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Grape-vine Cultivation in Madura District.

C. RANGASAMI AYYANGAR,

Previous history. The grape-vine was first introduced some thirty years ago by a French Jesuit clergyman in villages near Kodaikanal Road and Dindigal in Madura District. At first this crop occupied only a very small area, but gradually the Christian ryots realised the value of this crop and extended its cultivation to lands which before the introduction of this crop were utilised for growing paddy, cholam and cumbu.

Soil. This crop flourishes on protected hill slopes, on red loams with an admixture of sand and gravel favouring free drainage.

Preparatory cultivation. The land is ploughed twice and the weeds are removed, after which the land is levelled. Pits 3' x 3' x 3' are dug, 12' apart in rows 15' distant. Channels are dug at regular intervals.

Planting. The vines are planted in two different ways:—

(1) Small bits of the vine 1' to 1½' long with two to three healthy buds in each are cut, and planted in small pots or in a loose bed of soil specially prepared for the purpose. Generally 240 to 250 vine cuttings are planted per acre. The cuttings are allowed to remain in the pots or beds for two months. Within this period the pits dug in the field are $\frac{3}{4}$ ths filled with leaves which are allowed to decompose well. After two months the cuttings which are growing in the pots or beds are transplanted into pits. A small thin stake is also planted in each pit to serve as a prop. The pits are then watered, as necessity arises.

(2) Planting is done in another way too. Bamboo baskets or earthen vessels filled with good soil are placed under the vines from which the cuttings are to be taken. A portion of a branch of a healthy vine having three or four buds is layered in each such basket or earthen vessel, which is occasionally watered thereafter. When the pits are ready for planting the vine is cut very near the soil in the basket and the branch severed from the mother plant. The remaining portion which is buried in the soil is then transplanted with the soil into the square pits and treated as in the former case.

Eight months after planting, pandals 6'x6' are put up. For this purpose live Mullu kiluvai or Mullu murungai (*Erythrina indica*, L.) branches are used. Every year before pruning, the old and the un-serviceable posts are replaced by new ones.

Manuring. During the first year no manure is applied except leaf mould which is supplied to the pits before planting.

2. In the second year and the years succeeding cattle manure is applied at the rate of 70 cart-loads per acre once a year.

3. Every year fish manure is applied at the rate of 6 bags per acre just a few days before the vines are pruned.

After cultivation. This crop requires copious irrigation. 5 irrigations per week in summer and two irrigations per week in winter are the rule. Care should be taken to keep the soil always free from

weeds and for this purpose the land is weeded once a month. It is always necessary that there should be proper drainage of the land and to secure this, careful and close personal supervision is quite essential.

Harvesting. There are two seasons for this crop.

Summer. The vines are pruned at the end of December and the crop harvested in April. Then the vines are allowed to rest for two months.

Winter. For winter cropping the vines are pruned at the end of June or the middle of July and the crop harvested in October or early in November. In the majority of cases the produce is given on contract and the owner rarely takes the trouble to dispose of it himself.

Cultivation charges.

First year—Preparatory cultivation.

Ploughing, levelling and digging of pits	Rs.	80	0	0
Pandals	"	280	0	0
Manuring (leaf-mould)	"	130	0	0

After-cultivation.

Manuring 70 cart-loads per acre cattle manure	"	70	0	0
Weeding	"	30	0	0
Irrigation	"	270	0	0

Total	"	860	0	0
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2nd year.

Renewing old and unserviceable posts	"	90	0	0
Manuring, weeding and irrigation	"	370	0	0
Pruning	"	40	0	0
Spraying (4 times)	"	100	0	0
Harvesting and carrying charges	"	130	0	0
	"	730	0	0

Average yield per vine 2 maunds @ Rs. 4

per maund	"	8	0	0
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Average yield per acre of 500 maunds	"	2000	0	0
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Expenses for 1st and 2nd year	"	1590	0	0
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Gain per acre	"	410	0	0
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3rd year.

Renewal of old sticks, pruning, manuring, weeding, irrigation, spraying, harvesting and carrying charges	Rs.	730	0	0
Cost of produce per acre	"	2,000	0	0
Total expense do	"	730	0	0
Gain per acre	"	1,270	0	0
No. of vines per acre	250			
No. of bunches per vine	80			
do. acre	20,000			
do. viss (if small)	4			
do. " (if big)	3			

The yield of the vines increases proportionately with age.

Disease. For the first 5 or 6 years after the introduction of this crop, it was free from disease. Gradually "Mildew" began to appear and to spread from one garden to another. Owing to its attack there was a slow and steady decrease in the produce. In 1920, one of the ryots from Michaelpatti, came all the way to Coimbatore with a basket-ful of diseased bunches and requested the Mycologist to help him in checking this disease.

Accordingly spraying was taken up in the above village and after two years of free demonstration, the ryots of the above village understood the good effects of spraying and now almost all the vine growers in Madura District regularly spray their gardens to check the appearance of this disease.

Of late in some of the villages the ryots prune their vines at all times of the year. This kind of pruning not only affects the quality of the grapes, but also weakens the vines, resulting in the end in a complete failure of the crop itself.

It is quite necessary that vine growers should always bear in mind the above facts and prune their vines twice a year i. e., in the right season viz. December and June.

By doing so they can be sure of getting not only a better yield but also a better quality of grapes and at the same time ensure longer life to their vines.