

## EXISTING CULTIVATION PRACTICES OF TURMERIC BY THE TURMERIC GROWERS

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**Abstract:** The study was undertaken on 'existing cultivation practices of turmeric by the turmeric growers' of Chhattisgarh Plains. A total of 320 farmers were considered as respondents for this study. Respondents were interviewed through personal interview. Collected data were analyzed with the help of suitable statistical methods for assessing the different components of turmeric cultivation like improved variety, recommended seed rate, recommended fungicide for seed treatment, fertilizers application and chemicals for plant protection.

**Keywords:** Existing, Cultivation practices, Turmeric growers, Turmeric cultivation

### INTRODUCTION

Turmeric is one of the important cash crops in India. India is the larger producer and exporter of turmeric in the world. Turmeric occupies about 6 per cent of the total area under spices and condiment products in India. In the year 2012-13 turmeric cultivation was 194 thousand ha with the production of 971 thousand tonnes. It reached to 233 thousand ha with the production of 1190 thousand tonnes in the year 2014-15 (Anonymous, 2015).

Chhattisgarh is also one of the important states of turmeric cultivation. In the Chhattisgarh state about 11.021 thousands ha of cultivation area and produce 113.34 thousand tonnes of turmeric. Looking towards increase in area under turmeric present is carried out (Anonymous, 2014).

### MATERIALS AND METHODS

The present study was conducted in Chhattisgarh plains. The state comprises 27 districts, out of which 5 districts were selected purposively on the basis of maximum area and maximum number of turmeric growers. From each selected districts, 2 blocks were selected purposively for the study on the basis of

maximum area and maximum number of turmeric growers. From each selected block, 4 villages were selected purposively on the basis of maximum area and maximum number of turmeric growers. From each selected villages, 4 beneficiaries and 4 non-beneficiaries were selected randomly for the comparison between both groups. In this way total 320 farmers were considered as respondents for the study. Data were collected by the personal interview method using structured schedule. The *ex-post-facto* research design was used for the study. Appropriate statistical tools used for analysis and interpretation of data.

### RESULTS AND DISCUSSION

#### Recommended varieties of turmeric

The data regarding distribution of the respondents according to recommended varieties of turmeric are presented in Table 1 reveals that out of total, 46.88 per cent respondents were sowing Roma variety, followed by 29.68 per cent were sowing Narendra haldi-1, whereas 13.44 per cent B.S.R.-2 and 10.00 per cent of them were sowing Prabha variety of turmeric in the study area.

**Table 1.** Distribution of the respondents according to recommended varieties of turmeric

S. No.	Variety	Respondents					
		Beneficiaries		Non-beneficiaries		Total	
		F	%	F	%	F	%
1	Roma	128	80.00	22	13.75	150	46.88
2	Prabha	32	20.00	0	0.00	32	10.00
3	Narendra Haldi-1	0	0.00	95	59.37	95	29.68
4	B.S.R.-2	0	0.00	43	26.88	43	13.44

F – Frequency, % - percentage

In case of beneficiaries, 80.00 per cent respondents were sowing Roma variety and 20.00 per cent of them were sowing Prabha variety of turmeric.

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Similarly, in case of non-beneficiaries, 59.37 per cent respondents were sowing Narendra haldi-1, whereas

26.88 per cent B.S.R.-2 and 13.75 per cent of them were sowing Roma variety of turmeric.

It can be concluded that majority of the beneficiaries had adopted Roma variety and in case of non-beneficiaries, it was adopted Narendra haldi-1.

#### Recommended seed rate in turmeric

The data regarding distribution of the respondents according to use of recommended seed rate of turmeric are presented in Table 2 reveals that out of total, 57.50 per cent of the respondents had adopted below recommended seed rate and 42.50 per cent of them adopted as per recommended seed rate of turmeric in study area.

**Table 2.** Distribution of the respondents according to recommended seed rate in turmeric

S. No.	Seed rate	Respondents					
		Beneficiaries		Non-beneficiaries		Total	
		F	%	F	%	F	%
1	Up to 18 q ha <sup>-1</sup>	88	55.00	96	60.00	184	57.50
2	Above 18 q ha <sup>-1</sup>	72	45.00	64	40.00	136	42.50

F – Frequency, % - percentage

In case of beneficiaries, 55.00 per cent of the respondents had adopted below recommended seed rate and 45.00 per cent respondents adopted as per recommended seed rate of turmeric.

Whereas, in case of non-beneficiaries, 60.00 per cent of the respondents had adopted below recommended seed rate and 40.00 per cent respondents adopted as per recommended seed rate.

It can be comprehended from the above data that majority of the beneficiaries and non-beneficiaries had adopted below recommended seed rate.

#### Recommended fungicide for seed treatment

The data regarding distribution of the respondents according to use of chemicals for seed treatment of turmeric are presented in Table 3 reveals that out of total, 10.31 per cent of the respondents used mancozeb, whereas 10.00 per cent used rhizobium and 5.93 per cent of them used dithem, M-45 for seed treatment of turmeric.

In case of beneficiaries, 20.00 per cent of the respondents used rhizobium, followed by 15.62 per cent mancozed and 10.00 per cent of them used dithem, M-45.

**Table 3.** Distribution of the respondents according to seed treatment in turmeric

S. No.	Chemicals	Respondents					
		Beneficiaries		Non-beneficiaries		Total	
		F	%	F	%	F	%
1	Mancozeb	25	15.62	8	5.00	33	10.31
2	Dithem, M-45	16	10.00	3	1.88	19	5.93
3	Rhizobium	32	20.00	0	0.00	32	10.00

F – Frequency, % - percentage

Similarly, in case of non-beneficiaries, 5.00 per cent of the respondents used mancozed and 1.88 per cent of them used dithem, M-45 for seed treatment.

A close observation of the above results shows that majority of the beneficiaries used rhizobium and in case of non-beneficiaries, it was used mancozed for seed treatment.

#### Fertilizer application in turmeric

The data regarding distribution of the respondents according to application of fertilizers in turmeric are presented in Table 4 indicates that out of total, 56.56 per cent respondents used below recommended dose of nitrogenous fertilizers and 42.81 per cent used as per recommended dose of nitrogenous fertilizers, whereas regarding phosphoric fertilizers 62.50 per cent of the respondents used below recommended dose of phosphoric fertilizers and 36.87 per cent used as per recommended dose of phosphoric fertilizers.

On other hand, regarding application of potassium fertilizers, 69.06 per cent respondents used below recommended dose of potassium fertilizers and 30.31 per cent respondents used as per recommended dose of potassium fertilizers.

In case of beneficiaries, 53.12 per cent of the respondents used below recommended dose of nitrogenous fertilizers and 46.88 per cent respondents used as per recommended dose of nitrogenous fertilizers, whereas 60.62 per cent respondents used below recommended dose of phosphoric fertilizers and 39.38 per cent respondents used as per recommended dose of phosphoric fertilizers. On other hand, 67.50 per cent respondents used below recommended dose of potassium fertilizers and 32.50 per cent respondents used as per recommended dose of potassium fertilizers.

**Table 4.** Distribution of the respondents according to application of fertilizers in turmeric

S. No.	Fertilizers	Respondents					
		Beneficiaries		Non-beneficiaries		Total	
		F	%	F	%	F	%
<b>I</b>	<b>Nitrogen</b>						
1	Up to 120 kg ha <sup>-1</sup>	85	53.12	96	60.00	181	56.56
2	Above 120 kg ha <sup>-1</sup>	75	46.88	62	38.75	137	42.81
<b>II</b>	<b>Phosphorous</b>						
1	Up to 80 kg ha <sup>-1</sup>	97	60.62	103	64.37	200	62.50
2	Above 80 kg ha <sup>-1</sup>	63	39.38	55	34.37	118	36.87
<b>III</b>	<b>Potash</b>						
1	Up to 100 kg ha <sup>-1</sup>	108	67.50	113	70.62	221	69.06
2	Above 100 kg ha <sup>-1</sup>	52	32.50	45	28.12	97	30.31

F – Frequency, % - percentage

Similarly, in case of non-beneficiaries, 60.00 per cent of the respondents used below recommended dose of nitrogenous fertilizers and 38.75 per cent respondents used as per recommended dose of nitrogenous fertilizers, whereas 64.37 per cent respondents used below recommended dose of phosphoric fertilizers and 34.37 per cent respondents used as per recommended dose of phosphoric fertilizers. On other hand, 70.62 per cent respondents used below recommended dose of potassium fertilizers and 28.12 per cent respondents used as per recommended potassium fertilizers.

It can be concluded that majority of the beneficiaries and non-beneficiaries had used below recommended

dose of nitrogenous, phosphoric and potassium fertilizers.

#### Weed control in turmeric

The data regarding distribution of the respondents according to weed control in turmeric by chemical methods are presented in Table 5 reveals that out of total, 4.68 per cent of the respondents used pendimethelin and 2.18 per cent were used oxyfluorfen.

In case of beneficiaries, 4.37 per cent of the respondents used pendimethelin and 3.12 per cent were used oxyfluorfen.

**Table 5.** Distribution of the respondents according to weed control in turmeric by chemical methods

S. No.	Herbicide	Respondents					
		Beneficiaries		Non-beneficiaries		Total	
		F	%	F	%	F	%
1	Pendimethelin	7	4.37	8	5.00	15	4.68
2	Oxyfluorfen	5	3.12	2	1.25	7	2.18

F – Frequency, % - percentage

Similarly, in case of non-beneficiaries, 5.00 per cent of the respondents were using pendimethelin and 1.25 per cent respondents used oxyfluorfen.

Hence, it can be concluded that majority of the beneficiaries and non-beneficiaries were using pendimethelin for weed control.

#### Insect-pest control in turmeric

The data regarding distribution of the respondents according to application of pesticide in turmeric are presented in Table 6 indicates that out of total, 34.37 per cent of the respondents used chloropyriphos, whereas 8.43 per cent respondents used dimethoate and 2.50 per cent respondents were used phosphomidon.

**Table 6.** Distribution of the respondents according to application of pesticide in turmeric

S. No.	Pesticide	Respondents					
		Beneficiaries		Non-beneficiaries		Total	
		F	%	F	%	F	%
1	Chloropyriphos	62	38.75	48	30.00	110	34.37
2	Dimethoate	20	12.50	7	4.37	27	8.43
3	Phosphomidon	8	5.00	0	0.00	8	2.50

F – Frequency, % - percentage

In case of beneficiaries, 38.75 per cent of the respondents used chloropyriphos, followed by 12.50 per cent respondents used dimethoate and 5.00 per cent respondents used phosphomidon.

Similarly, in case of non-beneficiaries, 30.00 per cent of the respondents used chloropyriphos and 4.37 per cent respondents used dimethoate.

Thus, it can be concluded that majority of the beneficiaries and non-beneficiaries were using chloropyriphos for insect-pest control.

#### Disease control in turmeric

The data regarding distribution of the respondents according to application of fungicide in turmeric are

presented in Table 7 indicates that out of total, 21.25 per cent of the respondents had used carbomdenzim, whereas 7.81 per cent respondents used mancozeb and 5.00 per cent respondents used hexaconazol.

**Table 7.** Distribution of the respondents according to application of fungicide in turmeric

S. No.	Fungicide	Respondents					
		Beneficiaries		Non-beneficiaries		Total	
		F	%	F	%	F	%
1	Carbondenzim	32	20.00	36	22.50	68	21.25
2	Mancozeb	20	12.50	5	3.12	25	7.81
3	Hexaconazol	16	10.00	0	0.00	16	5.00

F – Frequency, % - percentage

In case of beneficiaries, 20.00 per cent of the respondents had used carbondenzim, followed by 12.50 per cent used mancozeb and 10.00 per cent used hexaconazol.

Similarly, in case of non-beneficiaries, 22.50 per cent of the respondents had used carbondenzim and 3.12 per cent respondents used mancozeb.

It can be concluded that the majority of the beneficiaries and non-beneficiaries were used carbondenzim for disease control.

#### CONCLUSION

The findings of the study most of the respondents (46.88%) were sowing roma variety. About 57.50 per cent of the respondents had adopted below recommended seed rate up to 18q/ha. About 10.31 per cent of the respondents used mancozeb for seed treatment. About 56.56 per cent respondents used below recommended dose of nitrogenous fertilizers up to 120 kg/ha. Whereas 62.50 per cent of the respondents used below recommended dose of phosphoric fertilizers and 69.06 per cent respondents used below recommended dose of potassium fertilizers up to 100 kg/ha. As regards to application of herbicide 4.68 per cent of the respondents used pendimethelin. With respect to application of pesticide 34.37 per cent of the respondents were used chloropyriphos. As for as application of fungicide for disease control out of total 21.25 per cent of the respondents were used carbomdenzim.

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