

CHAYAPASUPU OR HILL TURMERIC

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Turmeric is cultivated in the Golugonda hills by the Bagatas and Valmikies, the principal tribes of the tract, who raise it in small patches of land varying from 10 to 30 cents. The crop is grown dry with the help of rainfall which ranges from 60 to 80 inches per annum. It is grown pure or as a mixture with *Pippali* (long pepper).

Soil.—The soil on which this crop is grown is loamy and is naturally very rich in its content of organic matter, being therefore capable of giving heavy returns, even without manuring.

Preparatory cultivation.—With the help of the summer rains the ploughing of the land is commenced, and is completed by the beginning of June. The total number of ploughings given may vary from 3 to 5 as in the case of any other crop in the tract.

Manuring.—Normally, a system of regular fallowing is adopted between every two crops, so that there is no need for manuring; but in areas where such fallowing is not possible, cattle manure is applied sparingly, the maximum being about 3 to 5 cart-loads per acre. No penning of sheep or folding of cattle is done.

Seed material.—For planting, side shoots from the main fingers of the previous crop are selected at the time of cleaning and preserved in pits. These pits are dug under the shade of the eaves of the dwelling houses. The seed material is placed in them, covered over with straw and finally plastered over with dung. The pits are opened only at the time of planting. The quantity of seed material used is about 1,500 to 1,800 lbs. per acre.

Planting.—This is done after the break of the South-West monsoon. On somewhat sloping land, the seed material is dibbled in furrows one foot apart made by a country plough at a distance of about 9 inches, (the ryot expressing the spacing between the lines as the distance between the two horns of a bullock), and covered over by foot. On more level land, the furrows are somewhat closer apart (6 to 8 inches) so that the seed dibbled in the previous furrow is covered by the earth from the next furrow. When sown as a mixture with long pepper, a finger of turmeric is planted in the midst of every four vines of long pepper. The turmeric is said not to affect the yield of the long pepper.

After-cultivation.—This consists chiefly in hoeing three times during the life of the crop, the operation being done fairly deep. The first hoeing is given about a month after planting; the second in the third month and the third which is known as *Panta Goppu* is given in the month of December.

Harvesting.—The crop is ready for harvest early in January, when the digging of rhizomes is commenced, and carried on till the end of February or beginning of March. The dry leaves are first removed, and the rhizomes are dug out with crowbars. As the rhizomes are lifted, they are immediately cleaned free from soil and the side roots cut off. While doing

this the rhizomes are graded into two sorts namely *Pedda Pasupu* and *Musili Pasupu*, and sometimes into three sorts, *Peddapasupu*, *Dumpapasupu* and *Musilipasupu*, the first two going as *Peddapasupu* in the former case. *Dumpapasupu*, is the round central rhizome, while the fingers form the *Peddapasupu*. *Musilipasupu* is the original partly spent-up seed material, on which, some money is realised.

The crop is not generally harvested at one time. Such quantity as can be cleaned and marketed by an individual family is dug out at a time, and when this is cured, more stuff is dug up.

Curing and preparing for the market.—This is very simple, and consists of placing the raw fingers (cleaned) in a pot filling it with water and covering the mouth with a smaller pot, or a thick layer of leaves. It may be noted here that no cow-dung is added to the water or over the rhizomes as in the Godavari District. For each boiling about 50 lbs. of raw rhizomes are put in the pot. The process of boiling takes about $1\frac{1}{2}$ to 2 hours during which the water froths up three times. After the third frothing, the stuff is removed from the vessel, and dried in the sun on a clean floor for about ten or twelve days, and when dry, it is rubbed on flat stones to give a polish. If the weather is fair, the harvest, curing, drying and polishing take about a fortnight. The stuff thus prepared goes to the market in the name of *Chayapasupu* and is now selling at Rs. 60 to Rs. 64 per candy (of 500 lbs.) at the Kondasantha shandy. *Dumpapasupu* when separately graded is cured in the same way and fetches about the same price as that of *Peddapasupu* if not more, as it yields a larger quantity by measure of turmeric powder than the fingers, for the same weight pounded. *Musilipasupu* which is selected out at the time of cleaning is dried in the sun, without boiling, for about a week or ten days. It does not stand boiling, as it crumbles to pieces if so treated. The hillmen prefer this *Musilipasupu* for their *masala* (curry) powder, as it is reported to give better taste than the other. After being dried *Musilipasupu* also sometimes goes to the market in the name of *Arva Pasupu* or *Kura Pasupu* and fetches a low price of about Rs. 24 per candy according to the recent shandy rate. Usually it fetches about one-third the price of ordinary *Peddapasupu*, the merchants often purchasing this for adulteration with *Peddapasupu*.

Yield.—The yields are heavy compared to those of the plains where more care is bestowed. The yield is about 25,000 lbs. of greenstuff per acre or 5,000 lbs. of prepared produce fetching Rs. 600 to Rs. 640 per acre according to the present market rate.

Kondasantha, a place situated at the foot of the hills, nine miles from Narasapatam is the chief market for hill produce. A weekly shandy is held there on Fridays. From this shandy, merchants from Narasapatam purchase the stuff and take it to Tuni and other markets. A large quantity of hill turmeric is also received from Gangaraju Madugula Mutha of the Padwa taluk where the crop is said to be more extensively cultivated.

It may be noted here that the variety of turmeric cultivated in the hills and which yields *Chayapasupu* and that giving the *Kurapasupu* of the plains are said to be the same, the difference in the quality³ being attributed to the richness of the soils in the hills. A ryot who actually brought the seed

³ *Chayapasupu* is harder, closer-grained, and of a deeper yellow than *Kurapasupu*.

material from the hills and grew the crop from it for some years in the plains, stated that in spite of the best care taken regarding manuring etc., the stuff that was produced was inferior to that produced in the hills. If, even after a closer examination by a Botanist, the varieties are found the same, it will then be a matter for a Chemist to find an explanation for such a vast difference in the quality. If it is due only to environmental conditions, it should not be impossible for the plains ryot to satisfy the hill conditions, by artificial means and get a much higher income than he now gets out of the crop. The problem, therefore, is not merely academic but of considerable economic value.

MAN'S INSECT-ALLIES AGAINST A VEGETABLE FOE*

WAR ON THE PRICKLY-PEAR PLAGUE IN AUSTRALIA.

Australia has been termed *A Land of Pests*, mostly imported from other countries. Not the least of these is the prickly-pear, a plant of American origin belonging to the cactus family (*Cactaceæ*), a species which has spread over 50,000,000 acres of land in Queensland and New South Wales, and is known throughout Australia as the Pest Pear, or more simply, 'The Pear' (*Opuntia Inermis*). A century and a half ago, when Australia was first colonised, the cochineal industry was a monopoly of Spain and Portugal; cochineal, of course, being a red dye obtained from an insect which lives exclusively on certain kinds of prickly-pear. When the first fleet landed at Sydney in 1788, there were landed also specimens of the insect and pear privily obtained by the commander in Brazil on the voyage out, it being hoped to establish the cochineal industry at the Botany Bay; but the plant and the insects died, and for the time being Australia remained free from the pest.

Fifty years later, a Dr. Carlisle, migrating in a sailing ship to Australia from England, took with him, and carefully tended on the long voyage out, a rare plant in a pot. He settled at Scone, some 200 miles north of Sydney, and the doctor's gardener, enamoured of the strange plant, carried it about and established it here and there, expecting it to be a good reserve food for stock in a dry year. Other plants found their way into Queensland further north. They spread rapidly far and wide; the climatic and soil conditions suited the pear; soon it established itself everywhere, and about 1870 it was found that the pest had got beyond control. From then on, the pear rapidly spread throughout the sparsely-inhabited hinterland of Queensland; it advanced in every direction; it grew with amazing rapidity; it was extraordinarily prolific; there was no stopping it; farmers and graziers were in despair. Forty years later—in 1910—it was estimated that the pear had overrun 20,000,000 acres, and was advancing at the rate of 1,000,000 acres yearly. Over 30,000 square miles of territory had been invaded. By 1916 nearly 23,000,000 acres had succumbed to the pear, or 6,000,000 acres more than the total area under crops in the whole of Australia.

What is this terrible pear? It is a typical giant cactus armed with needle-shaped and powerful spines and bristles. These spines can penetrate a stout boot-sole; the bristles are barbed, and, once they enter the skin or clothing, are not easily removed, and will cause serious irritation both to

* Adapted by Dr. T. V. Ramiakrishna Ayyar from an illustrated article in the *Illustrated London News*.