper the intention was to confirm the effects on yields of the three cultural methods - planting on the flat, moulding and ridging - and also of pruning and staking. It was decided ../

It was decided in raising the Seedlings and in transplanting to use methods which were within the means of the peasant farmer and were capable of giving high yields. The seedlings were therefore raised at a spacing of 3" x 3" straight on open beds instead of in pots or in seed boxes prior to transplanting to a field nursery, and a starter solution was used during transplanting.