

Artificial ripening of honey is an absolute necessity, as it is the only method to prevent fermentation and subsequent deterioration of the material.

Equal attention should be paid to the proper preservation of honey.

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### **The Cultivation and Marketing of Roses at Iquaripalayam village.**

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**Introduction.** It is a known fact that there is a continuous and growing demand in all urban areas for roses among other flowers, throughout the Presidency. Many villages near such areas grow this crop on a field scale and Iquaripalayam is one such village. Roses fetch to its producers, the ready money to meet their house-hold and other day-to-day expenses. This village consists of nearly 100 homes and is situated about six miles, from Gummidipundi R. S. on the Madras—Culcutta line and is about 36 miles, from Madras by road. The total area of the village is about 1,000 acres, of which only 500 acres, are cultivable. The village has a tank with a very good water supply lasting for 6 to 9 months in a year, from August till April following. The ryots who cultivate roses belong chiefly to the Kshatriya caste, though a few Vysias and Adi-Dravidas also grow them.

**The Land.** There are nearly 40 acres now under roses in this village: It is cultivated in both wet and garden lands but more in the wet lands. The soil is light red, sandy loam to clay loam and homogeneous to a depth of 8 to 10 feet. It is surprising to see a rose garden coming up well between plots of wet paddy, with stagnant water all round. Even though the fields round about are wet, the plots where roses are grown, are not at all miry. I was told that even in rainy season water does not stagnate in these plots and that it could be easily drained if necessary, within a few hours. The water table is nearly 4 feet from the ground level during the wet months and 10 to 12 feet in summer. Even so, the plants in garden lands produce more flowers than in wet lands during the rainy months as the wet plots do not dry up soon; and again the plants in loamy soils produce more flowers than plants in light sandy or clay loams. But much depends upon the care that is bestowed on the plants.

**Season.** The usual season when roses are planted in this village is between September and January, but plantings in September and December,

when rainfall is not heavy, come up better than October and November plantings.

**Preparation of Land.** Ryots begin preparatory cultivation by about the beginning of August with the help of the early showers, and usually four ploughings are given with a country plough. Lines are marked with the help of ropes at intervals of  $4\frac{1}{2}$  feet each way.

**Seeds and Planting.** Well rooted layers about 2,000 for an acre, are planted at the junctions of these lines. A few extra cuttings are planted in a nursery to replace the failures. About 5 per cent. of the plants might fail to establish if the planting is done in September or December, while in the other two months, the casualties are much more. The plants are pot-watered as soon as they are planted. Thereafter, they are irrigated once in three days till they establish, i. e., for about a fortnight. Subsequent irrigations are given once a week if no rain is received. About 60 days after planting, the well-established plants begin to flower, and it is not unusual that from 100 to 200 flowers are got from a plot of one acre in the first picking. From this time onwards, a few hundreds of flowers are got almost every day depending upon the amount of care put in.

**Manures and Manuring.** The first manuring is done about a month after planting and for this, about 2 cartloads of farm-yard manure are considered sufficient. After this, 10 cartloads of farm yard manure are applied once in every six months. Each plant receives nearly 5 lb. of manure at the base of the plants close and round it. The manure is not applied to the entire field. After the first year, the plants receive two manurings, once in August and again in November at 10 cartloads of farm yard manure per acre.

**After cultivation.** This is very important in the cultivation of roses. Almost once in 40 days the fields receive a good hoeing with mammaties and weeds are removed. No labour-saving implement is used for the purpose owing to the thorny nature of the plants. About 10 to 12 men working for a day, easily cover an acre, hoeing with mammaties. About 7 to 8 hoeings in a year on an average per acre are not unusual. Soon after manuring in November, a good weeding is done and the matured branches are layered. After the layering, new shoots sprout up from the bent branches, which take nearly 40 days to come to flower. This is done in the middle of November so as to get the new shoots into full bearing by the end of December when the price of flowers at Madras city is high.

**Irrigation.** The plants receive nearly 4 to 5 irrigations per month in the hot months and less during the rainy months so that about 35 to 40 irrigations are given per year. The tank which supplies water for nearly nine months in the year is very handy to the ryots and no difficulty is felt by any to let in the tank water. Water is freely used and fields are often flooded. Those who have wells, irrigate their rose garden during May, June and July when the tank is empty, but others leave the plants to nature.

The crop so left does not die as it is sustained by the light showers received during these months. In fields left dry during the summer months, layers made previously fail to come up successfully and naturally the owners lose some part of their income from the extra flush resulting from new shoots and the sale of rooted cuttings.

**Yields.** As already said, planting is usually done in September. The plants strike roots and come to flowers in about 60 days and yield as much as 100 to 200 flowers per acre daily. There is a gradual increase in the number of flowers as the plants begin to grow and put on new shoots. During the first year from January to December, as much as 80,000 flowers are obtained from an acre and in the second, third and subsequent years, the yield increases to about 3 to 5 times that of the first year. By the 7th or the 8th year the plants would have become too stumpy and old and the yield of flowers goes down.

**TABLE I.** Statement showing the number of flowers obtained and amount realised by a ryot from a plot of 75 cents during the first year from January to December.

Month	No. of flowers 0.75 ac.	Calculated to an acre.	Amount realised by sale (0.75 ac.)			Calculated amount for an acre.		
			Rs.	a.	p.	Rs.	a.	p.
January	650	867	1	3	7	1	10	1
February	1,845	2,460	0	13	10	1	2	5
March	6,095	8,127	4	2	10	5	9	1
April	11,630	15,507	12	3	4	16	4	5
May	4,225	5,633	5	0	3	6	11	0
June	—	—	—	—	—	—	—	—
July	1,285	1,713	1	6	2	1	13	7
August	11,015	14,687	7	10	7	10	3	5
September	4,340	5,787	9	4	1	12	5	5
October	5,255	7,007	5	6	5	7	3	3
November	3,630	4,840	3	9	1	4	12	1
December	9,250	12,333	10	2	10	13	9	1
Total	59,220	78,960	60	15	0	81	3	10

The amount shown as realised by the ryot is after deducting all expenses in marketing, i. e., the actual amount received by him at the end of every month. The above statement shows in round figures that about 80,000 flowers worth about Rs. 80 per acre would be the average production and income in the first year of the rose cultivation. From the cost of cultivation of which details are appended it is clear that the ryots do not gain anything in the first year as the income is less than the expenses. It is only from the second year when the plants begin to yield more flowers and the cultivation expenses are low that the ryot gets more profit which ranges from Rs. 150 to Rs. 200 per acre. Actual study of production made in a separate garden is given in Table II.

**Marketing.** This is the most important item in the cultivation of roses. Quick despatch, ready market and co-operation among the growers in marketing are very essential as the flowers cannot last longer than 12 hours after harvest. A ready market is found in Madras city which is only

36 miles from this village. Flowers like this could be cultivated only in villages which are within quick reach of big city markets and where the flowers could be sold without difficulty. Otherwise there is every likelihood of the ryots losing a great amount unless other means of disposal like manufacture of *Gulkandu*, rose water etc. are found. The following details will be of some help to persons who intend growing roses near big cities.

At Iquaripalayam there are as many as 106 cultivators who grow roses on nearly 40 acres. They have formed themselves into 10 groups, each with a chief of its own, and with membership consisting of 20, 25, 17, 19, 10, 2, 4, 3, 1 and 5 ryots respectively.

Picking commences by 4 a. m. in good flowering season and by 5 a. m. in other seasons and the flowers are delivered to the chiefs before 6 a. m. each day. The flowers supplied by each ryot are counted by the chief rejecting a few insect-attacked or otherwise damaged ones and the total number accepted is noted by him in his accounts and also in the daily supply book of the ryot.

A man is engaged to carry the flowers to Gummidipundi R. S. on a monthly wage of Rs. 4. He is expected to carry 10,000 flowers in light baskets made of coconut leaves. Anything over this number is packed separately and sent through a casual labourer. Similarly, all the chiefs arrange for the despatch of their flowers from the village by 6 a. m. to the railway station where they are received by 7-30 a. m.

Two men are collectively engaged by the 18 chiefs to take the flowers to Madras city for sale. These two persons are provided with season tickets to Madras and they are paid Rs. 4 per month. These men receive the baskets delivered by the chiefs at the railway station and they are counted and weighed and a receipt is taken from the railway authorities for transit to Basin Bridge Junction where the baskets are unloaded and taken to Flower Bazaar. Extra labour is engaged when the total number of flowers exceeds 20,000 on any day. These two persons have each a standing permanent advance of Rs. 2 with them. Railway freight, cooly charges, etc. paid by them on any day is met from this money and recouped from the middlemen merchants at Madras city.

There are four middlemen in Madras city who arrange for the sale of flowers received from Iquaripalayam village. All the flowers received from the village are not given to one middleman. The baskets from the various chiefs are handed over to their respective middlemen who arrange for the disposal of the flowers at the prevailing market price. A certain portion of the flowers is rejected by them as by the time they receive the baskets, i. e. 10 a. m., some flowers would have withered, got damaged or shed their petals. On an average about 10 per cent of the flowers received get rejected in this manner. These middlemen hand over a chit each day showing the details of flowers received, quantity rejected, quantity sold, price at which the flowers were sold, the amount due to the chief from them and also the empty baskets of the previous day. The two men return to the

village by 4 p. m. and hand over the chits of the middlemen to the respective chiefs, who make entries in their books. A specimen copy of the chit is given below:—

		Dated 8-3-38.
		Name: Muthunagaraja.
		Flowers received: 2805
		Details of sale:—
Duplicate copy of chit retained with middlemen.	400 @ Rs. 0-2-0	... Rs. 0-8-0
	1900 @ .. 0-1-6	... .. 1-12-6
	505 Rejected	<u>2-4-6</u>
		2805
		Cooly charges, railway freight paid ...
		Amount due ... .. Rs. 2-4-6

The total amount due to the chiefs, is paid before the 10th of every month deducting a commission of Rs. 0-1-6 in every rupee. The common expenses of the 10 chiefs, viz., the value of two season tickets, railway freight paid and cooly charges from Basin Bridge to Flower Bazaar, are proportionately divided according to income derived for the month on the sale of flowers.

The chief is paid a small remuneration of Rs. 4 a month for maintaining accounts and organising the sales. He has to work out at the end of the month the total quantity of flowers despatched, the percentage of reduction, the rate per 100 flowers for the month after deducting all expenses and also calculate the amount due to every ryot supplying flowers to him. Sometimes advances of Rs. 100 or more are got from middlemen for household or other expenses without interest. This guarantees the middlemen a continuous supply of flowers for sale through him till the advances are recouped.

**Prices.** The daily market rate varies according to supply and demand. The prices, for example, in December and January, are much higher than those during other months; on the New Year's Day especially flowers are sold at even Re. 1 to Rs. 1-8-0 per 100.

The statement below shows the average monthly price of 100 flowers from January 1932 to December 1937.

Month.	1932	1933	1934	1935	1936	1937
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
January	0 4 0	0 3 6	0 2 8	0 3 3	0 2 6	0 3 3
February	0 4 0	0 3 9	0 3 0	0 1 1	0 1 8	0 0 10
March	0 4 6	0 3 0	0 1 9	0 1 11	0 1 9	0 1 2
April	0 4 0	0 2 0	0 1 8	0 1 3	0 1 2	0 1 9
May	0 2 6	0 2 0	0 2 1	0 2 2	0 1 11	0 2 0
June	0 3 6	0 3 0	0 3 0	- - -	0 2 3	0 3 8
July	0 3 6	0 2 6	0 1 11	0 2 3	0 1 8	0 1 10
August	0 5 0	0 2 3	0 2 6	0 3 9	0 2 7	0 1 2
September	0 4 3	0 3 0	0 3 0	0 1 2	0 3 4	0 3 9
October	0 6 6	0 3 0	0 5 0	0 3 1	0 2 6	0 1 9
November	0 3 6	0 2 6	0 2 5	0 3 0	0 2 2	0 1 9
December	0 7 5	0 3 2	0 2 3	0 2 0	0 1 8	0 2 0
Average	0 4 5	0 2 10	0 2 8	0 2 4	0 2 1	0 2 1

TABLE II. Statement showing the number of flowers obtained and the net income of Mr. Lakshmana Raja from 1½ acres of roses for six years.

Month	1932		1933		1934		1935		1936		1937	
	No. of flowers.	Net income.	No. of flowers.	Net income.	No. of flowers.	Net income.	No. of flowers.	Net income.	No. of flowers.	Net income.	No. of flowers.	Net income.
January	1600	4 0 3	13600	24 11 0	30670	42 15 0	12245	21 10 2	10690	13 5 9	9570	17 14 2
February	2850	7 2 0	6367	15 8 5	26650	41 7 8	68445	40 12 6	11055	9 10 9	75560	35 6 8
March	4974	12 3 6	20280	33 13 6	55090	53 0 4	30720	33 7 9	18616	17 8 10	26445	18 2 0
April	9150	18 8 3	20565	22 8 0	37115	36 5 6	57560	41 13 2	20365	13 15 4	31885	33 7 8
May	4400	5 8 0	16975	16 12 0	16910	20 7 7	24985	31 2 0	15695	17 13 9	25760	30 9 6
June	1092	2 6 0	2665	4 4 3	1610	3 0 10	—	—	4780	6 1 10	3765	7 5 4
July	671	1 4 8	800	1 4 0	14885	16 6 6	13835	18 7 9	11435	9 9 9	4500	4 13 6
August	3405	10 7 6	23220	27 0 10	11930	17 6 0	5155	10 15 11	11745	17 7 1	50955	35 4 9
September	3195	8 7 9	19145	30 8 3	18280	31 8 0	70490	47 4 7	3070	5 14 2	5385	11 7 9
October	568	2 4 10	4795	7 10 3	5850	16 1 5	19920	34 8 8	16035	23 8 10	8725	8 15 6
November	5213	11 6 5	9840	13 1 0	27715	38 8 3	2565	4 5 3	25680	31 15 10	34180	33 10 3
December	2837	11 9 1	31530	50 11 4	33090	40 15 2	34200	38 14 5	18740	18 2 6	16970	18 10 8
Total for 1½ Ac.	39955	95 4 3	169782	247 12 9	279795	358 2 3	340120	323 6 2	167906	185 2 5	293700	255 11 6
No. of flowers and income per acre by sale of flowers.	26627	63 8 2	113188	165 3 2	186517	238 12 2	226746	215 9 5	111967	123 6 11	195800	170 7 10
Approximate amt. by sale of layers per acre.	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0	25 0 0
Total income per acre	88 8 2	190 3 2	263 12 2	263 12 2	240 9 5	248 6 11	195 7 10	50 0 0	50 0 0	50 0 0	50 0 0	50 0 0
Cost of cultivation per acre*	-1 7 10	140 3 2	213 12 2	190 9 5	198 6 11	145 7 10	145 7 10	145 7 10	145 7 10	145 7 10	145 7 10	145 7 10

\* Kist excluded. Maximum return is obtained in the third year of planting.

From the above table it could be seen that the prices at Madras city have been going down every year and that the price during 1937 is not even half of what it was in 1932.

**Cost of cultivation of one acre of Roses.**

	Rs. a. p.
<i>First Year:—Preparatory Cultivation:—</i>	
4 ploughings with country ploughs @ 8 annas per plough and man ..... 8 pairs of animals and 8 men.	4 0 0
<i>Seeds and Plants:—</i>	
Cost of 2000 well-layered plants @ Rs. 2 per 100.	10 0 0
Marking out, digging with mammatties and planting the layers at 4½ feet apart each way and pot-watering ..... 10 men @ 4 annas	2 8 0
<i>Manures and Manuring:—</i>	
First manuring at 2 cart-loads and second with 10 cart-loads of farm yard manure after six months, i. e., 12 c. l. at 8 annas.	6 0 0
Carting manure to the field—2 men and 2 pairs of animals.	1 0 0
Digging around plants, applying manure and covering up. 16 men @ 4 annas (6 for the first, and 10 for the second).	4 0 0
<i>After Cultivation:—</i>	
Seven hoeings with mammatties at 12 men per acre each time.	21 0 0
<i>Irrigation:—</i>	
Irrigating with tank water 40 times in the year—10 men at 4 annas.	2 8 0
<i>Harvesting:—</i>	
Picking of flowers (done by the owner himself).	3 0 0
<i>Miscellaneous:—</i>	
Kist on land.	6 0 0
	90 0 0
<b>Second and subsequent years—Charges for each year.</b>	
Seven hoeings—12 men each time.	21 0 0
Manuring twice with 10 c. l. of F. Y. M. each time at 8 annas per c. l.	10 0 0
Carting manure and distributing—2 pairs and 4 men.	1 8 0
Digging round the plants, manuring and covering—24 men.	6 0 0
Layering the plants—8 men.	2 0 0
Irrigating with tank water—10 men at 4 annas.	2 8 0
Kist on land.	6 0 0
Picking of flowers.	3 0 0
<b>Total.</b>	52 0 0

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