

the produce may safely be valued at Rs. 3,000. Against this the cost of cultivation amounts to Rs. 550 as follows:—

	RS.	A.	P.	
Preparatory cultivation	400	0	0	} Charges for <i>m a m m o t y</i> hoeings have not been inclu- ded as the ryot personally at- tends to it.
Cost of planting material	50	0	0	
Lease amount for 10 years at Rs. 10-0-0 per annum	100	0	0	
	550	0	0	

Deducting the cost of cultivation from the gross value of the produce there will be a net income of Rs. 2,450-0-0 over one acre for a period of ten years or nearly Rs. 250-0-0 per annum per acre

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HINTS ON PINE-APPLE CULTIVATION

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The only place in the Northern Circars where pine-apples are grown on a fairly large scale is the Simhachalam hill, on the terraced slopes of which they are found to thrive without irrigation though the rainfall does not exceed 40" a year. Elsewhere, only a few plants are to be seen in citrus, mango, and other gardens. The general impression is that they thrive only on moisture-retaining hill slopes.

2. Pine-apples can, however, be successfully grown on ordinary cultivated lands also. The writer got them planted on about 80 cents of his land at Kondevaram in 1928 under what may be termed the 'raised bed' system. The attempt has been quite successful and last season, other ryots in the village copied the system on about four acres of theirs.

3. From the experience so far gained, the following hints may be given for the use of intending growers:—

1. Select a well-drained rich plot for planting.
2. Plough the land well, apply from 30 to 50 cartloads of *Penta* or village heap manure and work it in.
4. Procure suckers from Simhachalam, where they are available in August or September soon after the harvest of previous season's crop. They can be had at about Rs. 10 to 12 per 1,000 delivered at the Railway Station.
5. As far as possible, procure shoots which come up from the axils of the leaves on the stems from which fruit has been harvested. These bear fruit earlier than any other planting material, about 50 per cent bearing in the following season and the rest in the next. These shoots however are difficult to procure at Simhachalam as they are rarely parted with. The next best kind of planting material which is largely available is the suckers which arise from the ground, some of these being usually removed

at the annual weeding and hoeing. These have narrower and longer leaves than the shoots in the axil of leaves, and bear somewhat later, about 30 per cent in the second season after planting, and the rest in the third season. Crowns and slips from above and below the fruit may also be planted but they bear in the latest *i.e.*, only the fourth season. These however may be put down in a nursery for two years and then planted out.

6. Plant the suckers singly in two lines, four feet apart on each bed, and $1\frac{1}{2}$ to 2 feet apart in the lines.

7. Plant *Bonitha* plantains on alternate beds quinquennially, 16 ft. apart, so that some income will be derived from these before the pine-apples give a reasonable yield. The partial shade thus provided is also beneficial to the pine-apples. If it is intended to raise a mango or *sapota* garden on the plot, these grafts may also be planted 36 ft. apart, so that, by the time the pine-apple is exhausted and removed they begin to give a decent income.

8. Water the suckers once by hand at the time of planting and once or twice more at intervals of a week if there be no rain. No irrigation will be required till the next summer. After the fruit sets, irrigate once in three or four weeks by filling in the trenches and allowing the beds to absorb moisture. Four or five irrigations may be necessary. To prevent undue evaporation, the trenches may, in summer, be kept filled with plantain trash or other material.

9. Weed the plot as often as necessary to keep it clean. Hoe with *mammoties* once every year after the harvest of the fruit, and again after the rains. In alternate years fresh trenches may be opened along the centre line of the beds and the old trenches covered, filling them with plantain trash or other organic material.

10. Manure the plants individually every year after the first hoeing and work it in around the plant. Ordinary *penta* may be used, at about 30 to 50 carts per acre. The addition of oilcakes or sulphate of ammonia may also be advantageous. Two to three ounces of groundnut cake or half to one ounce of the sulphate, is an economic dose.

11. From each plant leave one sucker (coming up from the ground) to grow every year. Leave shoots growing from the axils of the lower leaves on the stems from which fruit has been harvested, to yield fruit in the season following and thereafter cut away that stem to the ground. By this time the first sucker left to grow will take its place. When plantation comes to full bearing one fruit from the sucker coming up from the ground and at least one from a shoot from the leaf-axil, are expected to be obtained every year from all vigorous stools.

12. During the hot summer the fruit requires protection from the direct sun. This may be given by wrapping up each fruit with some plantain trash. Care should also be taken to prevent the fruit from lodging on the grounds and causes rotting at the place of contact.

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