RP-207

"Reprinted from May 1956 issue of 'Indian Farming'"

This ancient spice can be cultivated with profit in many of our areas. The demand for vanilla is good

Heard Of Vanilla?

By

P. Abraham

Officer on Special Duty (Spices), Ernakulam

VANILLA, well known for the popular essence (spice) that it produces, is showing possibilities of being grown on a more extensive scale in this country.

Vanilla has been tried by a few planters in the hill districts of Madras, Mysore and Coorg, and also at the Fruits and Spices Research Stations in Burliar and Kallar in Nilgiri district of Madras State. The plant has been flowering and fruiting successfully in the places where it was tried.

Vanilla is a climbing orchid. There are several species of this orchid, but two of them, the *True Mexican Vanilla* with long, slender pods and the *West Indian Vanilla* with short, thick pods, are the most cultivated ones.

Vanilla is an ancient spice. Its cultivation is found largely in Mexico, Tahiti, Fiji, Java, Zanzibar, Madagascar, Como Islands, Reunion, Mauritius, Seychelles and Puerto Rico. Though the plant was introduced into India and Ceylon at the beginning of the nineteenth century, very little attention has been paid to it so far.

Vanilla perfume has a great demand in Europe as well as other countries of the world, and fetches a high price. It is used for flavouring ice-cream, cakes, pastries and other sweetmeats and drinks.

The plant requires a light and friable soil, rich in humus. It does not thrive on heavy clayey soils which are ill drained. It is fond of plenty of humus and requires a light shade.

The crop requires a tropical climate, warm and moist with a temperature between 70° and 90° F, with a well distributed annual rainfall of about 100 inches. Even if the rainfall is as low as 60 inches, the crop can be grown if the rain is distributed suitably and is frequent enough to keep the soil moist throughout the year.

A virgin forest-covered hillslope is suitable for the plant. The forest has to be suitably thinned out to allow it sufficient light during the flowering season. Old orchards or land planted with other crops can also be used for vanilla.

Vanilla requires as upport for climbing. Existing trees, if properly topped and pruned, can be used for this purpose. Posts and trellises or trees specially planted for the purpose, can be used fo supplementing them. The ideal support tree is a fairly fast grower,

strong enough to support the weight of the plant and not giving too thick a shade or interfering with the growth of the vine. Many suitable trees are available to planters for use as supports. Of these, *Jatropha curcas*, *Plumeria* and the Erithrinas are the most suitable. Vanilla requires good shade also.

When preparing land for growing the crop, felling and burning land is not desirable. The undergrowth may be cleared by cutting down all scrub jungle and superfluous trees which may be chopped and allowed to decay on the land. If the land is open and exposed, such temporary crop plants as the banana may be planted till the trees grown for support are tall enough to give the required support and shade. Vanilla in the early stages requires partial shade and needs protection from strong winds.

HOW THEY GROW VANILLA

Vanilla can be raised from seed as well as cuttings. It is best to take cuttings four to five feet long and plant them at the base of the support on which the vines are to climb. At least a third of the cutting must be buried horizontally to a depth of about two inches. It is better to spread some leaf mould over the lower part of the cutting during planting. About 2,300 to 5,000 cuttings are required for an acre. The cuttings should be planted six to nine feet apart.

Short cuttings, about a foot in length, may also be planted, but unlike the plants raised from long cuttings which begin flowering in the first year, these will begin bearing only in the third or fourth year.

The cuttings may also be rooted in a nursery and planted out when they begin to grow. The nursery beds should be made of good and rich leaf mould, and should be shaded. They should be watered during the dry weather. The best time for making the cuttings is the monsoon months.

Growing vanilla from seed is a slow process, but if done occasionally, maintains the vigour and disease-resistance of the vine.

PRUNING

Vanilla requires pruning. After it has flowered, the old stem is cut. When the pods are ripe, the whole of the branch carrying them is cut and only the new shoots of the previous year are retained. As soon as the flower buds appear on the new shoots, their tips are removed and the tipping is continued as long as the plant produces sufficient pods.

The pruning of young shoots is also found suitable when the grower wants quick returns from the plantation and does not want to prolong its productive period for more than two or three years. Though an excessive crop of fruit may be obtained this way, it will be at the expense of the plant.

Pruning keeps the plant thin and light, thus avoiding the risk of accidents from high winds and hurricanes.

The plantation should be free of weeds. If the weather is dry, the ground around the vanilla plants must be mulched with leaves or dry grass and frequently watered.

When the plants have reached the top of the support, which should be about four feet high, they should be made to trail horizontally by keeping posts or bamboos or other light poles on them. Snails, if seen, should be regularly collected to prevent their damaging the young leaves.

MANURING AND AFTER-CARE

Where the soil is rich in humus and is of sufficient depth, no manure need be added. When the plants are well established, spreading some burnt earth, ashes and leaf mould around them will speed up their growth. If the soil is lacking in lime, a small quantity of lime may be added to the burnt earth or leaf mould. Farmyard manure can also be applied if it is well rotted. Watering the plants with 10 per cent solution of nitrate of soda once a week will also be helpful to the plants. Vanilla need not be manured more than twice a year.

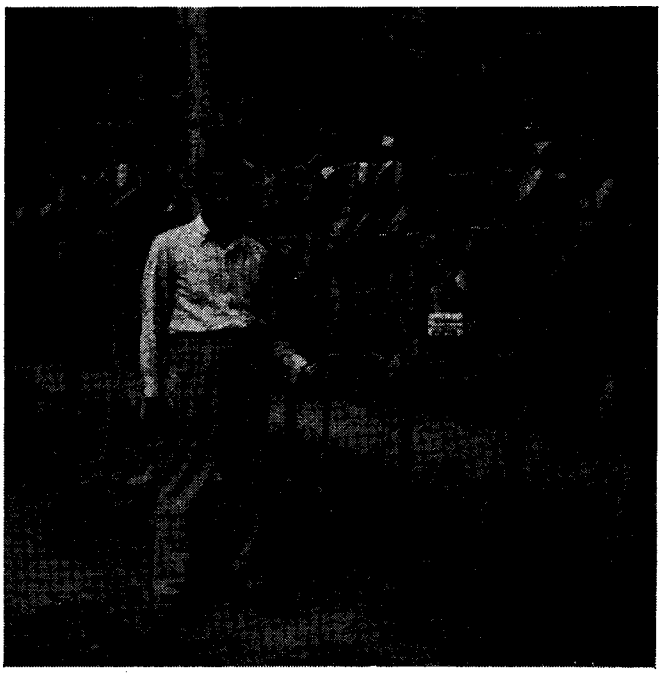
The plant flowers in the second year when a small crop may be obtained. The yield increases year after year.

Vanilla will rarely set fruit unless it is artificially pollinated. The number of flowers to be pollinated on each flower-cluster depends on the age and vigour of the plant. To get fine long pods, about 10 flowers may be kept on each cluster and if the plants are weak, a fewer number. All flowers should not be pollinated.

POLLINATION

The method of pollination is simple. A pin, needle or a small pointed piece of wood of the size of a match stick is required to apply the pollen on to the stigma of the flower. The pollen of the vanilla flower is covered by a sort of hood or 'anther cap.' The stigma is also covered by a lip known as 'rostellum' or 'lamellum'.

Vanilla vines trained on trellis showing bunches of fruits



These two prevent self-fertilization. To pollinate the flower, press the lamellum upwards under the anther cap and bring the pollen in contact with the stigma. The operation is much simpler than what it looks. Pollination should be done in the mornings.

The flowering and fruiting seasons of vanilla and the maturity of the pods vary from place to place. The plant gives only one crop in a year. The pods must be picked as soon as the tips become yellow. If this is not done they are likely to split open and produce an inferior quality vanilla. While picking, the pods should not be bruised or injured. Pods may be collected every second or third day.

Normally, a vine may produce a pound of green beans which when cured make about three ounces of vanilla. Older vines under ideal conditions can bear more than 30 pounds of green pods.

CURING

Curing requires great care as the value of the product depends on how much care is given to the curing.

A ripe pod does not give the vanilla odour. This odour is developed during the process of fermentation when the fruit is drying.

Vanilla is cured by the aid of hot water, sun heat or stove heat.

For artificial curing of vanilla, many methods are followed. The latest method, however, is to place the pods after collection in cane or bamboo baskets and plunge the same for about 30 seconds in near-boiling water at about 190°F (80°C). Sometimes, this dipping has to be repeated for a few more seconds. The pods are then spread out for about a quarter of an hour on mats or trays to drain. They are then exposed to the sun for two or three hours on woollen blankets on tables and thereafter rolled in the blankets and kept in boxes until the afternoon of the following day. This operation is renewed during the next three to six days, depending on the weather. Overexposure has to be avoided as this will make the pods too dry and brittle.

When the pods get a fine chocolate brown colour and are flexible and wrinkled, they are sometimes lightly rubbed with olive oil. The pods are now transferred to a well ventilated drying room or shed and spread on cane trays for the next 30 days. During the drying process they are frequently turned over and lightly flattened with the fingers. When well dried, they are sorted, graded, tied in bundles of 25 or 50 and placed in well covered air-tight boxes.

The cured pods are graded according to size and bundled in 25s or 50s in cellophane.

Vanilla-growing has had some success in places like the Nilgiris, Wyanaad in Malabar district, and Coorg. These regions are situated on plateaus or the eastern slopes of the Western Ghats where the annual rainfall rarely exceeds 100 inches. The western slopes of the Western Ghats receiving 150 to 200 inches of rainfall may not be suitable for vanilla. Similarly, prolonged rainy conditions in the extreme South may also be unfavourable to the crop. Generally speaking, vanilla may be grown in most of the pepper-growing areas of south-west India.