The village accountant's pessimism will now have to be allowed for. For the main crops whose yields are calculated and entered in the season and crop report, figures of p are available from 1902—3 or some later year. If the accountant were not a pessimist, his p's for any crop would be a series whose average over a number of years would equal or approximate to 100, for an average crop is the best approximation to a normal crop.

It has been found that the actual averages of p's for various crops and districts are however always less than 100, and in fact range from *70* to *90*.

The method of interpreting the accountant's report is as follows:-

Let 80 be the average of *p*'s for paddy in a district. If 75 is the *p* for the year in question, the corrected percentage (condition factor) will be entered as

$$\frac{75 \times 100}{80} = 93{\cdot}75.$$

$\frac{100}{80}$ is called the correcting factor and this figure varies for each crop and each district.

SATHGUDI ORANGE CULTIVATION NEAR TIRUTTANI AND PUTTUR, CHITTOOR DISTRICT

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Introduction. *Sathgudi* is one of the best varieties of tight skinned oranges in South India. It must have been introduced in these parts from Sathgur—the original home in Gudiyatham taluk, North Arcot District. The area is about thousand acres in both the divisions and the extent is more in Puttur than in Tiruttani division.

The average area owned by an individual grower is about one acre. There is a great demand for this fruit and consequently the area is gradually increasing every year. Inadequate water-supply in the irrigation sources however seems to be the limiting factor in the extension of the area.

Details of cultivation. *Soil.* The best soil suited for raising this fruit tree is ' *Erragulaka* ' or (*Erraregada*), red soil up to a depth of three feet with well-drained sub-soil, not less than seven feet.

Seed and sowing. Generally healthy seeds are collected during November and December from well-developed and ripe fruits borne by old trees yielding profusely. The nursery bed is dug with *mamutties* three or four times and brought to a fine tilth. Usually red-soil is preferred for raising seedlings. Fresh seeds are dibbled in the nursery, two inches apart. On every alternate day the seed bed is watered. It takes about a month for the seeds to sprout.

One-year-old seedlings are taken out of the nursery and transplanted in a separate nursery one foot apart, the seedlings being then about a foot high. Before planting this second nursery the soil is dug a number of times and a heavy dose of sheep, goat or cattle manure is applied. Well-powdered *neem* cake is supplied to seedlings to prevent insect attack and to induce dark foliage.

Plantation. Two to four year old seedlings are planted during August—September or January—February in pits dug (six months previously) 15 to 21 feet apart soon after the cessation of the North-East or the South-West monsoon. Just before transplanting the side branches are pruned. Grafts are not generally planted because the belief is, that grafted trees do not yield for a long number of years.

Irrigation. Plants receive irrigation once in three or four days immediately after planting. When watering is done by pots, plants are watered once in two days. After the seedlings are well established they are irrigated twice a week. During the rainy season i.e. (September—December) irrigation is given only if the subsoil is dry. Generally, copious irrigations are given once in four days from February to August in gardens where the trees are bearing.

After Cultivation. Mamutti hoeing is resorted to once in four months round the plants up to a distance of three feet from the trunk when the plants are young. When the trees are bearing the whole garden is ploughed two to three months after the cessation of rains depending on the nature of the soil and young secondary roots are removed to encourage growth of buds. In some cases digging round trees to a width of a foot without injuring roots (except fibrous roots) and removing the soil to a depth of 6″ to 1′ is practised occasionally. Farmyard manure, sheep and goat manure or green leaf compost, tank silt or redsoil is applied round each tree after the resting period (i.e.) about January, the quantity varying according to the age of the plant. Sheep manure is generally preferred. Dead branches are pruned in December—January and the cut ends are tarred. Draining away excess water is also done in ill drained gardens during the monsoon.

Bearing period. The usual flowering season is January to March. Generally trees begin to bear on a commercial scale from the 10th year after planting i e. when the plants are over 10 years old and they continue to yield up to 40 years. Trees aged over 15 years yield fruit in abundance and continue to do so for a further period of 15 years, when the yield drops.

Yield. Each tree bears on an average 150 fruits. The fruiting season commences in July and lasts till December. In rare cases trees yield fruits from March to June.

Marketing. Fruits are usually exported to Madras packed in bamboo basket. They are sold at the rate of Rs. 3—0—0 per hundred

at the garden. Generally merchants buy from gardeners and export, but a few gardeners directly export the fruits to Madras and sell them wholesale or in retail.

Cost of Cultivation per acre.

	Rs.	A.	P.
Preparatory cultivation ; —			
Digging pits :-Three feet cube 18 ft apart 135 pits at 0-1-0 per pit.	8	7	0
Manuring and Manures :—			
Green leaf or cattle manure @ 0-3-0 per tree including application.	25	5	0
Seed and sowing :—			
Three year old seedlings @ the rate of Rs. 50 per 100 including labour for planting	68	8	0
After cultivation :—			
Digging round plants by mamutti up to a distance of 3' four times—10 men @ 0—4 -0 each	10	0	0
Trenching round each plant @ 0—0—3 per plant per year ...	2	1	0
Irrigation :—			
Irrigation once in 4 days from February to August (8 × 7 = 56) @ Rs. 1—8—0 per irrigation	84	0	0

Assuming the life of a garden to be 45 years.
Cost of cultivation per year.

Preparatory cultivation (proportionate cost)	0	3	0
Manures and manuring	25	5	0
Seed and sowing (proportionate cost)	1	8	0
After cultivation	12	1	0
Irrigation	84	0	0
Watchmen @ Rs. 3—0—0 per 4 months	12	0	0
Average assessment	10	0	0
Total ...	145	1	0
Yield :—			
150 fruits per tree on an average @ Rs. 3—0—0 per 100 for 135 trees.	607	8	0
Deduct cost of cultivation	145	1	0
Net profit per acre per annum	462	7	0
or Rs.	460	0	0

The writer acknowledges with thanks the suggestions given by Mr. M. Kanti Raj, Assistant Director of Agriculture, Vellore in preparing this article.

THE FIRST GENERATION OF AN INTERSPECIFIC CROSS IN SOLANUMS, BETWEEN *SOLANUM MELONGENA* AND *S. XANTHOCARPUM*

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Towards the creation of 'larger' variations interspecific hybridisation is often resorted to. The use of wild forms in breeding crop plants, particularly to obtain vigour and resistance to diseases, has come to be well recognised. The present note deals with such a cross in *Solanum* species.