# ASSESSMENT OF COMMON PRACTICES OF TURMERIC CULTIVATION

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Turmeric (Curcuma Longa L.) production in India has assumed a great importance because of its value as an important condiments as well as a crop of medicinal value. It also finds a place on religious and ceremonial occasion. It is one of the most popular flavouring and colouring agents. It is a rich source of vitamin A, B, C and niacin. This crop is also an important source of foreign exchange, approximately 15-20 per cent of the total production of turmeric is exported from our country. Turmeric is grown as a cash crop in India and ranks Ist in the world in respect of acreage under turmeric, accunting for about 26 per cent of the world. It is grown on an area of 0·12 million ha. with an annual production of over 0·35 million tonnes (1993-94). In India, the major turmeric producing states are Andhra Pradesh, Orissa, Karnataka, Tamilnadu, Assam, Maharastra and Rajasthan.

The States of Rajasthan, Udaipur district is placed at Ist rank in the terms of area and production of turmeric crop. The total area under turmeric cultivation in the district is approximately 140 ha. with a production of 569 mt. The average yield cf turmeric is 4064 kg per ha. in the district (1994-95) but it is low as compared to other country and even other districts of Rajasthan. The basic reason behind the situation is lack of technical knowledge and adoption of improved turmeric production technology. Thus there exists a vast scope to improve average yield of turmeric through providing adequate technical know-how to turmeric growers. Keeping the above information in mind, the present study was under taken to assess the common practices followed by tribal and non-tribal give appropriate suggestions there on.

## METHODOLOGY :

The present investigation was undertaken in Jhadol Panchayat Samiti of Udaipur district in Rajasthan. Selection of Panchayat Samiti was made considering the maximum area and production of turmeric among all the Panchayat Samities of the district. Three such village Panchayats were selected and two villages from each village panchayat was picked up on the basis of highest area under turmeric cultivation from each village, 20 respondents were selected randomly, in which 10 were tribal and 10 non-tribal communities. Thus, the total sample consisted of 120 respondents, out of which 60 were tribal and 60 were non-tribal. The data were collected through a well structured interview schedule by applying personal interview technique. Statistical tests like frequency, percentage were applied for analysis of data.

## RESULTS & DISCUSSION :

In the present investigation, efforts were made to identify the common practices of turmeric cultivation followed by the turmeric growers in the identified area and the results are discussed as under.

**Common practices followed by turmeric cultivators :** The practices with regard to production components were assessed and documented. The results are presented in Table 1.

The data in Table 1 (A) clearly indicate that none of the turmeric growers in the study area was using improved variety of turmeric. All the selected respondents (100%) irrespective of tribal and non-tribal categories was growing deshi turmeric chizome in their fields.

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**Table 1. Common practices of turmeric cultivation followed by Turmeric Growers.**

| S.No. | Varieties | Non-Tribal | | Tribal | | Total | |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % |
| (A) | **Varieties** | | | | | | |
| | 1. Deshi varieties | 60 | 100 | 60 | 100 | 120 | 100 |
| | 2. Improved varieties | 0·0 | 0·0 | 0·0 | 0·0 | 0·0 | 0·0 |
| (B) | **Soil preparation** | | | | | | |
| | 1. Type of soil | | | | | | |
| | (i) Loam | 37 | 61·66 | 11 | 18·33 | 48 | 40·0 |
| | (ii) Red loam | 23 | 38·33 | 49 | 81·66 | 72 | 60 |
| | 2. Preparation of soil before sowing | 60 | 100 | 60 | 100 | 120 | 100 |
| | 3. Preparation of furrow for sowing | 07 | 11·66 | 0·0 | 0·0 | 07 | 5·83 |
| | 4. Specific period for soil preparation | | | | | | |
| | (i) 2nd fortnight of April | 0 | 0·0 | 0·0 | 0·0 | 0 | 0·0 |
| | (ii) Ist fortnight of May | 04 | 6·66 | 00 | 0·0 | 04 | 3·33 |
| | (iii) Any othertime (June) | 56 | 93·33 | 60 | 100·0 | 116 | 96·66 |
| | 5. Preparation of beds for irrigation | 60 | 100 | 60 | 100 | 120 | 100 |
| (C) | **Seed and sowing :** | | | | | | |
| | 1. Treatment of turmeric rhizome before sowing | 0 | 0·0 | 0 | 0·0 | 0 | 0·0 |
| | 2. Shading of rhizome before sowing | 60 | 100·0 | 60 | 100·0 | 120 | 100·0 |
| | 3. Seed rate of turmeric followed : | | | | | | |
| | (i) 18 Q/ha. | 45 | 75·0 | 45 | 75·0 | 90 | 75·0 |
| | (ii) More than 18 Q/ha. | 15 | 25·0 | 15 | 25·0 | 30 | 25·0 |
| | 4. Appropriate depth of sowing : | | | | | | |
| | (i) Lesse than (≥) 7 cm | 44 | 73·33 | 48 | 80·0 | 92 | 76·66 |
| | (ii) More than (≤) 8 cm | 16 | 26·67 | 12 | 20·0 | 28 | 23·33 |
| | 5. Procedure of sowing | | | | | | |
| | (i) Furrow sowing | 07 | 11·67 | 0 | 0·0 | 07 | 05·83 |
| | (ii) Plain bed sowing | 53 | 88·33 | 60 | 100·00 | 113 | 94·17 |
| | 6. R × R and P × P distance kept | | | | | | |
| | (i) 22 × 22 cm | 19 | 31·67 | 22 | 36·67 | 41 | 34·16 |
| | (ii) 40 × 30 cm | 41 | 68·33 | 38 | 63·33 | 79 | 65·84 |
| (D) | **Manures & fertilizer application** | | | | | | |
| | 1. Application of FYM in the field before sowing | 60 | 100·0 | 60 | 100·0 | 120 | 100·0 |
| | 2. Application of basal dressing of chemical fertilizers in the crop | 52 | 86·66 | 21 | 35·0 | 73 | 60·83 |
| | 3. Application of $N_2$ fertilizers through top dressing | 29 | 48·33 | 04 | 6·66 | 33 | 27·75 |
| | 4. Supplement the soil with trace elements | 0 | 0·0 | 0 | 0·0 | 0 | 0·0 |
| (E) | **Weed control & mulching :** | | | | | | |
| | 1. Interculture operation for weed management in field | 60 | 100·0 | 60 | 100·0 | 120 | 100·0 |
| | 2. Use of weedicide | 04 | 6·66 | 0 | 0·00 | 04 | 3·33 |
| | 3. Number of weeding : | | | | | | |
| | (i) Two times | 16 | 26·66 | 21 | 35·0 | 37 | 30·84 |
| | (ii) More than two times | 44 | 73·33 | 39 | 65·0 | 83 | 69·16 |
| | 4. Mulching at the time of sowing and weeding | 60 | 100·0 | 56 | 93·33 | 116 | 96·66 |

| S.No. | Varieties | Non-Tribal | | Tribal | | Total | |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % |
| (F) | **Irrigation scheduling :** | | | | | | |
| | 1. Number of irrigation : | | | | | | |
| | (i) Six to eight | 60 | 100·0 | 600 | 100·0 | 120 | 100·0 |
| | (ii) More than 8 | 0 | 0·0 | 0 | 0·00 | 00 | 0·0 |
| | 2. Application of Ist irrigation : | | | | | | |
| | (i) Just after germination | 51 | 85·0 | 41 | 68·33 | 92 | 76·66 |
| | (ii) 20-25 days after germination | 09 | 15·0 | 19 | 31·67 | 28 | 23·33 |
| | 3. Drainage system : | | | | | | |
| | (i) Open channel | 60 | 100·0 | 60 | 100·0 | 120 | 100·0 |
| | (ii) Underground channel | 00 | 0·00 | 00 | 0·00 | 00 | 0·00 |
| (G) | **Plant protection measures :** | | | | | | |
| | 1. Application of insecticide | 09 | 15·0 | 0 | 0·00 | 15 | 7·50 |
| | 2. Application of fungicide | 16 | 26·66 | 0 | 0·00 | 16 | 13·33 |
| | 3. Biological control measures | 0 | 0·00 | 0 | 0·00 | 0 | 0·0 |
| (H) | **Harvesting & curing practices :** | | | | | | |
| | 1. (i) When leaves turn yellow and start drying up | 56 | 93·33 | 47 | 78·33 | 103 | 85·83 |
| | (ii) When leaves still yellow and shadding lower leaves | 04 | 06·67 | 13 | 21·67 | 17 | 14·16 |
| | 2. Harvesting time : | | | | | | |
| | (i) Mid Nov. to mid Dec. | 40 | 66·66 | 42 | 70·0 | 82 | 68·33 |
| | (ii) End of Dec. to beginning Jan. | 20 | 33·33 | 18 | 30·0 | 38 | 31·66 |
| | 3. Curing of turmeric rhizome | 60 | 100·0 | 120 | 100·0 | 120 | 100·0 |
| | 4. Curing for domestic use : | | | | | | |
| | (i) Deshi method | 60 | 100·0 | 60 | 100·0 | 120 | 100·0 |
| | (ii) Scientific method | 0 | 0·00 | 00 | 0·00 | 00 | 0·00 |
| (I) | **Storage of seed & Marketing practices** | | | | | | |
| | 1. Storage of the rhizome for seed purpose | 60 | 100·0 | 60 | 100·0 | 120 | 100·0 |
| | 2. Treatment of rhizome before storage | 0 | 00·0 | 0 | 0·00 | 0 | 0·00 |
| | 3. Storage of rhizome in the pits scientifically | 48 | 80·00 | 10 | 16·66 | 58 | 48·33 |
| | 4. Storage of surplus produce | 0 | 0·00 | 0 | 0·00 | 0 | 0·00 |
| | 5. Sale of green turmeric | 60 | 100·0 | 60 | 100·0 | 120 | 100·0 |
| | 6. Sale of cured turmeric | 0 | 0·00 | 0 | 0·00 | 0 | 0·00 |

F = Frequency % = Percentage

The data on soil preparation (B) reveal that preparation of soil before sowing the rhizome and preparation of beds for irrigation purposes were common for all selected tribal and non-tribal respondents. Almost all the respondents had prepared the field in the month of June for turmeric cultivation. About 60 per cent of the total had sown turmeric in red loam. The observation of the data on seed and sowing (C) indicates that shading of rhizome before sowing was common for all the respondents. Likewise, plain bed sowing as a procedure of turmeric sowing was found common for 94·16 per cent of the selected respondents. A fair majority i.e. 76·66 per cent had kept depth of sowing ≥ 7 cm. It can be seen from table that 75 per cent of the respondents had applied 18 q./ha. seed in their field and the 67·84 per cent respondents were reported to follow 40 × 30 cm. P × P and R × R distance. A close observation to the table shows that none of the respondents irrespective of tribal and non-tribal was found using treatment of turmeric rhizome

before sowing in the field. The other practices were uncommon for majority of respondents selected for the study. It can be seen from data (D) that each selected respondent, had applied FYM in the filed before sowing the turmeric crop. This was followed by application of basal dressing of chemical fertilizers which was found common for 60·83 per cent of selected turmeric growers. None of the tribal and non-tribal respondents had supplemented the soil with trace elements. Basal use of fertilizers was double by non-tribal than tribal farmers. The data incorporated in table 1 (E) reveal that interculture operations for weed management was common for all. Respondents had practiced mulching at the time of sowing and weeding. About 69·16 per cent of the selected respondents had practiced weeding more than two times in their fields. Only 3·33 per cent of them had used weedicides for weed control but none of them was tribal farmer. It can also seen from table 1 (F) that each and every selected respondents applied 6-8 irrigations in their crop. It was also observed that application of 1st irrigation just after the germination was common for 76·66 per cent selected turmeric growers. It is interesting to note that all the respondents (100%) had used open drainage system in their fields. The observation of the data incorporated in table 1. (G) shows that none of the listed practices were followed by the tribal respondents. Only some non-tribal respondents had used plant protection measures and not any of tribal and non-tribal farmers used biological control as plant protection measures. The data incorporated in table 1. (H) indicate that curing of turmeric by local method was common for all respondents. The data further indicate that almost all the respondents had harvested turmeric crop when leaves turned yellow and started drying up, in mid Nov. to Dec. The other practices were not found common for majority of selected respondents. The observation of table 1. (I) shows that 100 per cent respondents irrespective and non-tribal and tribal had stored the rhizome for next crop and sold the green turmeric in the market. It is surprising to note that none of the respondents irrespective of tribal and non tribal followed treatment of rhizomes before storage if kept for seed purpose and in storage of surplus produce for getting good price. None of the respondetnt cured the turmeric rhizomes.

## CONCLUSION :

It is observed in the study area that all the farmers were growing deshi variety of turmeric in their fields. They did not have knowledge about improved varieties of turmeric and very few number of farmers prepared furrow for sowing the rhizome. It was also noted none of the farmers treated turmeric rhizome before sowing by fungicide and also none of the respondents used trace elements and very few non-tribal respondents used weedicides for weed control in their field. All the respondents had up-to-date knowledge regarding irrigation scheduling. None of the tribal respondents used plant protection chemicals in their field. Only a few non tribal had used. It was also found that all the respondents cured the turmeric for domestic use with deshi (local) method and were found storing rhizome for seed purpose.

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