

GENERAL INTRODUCTION

The tomato, Lycopersicum esculentum, is a very important crop in temperate regions and is now one of the most popular and useful vegetables grown in the tropics. It is a native of the dry west coast of South America and will not grow well under wet humid conditions where it becomes very susceptible to fungal attack. The tomato, however, must have a fair supply of water to produce fruit abundantly, and so grows best in a dry climate with adequate water. The crop is therefore grown during the dry season in Trinidad.

The standard of cultivation here leaves much room for improvement, as crop failures are quite common and yields average less than a pound of fruit per plant. Investigations into tomato production in Trinidad have been carried out by the following workers : Paul (1934), Barrett (1955), Topper (1942), Smith (1954) and Tremeer (1956).

Smith (1954) found that the type of seedling and the manner in which they were subsequently cultivated - grown on the ridge, flat or mould - had a significant effect upon yield. Tremeer (1956) used three types of seedlings; the peasant type which were plants reared on a seedbed out of doors, using a very heavy seed rate; the Pot seedling as produced in temperate countries, and the Improved type which were seedlings produced by sowing the seed in drills on a fertilized bed and subsequently singling the plants in the drill. He found that the yields of the Pot raised plants and the Improved seedbed raised plants were significantly greater than the peasant seedbed plants, but that there was no significant difference between the Pot and Improved type plants.

Tremeer also applied starter solution at the time of transplanting these seedlings into the field and found that although total yields were not increased, there was an indication that starter solution used at this time enhanced the rate of growth, hence the earliness of flowering of all types of plant.

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This paper describes an Observational Experiment on Seedling Production as well as the main experiment which is designed to combine the treatments of Smith and Tremear with the object of confirming their findings.

Local growers in Trinidad produce their tomato seedlings on a raised seed bed, but to three feet wide, out of doors. They apply a small quantity of manure to the bed and broadcast the seed at approximately 1/2 ounce per 10 sq. feet. The seedlings are then protected from sun and rain by palm leaves or grass which are placed over the bed and removed on germination. This heavy seed rate results in overcrowding of the young plants which consequently become stunted and develop poor root systems. Judged on temperate standards this is very poor potential material for a good crop.

This observational experiment was therefore laid out to see if more suitable seedlings could be produced by alterations in the seed bed and in the method of sowing. The important fact to bear in mind is that any new method must be relatively cheap.

The improvements to the seed bed were made by the addition of -

- (i) a thin layer of good humic washed soil.
- (ii) a layer of manure.
- (iii) artificial fertilizer.

Five methods of sowing were tried :-

- (1) The Present System.
- (ii) Sowing in drills 3" apart and singling out to 1" in the drill.
- (iii) Sowing in a box and transplanting into the bed 3" apart.
- (iv) Sowing in drills 6" apart and singling out to 1" in the drill.
- (v) Sowing in a box and transplanting into the bed 6" apart.

The layout of the beds and plots are shown in appendix I. Eight beds, 30 feet by 4 feet were required and the treatments were arranged so that each type of seedling was grown on :-

- (i) Soil only.
- (ii) Soil - Bamboo Soil.
- (iii) Soil - Bamboo Soil - Fertilizer.