

## Notes on some spice crops

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**Introduction.** Spices and condiments like chillies, onions, garlic, turmeric, are useful to man to add flavour and taste to his food. Their use in food generally helps to stimulate the digestive organs. They serve as medicines or medical adjuncts. As a drench or as a tonic powder they are largely used for live-stock. It is not the purpose of this article to discuss the effect of the several spices as medicines. Spices being very useful to man in some form or other in daily life, the cultivation of three special spice crops viz. cummin, coriander and garlic is discussed in the following pages. These are not commonly cultivated all over the country because they can be grown only under certain favourable conditions of weather, soil and water supply. Also their cultivation is of a special nature. Now and then, several enquiries are received from ryots of various parts about the cultivation of these crops. Therefore, the information on certain aspects of their cultivation as practised in the Udumalpet taluk of Coimbatore District is detailed for the benefit of those who desire to cultivate them. As conditions favouring their cultivation are restricted, the profits which may be expected by the successful growing of such crops of almost universal use are certainly more than what may be got from the ordinary crops. The knowledge on the cultivation of these crops are therefore of much importance to the ryots.

### I. Cummin.

(Botanical name—*Cuminum cyminum*)

Tamil	<i>Siragam.</i>
Telugu	<i>Jilakara.</i>

Cummin is cultivated over limited areas in parts of Coimbatore, Cud-dapah and Kurnool. This does not come under scheduled crops and therefore the area under cummin in Madras is not known. It is a very delicate crop which requires much care from the preparation of seed bed to harvesting, threshing and bagging. A salubrious fine weather with mild sun and light drizzle as is available in parts of Pollachi and Udumalpet taluqs of Coimbatore District during the South West Monsoon season is essential throughout the progress of the crop. The success or failure of the crop is very much dependent on the season, especially at the time of flowering.

**Season and weather conditions :—** In Udumalpet taluk where cummin cultivation has been going on for a long time but over a very small area annually, the crop is sown at about the end of May (*Vaigasi* 15th) just in the season when the south-west monsoon is about to commence. The weather which is then mild and cool due to the light showers accompanied by a gentle breeze is conducive for the healthy growth of the crop. If the weather is otherwise and the atmosphere stuffy with moist heat and the sun

very bright and hot, the crop withers and the flowers shed, resulting in failure. There is also another season for the crop, i. e. *Margali-Tha* (about January) But the crop grown in this season is often affected by dew and mist which are harmful to the healthy growth of this crop. So this is a delicate crop which is very much dependent upon the vagaries of the season in which it is grown.

**Soil and its preparation :—** Rich red-loams and garden soils of a well-drained nature are best suited for the crop. Land for sowing must be very clean. Stubbles of the previous crop, pebbles and stones must be removed. A fine tilth and a firm seed-bed should be obtained. No direct manuring is done to the crop. *Cumbu* (Pearl millet) which generally precedes cummin should be heavily manured with well-rotten cattle manure or by penning sheep at 5000 per acre. The land becomes fit for cummin after a crop of *cumbu* during which the manure gets well-rotten and easily available. The weeds are got rid of and the soil becomes cool and friable. After harvesting *cumbu*, the stubbles should be removed which is ordinarily done with a *mammatty*. Otherwise, a light ploughing and breaking up of clods may be necessary before sowing cummin. The land should be absolutely free from weeds, especially *korai* (nutgrass) which is very difficult to weed out from the cummin crop. Sowing is done in beds which are long and narrow, 4 feet wide, 8 feet to 10 feet long to facilitate weeding of the entire plot by the women working from bunds only.

**Seeds and sowing :—** Seed cummin is different from the ordinary cummin sold in the bazaar. The seed cummin is a selected grain well dried and preserved. It is more costly than the bazar produce. The seed rate is about 1 to  $1\frac{1}{2}$  maunds per acre (a maund=25 lbs). The cost of cummin seed varies from Rs. 5 to Rs. 10 per maund. One man and 4 women can sow an acre and cover the seeds. After sowing the seed, beds are stirred carefully with a stick about two feet long and forked at the end to cover the seeds. Otherwise seeds may be buried too deep.

**Irrigation :—**The first two waterings must be very carefully done as otherwise there may be failure of germination by the seeds being covered with too much earth or being carried to one corner of the bed, floating on the surface. The crop requires to be irrigated once in three or four days. The total number of irrigations may come to 15 to 20 in 60 days which is the duration of the crop from sowing to harvest. A well fitted with two *mholes*, may command 3 acres under this crop, if the water is not diverted for other crops.

**After cultivation :—**Weeding commences after the third watering i. e., the tenth or twelfth day after sowing. The tools used are small, 6" to 8" long with a sharp end and not of any special nature. Even small iron spoons are used for the work. Weeding is done by women working from the bunds, one from either side, the width of the bed being only 4 feet. Two women thus move together from bed to bed. Eight to ten women

manage to weed and hoe an acre and more labour is required if the field is very weedy. The total number of hoeings needed is three to four at intervals of 5 days to a week. Weeding and hoeing are done till the crop spreads itself out to shade the soil.

Forty days after sowing flowering commences. The crop is then 6" to 9" high. At this stage in spite of all care taken by the cultivator in the cultivation of the crop, if weather conditions are adverse, fruit setting will be poor. The ideal conditions of good breeze, mild sun and light drizzle will be congenial and will bring the crop to fruition. Excess of heat; stuffy atmosphere, want of breeze and heavy down-pour of rain are all injurious to the crop at this stage. No seed will set under the latter conditions.

**Harvesting and threshing.** Sixty days after sowing, the crop is ready for harvest. Then the plants are carefully pulled out with their roots, and placed in a blanket and bundled. The harvested crop is taken to the threshing floor, which should be very clean, hard and protected from wind. It is allowed to dry there for two days. Thin canes are used in threshing out the seed which is done by tender beatings. Small quantities from the heap are taken and beaten at a time, until the whole lot is finished.

**Cleaning.** The cummin and the dry broken stalks which get mixed up at the time of threshing are separated by winnowing in a light breeze or with a hand winnower.

**Economics.** The best yield obtained per acre is 50 maunds or 10 bags, the average being only 30 maunds. Some years back, a maund of seed was selling at Rs. 4 to Rs. 15 per maund. The cost of cultivation is about Rs. 50 per acre while the net income varies from Rs. 100 to Rs. 300 depending upon the yield and the demand for the seed. From Udamalpet it is exported to Madras, Calicut and other places. But when the supply of cummin falls short, the local demand is met from Bombay. The price of cummin has fallen now to Rs. 3 to Rs. 4 per maund.

**Pests and diseases.** The crop is attacked by 'mildew' (*Kolli novu*) which is caused by a fungus (*oldiopsis taurice*) When plants are affected by this, they become black and dry up. It is also subjected to some root-worm attack. This causes withering of plants.

Of recent years, owing to the very delicate nature of the crop and unfavourable season, the cultivation of the crop is limited to only small patches in this taluq. It is therefore as precarious a crop as it is valuable.

#### GARLIC

Botanical name	= <i>Allium sativum</i> .
Tamil	" = <i>Vellaiipoondu</i> .
Telugu	" = <i>Tellagadda</i> .

In Udamalpet taluk, garlic is known as a rare field crop. As a food, garlic is almost universally used in curries on account of its varied medicinal properties. Though it is allied to ordinary onions, it is a more valuable crop than onion and keeps much longer. It is also more costly. In this

taluk, it is cultivated side by side with ordinary onions almost under similar conditions of soil and water supply. Therefore, garlic crop as a rule, is cultivated by every ryot who grows onion in his garden lands which are not suited to the raising of the tobacco crop. In other words, it may be said that garlic suits the sweet water conditions well.

There are two seasons (*pattams*) for the crop in Udamalpet :—

1. June to September—*Vaigasi pattam* or *kar pattam*.

2. November to March—*Karthikai* or *Parvam pattam*. The duration of the *kar* or summer crop is 105 days while that of *paravam* or winter crop is only 90 to 95 days. It is raised from bulbs. The seed rate per acre is 8 to 10 maunds (1 maund = 26 lbs.) the lesser seed rate being for winter crop. The seed from the *kar pattam* is used for sowing in *parvam pattam* and vice versa. Keeping the seed beyond one season is uneconomic.

**Soil.** Good black-loam is best suited for the crop. It is however grown in red-soils also. The crop does well after ragi. It is, however, not uncommon to plant them in fallow fields kept well-ploughed for some time.

**Manuring.** The manuring aspect of the crop is an important one and it should be properly attended to. Being a 'root-crop', the field to be planted requires a heavy application of manure. The ryots apply to the crop about 40 to 50 cart-loads of cattle manure besides sheep penning up to 6000 sheep per acre. Application of potash manures in addition to vegetable composts would be beneficial. Municipal rubbish and house-sweepings contain potash and may be applied with advantage.

**Sowing.** Sowing is done with the hand after beds are formed; the size of beds depends on local practice. The whole bulbs are separated into segments by rolling them on a hard floor. After sowing they are covered lightly with soil and then irrigated. A day or two later, the bulbs that are exposed are gently pressed down with the fingers into the soft earth. Twenty to thirty waterings are necessary at intervals of 3 to 5 days and four weedings, within two months.

**Harvesting and Preparation for the market.** Harvesting is done when flowering commences. The proper time for harvest is ascertained by removing a few plants at random from some of the beds (after the 90th day from sowing). When three '*porais*' (separate bulbs that project like knobs from the surface of the entire bulb) are formed in, say, 6 out of 10, the crop may be considered to be ready for harvest. Harvesting is done by levering up the entire plant with a small iron stick termed '*ambu*'. The stuff, after harvest, is left in the field for 1 or 2 days to dry with the leaf. If the crop is very good, the leaf may be cut then and there. Later, it is brought to the drying floor where it is dried in the sun till the green leaves completely dry up. The bulbs harvested at the right time, should be hard and white. If the harvest is delayed, a pinkish tinge may develop on the surface of the bulb. This reduces the market value of the produce, hence the importance of timely harvest. When the bulb is well dried for 4 or 5 days in the

sun, it is kept spread out over-night. The next day, the produce is bagged in lots of 5 maunds each and is then ready for the market.

The yield obtained per acre varies with the season, the treatments given and the health of the crop. The crop being one of a delicate nature is subject to the attack of insects like thrips and fungus diseases like *Alternaria palundii*.

Twenty to twenty two fold (20-22 maunds from a maund of seed) is considered a good yield. 10 to 15 maunds for one maund of seed is regarded as a medium crop and 7 to 10 maunds is considered poor. The crop used to fetch Rs. 5 to 6 per maund though the present price is as low as Rs. 2 to Rs. 3 per maund. The price varies according to the size and quality of the bulb.

Garlic is despatched to outside districts. It goes to Trichinopoly, Tanjore, Palghat, Ernakulam, Cochin, Nilgiris, Madras, Dindigul, Madura, South Arcot and Guntur. From some of these places it is exported to Ceylon.

Given good tilth, sufficient manure and frequent irrigations, a good crop is usually obtained. Clear bright weather during the growing period is very desirable.

It is interesting to note that garlic that is produced in Udamalpet taluk is not used locally as it is of a very pungent quality. It is said that the local garlic is suited only to places hotter than Udamalpet. Annually about 5000 maunds (1 maund=26 lbs) are exported to out-side districts. The ruling price is Rs. 2-4-0 per maund of 26 lbs. For local consumption, hill garlic (*malai poondu*) from the Travancore High Ranges and Kodaikanal hills is imported. About 300 to 400 maunds are consumed in Udamalpet annually. The hill garlic is a mild one as compared with the local one and it is said that it is favoured in places like Udamalpet. The price of hill garlic is always Rs. 1-0-0 to Rs. 1-8-0 more per maund than the local garlic. The present price of hill garlic is from Rs. 3-0-0 to 3-8-0 per maund of 26 lbs.

Onion is a serious competitor for the garlic crop. The area under this crop is generally regulated by the price of the onion crop. Fungoid diseases also seriously affect the crop. The present low price is also standing in the way of extension under the crop.

The cost of cultivation and the profits per acre from the crop are roughly as follows:—

#### Cultivation Details.

	Rs.	As.	Ps.
Ploughings 5 @ Re. 1-4-0 per ploughing	...	6	4 0
Forming beds (4 men)	...	1	0 0
Seed: 10 maunds	...	30	0 0
Sowing: 10 women	...	1	4 0
Watering 32 at 3 Rs. per irrigation.	...	96	0 0
Sheep penning (6000)	...	15	0 0

Cart loads of cattle manure or Village sweepings 25	...	25	0	0
Hoeing and weeding: 60 women for 4 hoeings	...	7	8	0
Harvesting	...	1	0	0
Cutting the leaves and cleaning: 20 to 25 women	...	3	0	0
Drying and bagging	...	1	8	0
<b>Total</b>	...	<b>187</b>	<b>8</b>	<b>0</b>
Yield 150 maunds at 2--4--0 per maund of 26 lbs.	...	337	8	0
Expenses	...	187	8	0
Gain per acre	...	150	0	0

The profit is calculated for a crop of normal yield. The crop in Udamalpet taluk is loosing ground due to continuous bad seasons, risky nature due to diseases and insects and low price for garlic.

### CORIANDER

Botanical name	<i>Coriandrum Sativum</i>
Tamil ..	<i>Kottumalli</i>
Telugu ..	<i>Dhanialu</i>

Coriander seed is much used in South India as a condiment. The plant in its seedling stage is used as a green vegetable to flavour certain dishes. It is grown in Madras presidency to a large extent, on about a lakh of acres a year, chiefly in Tinnevely and Coimbatore districts. The crop is confined to the black soil. It is mainly grown as a mixed crop with dry cotton. But in deep black cotton soils, it is also cultivated as a pure crop.

**Mixture with Cotton.** As a mixed crop with cotton, no special cultivation is given to it except what is done for cotton. For cotton, the field is ploughed two to three times in the hot weather between May and September. With the North-east moonsoon in October, a mixture of cotton and coriander is sown broadcast in the ratio of 10 : 1 (i. e. 10 lb of cotton seed and 1 lb of coriander seed per acre) and the seeds are covered by the country plough. It comes up and grows alongside with cotton. Two weedings and hoeings, one in November and another in December are done. Three and a half months after sowing, coriander is ready for harvest. The yield comes handy to the ryot at the time of his first payment of kist.

The cost of cultivation as a mixture crop is not more than a rupee which includes the value of seed sown and the harvesting and threshing charges.

**Curing.** The crop is harvested early in the morning and is taken to the threshing floor tied up in bundles. The bundles are stacked in such a way that the shoots are towards the centre of the heap and roots are pointing outside. In the stack they undergo fermentation which probably helps the development of aroma and renders threshing easy. On the evening of the second or third day, the stack is disturbed and the bundles are taken out and spread on the threshing floor with heads upwards. They are kept thus exposed over one cold night. Early next morning, teams of cattle are used in threshing. In case of a small crop, treading is done by

human labour. The seed which is mixed up with dry leaves and broken stalks is winnowed and dried before bagging. A bag of well dried seed weighs about 80 lbs measuring 54 Madras measures. In the case of a mixture crop, the yield is about 100 lbs and the net profit per acre is about Rs. 4.

**Pure crop.** Coriander as a pure crop receives all the operations which were detailed above for a mixture crop of cotton and coriander. The seed rate is, however, more, 10 to 12 lbs. per acre, and also the yield is high—400 to 500 lbs. per acre. Deducting the cost of cultivation from the value of the produce, the net profit per acre out of a pure crop is about 10 to 15 rupees.

The cotton crop succeeding a pure coriander crop in dry lands is said to grow and to yield well. Therefore it is considered a good crop to rotate with cotton.

**Garden land cultivation.** In garden lands, coriander is cultivated in June. The land after being ploughed well 4 or 5 times, is manured heavily. Before sowing, clods are broken to obtain fine tilth of soil. Beds measuring 10 feet by 4 feet are then formed and the seed is sown broadcast at 10 to 12 lbs. per acre. After the seed is sown, water is applied gently, from bed to bed. The first irrigation is given 3 days after and subsequent irrigations at the same interval. The seeds germinate in 10 days. The crop is, afterwards, watered once a week till the harvest time.

In the case of an irrigated crop, the cost of cultivation is high on account of the irrigation charges and the cost of manuring, unlike in the case of a dry crop. The yield got from the irrigated crop is about 1500 lbs. The cost of cultivation is about Rs. 25 and the net profit per acre is about Rs. 60. In gardens near towns, the tender coriander leaves, if sold as vegetable, fetch a better profit.

Coriander seed is disposed of by the growers through the commission agents who export the produce to outside districts like Tanjore, Trichinopoly, Tuticorin and Madras. There is a keen demand for the seed in Ceylon where it finds a market. It is exported there from the Tuticorin port. The Indian coriander has to face a strong competition in the Ceylon market, from foreign coriander from Russia and Morocco. Russian coriander often commands a higher price than the Indian produce because merchants in Ceylon consider the foreign product better than the Indian coriander in being clean and of better quality. On examination of the different samples of the coriander seed at the Agricultural Research Institute, Coimbatore, it was found that they contained impurities as shown below :—

Morocco Coriander	1.6	per	cent
Russian ..	5.2	"	"
Tuticorin ..	20.8	"	"
Rangoon ..	5.8	"	"
Coimbatore ..	1.1	"	"

The Coimbatore coriander was the best and it contained less adulteration of stalks and sticks, stones and mud, 1 part only in every 100 of material. It is the Tulicorin coriander that gives our coriander a bad name in the Ceylon market. Russian coriander is considered better in point of flavour. But this is a disputable point, since flavour and smell varies with people and places. But one thing has to be said about the flavour, viz., the freshness of seed. If the seed is stored for a long time, it may turn rancid and may also be attacked by insects.

It is therefore to be said that while the Indian coriander is not in any way inferior in quality to the Russian coriander, the dirty condition in which it is marketed is probably the reason for its having lost favour in the Ceylon market. This defect can be remedied by the grower and vendor by following the hints given below:—

- (1) During cultivation, see that all weeds are removed, so that other seeds may not get mixed during harvest.
- (2) Harvest carefully, taking care to winnow out stalks, sticks and empty light seeds and seeing that no stones or mud get mixed up.
- (3) After cleaning the seed, store carefully in bags and market as soon as possible.
- (4) Avoid adulteration of any kind in the hope of making extra weight; if this is done, it will soon be found out and buyers will lose confidence in you and your reputation will be lost.

These rules are simple and easy to follow. The care in cultivation and honesty in marketing are the golden rules of success.

In recent years, owing to high price for the commodity, its cultivation is extending and it is becoming a more prominent subsidiary crop in this presidency.

The crop is subjected to *miraeu* ( *Sambal Novu* ) which appears at the time of flowering. On account of the disease the flowers wither and shed without setting seed. The cloudy and dewy weather in the cold weather months encourages diseases and pests.