

Periodic Research

Adoption of improved cultivation practices of turmeric by farmers



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Abstract

The study was conducted in Lonar and Mehakar tahsils of Buldana district of Maharashtra state. The sample constituted 90 Turmeric farmers. Finding revealed that 48.89 per cent of the respondent turmeric growers were in the medium age group of 36 to 50 years, while, 40 per cent of the turmeric growers had completed high school level of education, The 56.67 per cent of the turmeric growers were observed in medium level of adoption, whereas, 22.22 per cent of them observed in low level of adoption and 21.11 per cent in high adoption level. The selected variables that is education, land holding, annual income, area under turmeric cultivation, source of information, extension contact, risk preference, irrigation facility, market orientation and productivity has positively and significantly correlated with adoption of improved cultivation practices of turmeric by the farmer. The variables like age and subscription for farm literature did not show any relation with adoption by turmeric growers.

Keyword: Turmeric growers, Adoption,

Introduction

Turmeric (*Curcuma longa* L.) is a herbaceous perennial plant growing up to the height of 60 – 90 cm with short stem and native of India south Asia particularly India. It belongs to family Zingiberaceae. The plant is propagated from rhizomes. The leaves are long, broad lanceolate and bright green. The flowers are pale yellow and born on dense spikes. The pseudo stem are shorter than leaves. The rhizomes were ready for harvesting about 7 to 9 months after plants.

As a medicine turmeric has been used in Ayurvedic system of medicine in India from times immemorial. It is claimed to be a stomachic tonic, blood purifier, antiseptic, antacid, antiperiodic and carminative. It is used medically for extended application and taken internally as a stimulant. It also used in cosmetic industries. In India companies like Godrej, Vicco are engaged in manufacturing different new products from turmeric like soaps, antiseptics, cosmetics, etc. Turmeric or Haldi powder boiled in milk along with small quantity of black papper may be taken two-three times a day for sore throat, cough, cold and other acute respiratory infections. Further, clean white cloth dyed in turmeric and dried in sun can be used for wiping sore eyes thus, cures eye infection. Further it is also regarded by the Hindus as sacred item for use in ceremonial and religious function. A few years ago, India got the patent of turmeric due to strong evidences, ancient literature and references available with our country about the turmeric.

In the year 2000-2001 India produced 3726 thousand tones of turmeric and in 2009-10 the production was 4016 thousand tones (The Hindu survey of agriculture 2010). Maharashtra is also one of the important states in turmeric production. In the maharashtra about 113.60 thousand ha of cultivation area under turmeric crop and produce 96.60 thousand tones of turmeric. Looking towards increase in area under turmeric present is carried out.

Aim of Study

1. To study the adoption of improved cultivation practices of Turmeric by the farmers.
2. To study the relationship between profile of the farmers and adoption of improved cultivation practices of Turmeric.

Variables

Independent Variables – Age, Education, Land holding, Annual income, Area under turmeric cultivation, Source of information, Extension contact, Risk preference, Irrigation facility, Subscription of farm literature, market orientation and productivity.

Dependent Variable - Adoption

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Tools

a) Selection of panchayat samities

The purposive selection of two panchayat samities will be made on the basis of large area under Turmeric cultivation in the Buldana district.

b) Selection of villages

The list of turmeric growing villages of Lonar and Mehakar tahsil was obtained from Taluka Agriculture Officer. There are 96 and 110 villages in Lonar and Mehakar tahsil respectively. The area under turmeric cultivation in Lonar and Mehakar Tahasil were 120 ha and 100 ha. The out of these, 5 villages from Lonar and 5 villages from Mehakar tahsil i.e. total 10 villages were selected, having larger area under turmeric cultivation.

c) Selection of respondents

List of Turmeric growers with 3-4 years old field was obtained from Taluka Agriculture Office (TAO) under study of the Tahasil. Ten respondents from each village were selected purposively. Thus, total 90 respondents were constituted a sample for the study.

d) Collection of Data

The data was collected by administering the pretested interview schedule to the respondent turmeric growers. The questions and statements were asked in local language i.e. Marathi. The respondent turmeric growers were personally interviewed by the investigator which enabled him to get first hand information and an opportunity to observe the respondents personality. It was made sure that the questions correctly understood by the respondent turmeric growers by repeating questions whenever necessary. The researcher attempted to contact the respondents at home as well as at their farms during their convenient time to get information. Friendly atmosphere was maintained during the interview to see that respondents were at ease and expressed their opinions fairly and frankly.

e) Statistical Tools Used for

Following statistical techniques were used in the present study for analysis of data and drawing of conclusion.

1. Arithmetic mean(\bar{X})
2. Standard deviation (S.D)
3. Coefficient of correlation (r)
4. Multiple regression analysis (b)

Results and Discussion

Adoption level of respondents

Table1:
Distributions of respondents according to their adoption of turmeric cultivation practices by farmer..

Sr. no	Statement	Respondent (n = 90)		
		Complete adoption	Partial adoption	Non adoption
		Freq. (%)	Freq. (%)	Freq. (%)

1	Preparatory tillage operations carried out by you in field.(ploughing, cloud crushing, harrowing,leveling)	90 (100)	0 (0)	0 (0)
2	Variety of turmeric crop are grown and area under each of them. (Waygoan, selam, Phule swarupa, rajapuri, krushna)	19 (21.12)	71 (78.88)	0 (0)
3	Quantity of seedling required per hectare(2250--2500)	43 (47.78)	28 (31.12)	19 (21.10)
4	The spacing did you sow turmeric. On how many hectares.(22.5-30 cm)	30 (33.33)	60 (66.67)	0 (0)
5	chemical used for seed treatment of turmeric and Quantity of total seed you have treated with this chemical.(dithane M-45 0.3%,and ekalux 0.2%)	15 (16.67)	63 (70.00)	12 (13.33)
6	Intercultural operation did you undertaken. (earthing up, hoeing, weeding, irrigation, intercropping)	70 (77.78)	0 (0)	20 (22.22)
7	Quantity of manure did you apply to turmeric crop per hectare.(FYM 40 tonnes/ha)	19 (21.11)	71 (78.79)	0 (0)
8	Quantity of fertilizer did you apply to turmeric crop per hectare. (200 N:100 p:100 k)	22 (24.44)	50 (55.56)	18 (20.00)
9	Weedicide is used by you for control of weed in turmeric. (Pendimethalin 1.5 kg/ha, oxyfluorfen)	30 (33.33)	40 (44.45)	20 (22.22)
10	Number of irrigation did you provide to turmeric crop and irrigation interval.(15-40Irrigation)(8 to 10 days interval)	34 (37.78)	42 (46.67)	14 (15.56)
11	Did you undertake plant protection measures? If yes, which chemical you have used for the control of following pest and disease. Stat its quantity.(Ridomil 0.25%, mancozeb 0.3%,Hinsan 0.1%, Nimcake 2 tonnes/ha)	09 (10.00)	37 (41.11)	44 (48.89)
12	At what stage did you Harvest the turmeric crop	07 (7.78)	10 (11.11)	73 (81.11)

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The adoption of improved cultivation practices of turmeric by the respondents was ascertained practice wise, and the same have been reported in Table 1. It is evident from in Table 1, that the majority of respondents completely adopted some improved cultivation practices like preparatory tillage operation in the field after harvest of previous crop (100 %), the intercultural operation (77.78%), sowing the quantity of seedling in filed (47.78%), application of irrigation (37.78%), spacing and weedicide (33.33%) and quantity of fertilizer (24.44%).

However, it was observed that majority of the respondents partial adopted the improved cultivation practices like variety and area of each them sown in field (78.88%), quantity of manure apply in field (78.79%), use seed treatment apply (70.00%), spacing and how many hector (66.67%), quantity of fertilizer (55.56%), number of irrigation in crop and irrigation interval (46.67%), weedicide used (44.45%) and plant protection measure (41.11%).

It was also found that majority of respondents had not adopted the integrated pest management practices like harvesting the turmeric crop (81.11%), plant protection measures (48.89%), intercultural operations and weedicide used (22.22%) and quantity of seedling required per hectare (21.10%).

Table 2:
Distribution of the respondents according to their adoption level.

Sr. No.	Category	Respondents(n =90)	
		Frequency	Percentage
1	Low	20	22.22
2	Medium	51	56.67
3	High	19	21.11
	Total	90	100.0

Table 2 revealed that two third of the farmers (56.67%) were included under medium category of adoption level of improved cultivation practices, followed by low level of adoption (22.22%) and (21.11 %) farmers were found in high level of adoption of improved cultivation practices of turmeric. It could be inferred from the above findings that two third of the respondents were in medium level of adoption of improved cultivation practices of turmeric. These finding is similar to Salame (2000), Gaikwad (2005) and Karpagam (2006).

Table 3:
Coefficient of correlation of characteristics of the respondents with their adoption

Sr. No	Variables	"r" values
1	Age	0.12209 NS
2	Education	0.375432**
3	Land holding	0.258986**
4	Annual income	0.211724*
5	Area under turmeric cultivation	0.308388**

6	Source of information	0.351759**
7	Extension contact	0.481571**
8	Risk preference	0.223094*
9	Irrigation facility	0.260315**
10	Subscription for farm literature	0.128017 NS
11	Market orientation	0.380579**
12	Productivity	0.284289**

It could be seen from Table 3 among the selected variables like annual income, risk preference has positively and significantly correlated with adoption at 0.05 level of probability. Education, land holding, area under turmeric cultivation, source of information, extension contact, irrigation facility, market orientation and productivity has positively and significantly correlated with adoption at 0.01 level of probability. The variables like age and subscription for farm literature did not show any significant relation with adoption by turmeric growers.

.. Table 4:
The multiple regression analysis of independent variables with adoption of improved cultivation practices in turmeric by farmer.

S N	Variables	'b' value	S. E	't' value
1	Age	-0.03687	0.195683	-0.1884
2	Education	0.627617	0.577501	1.086781
3	Land holding	0.525026	0.565249	0.928841
4	Annual income	1.34E-05	1.46E-05	0.921682
5	Area under turmeric cultivation	1.906302	2.018167	0.944571
6	Source of information	0.659738	0.462284	1.427128
7	Extension contact	1.435178	0.569474	2.52018*
8	Risk preference	-0.138	0.314896	-0.43825
9	Irrigation fa	0.565091	0.750253	0.7532
10	Subscription farm literature	0.547044	1.322863	0.41353
11	Market orientation	0.562077	0.328644	1.710291*

12	Productivity	0.767128	0.479152	1.601013
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The multiple regression analysis of personal, situational, communicational psychological characteristics with their adoption have been depicted in Table 4

It is evident from the data in the Table 23 that multiple regression analysis (R^2) was 0.40941. It means that 40.94 percent of total variation in the adoption level was explained by the 12 independent selected variables, selected for study.

The critical look at Table 23 further revealed that Market orientation ($t=1.710291$) had influence on the adoption at 0.05 level of probability. Whereas, Extension contact ($t=2.52018$) had influence on the adoption at 0.01 level of probability. Whereas, other variable not influence on the adoption.

Conclusion:

The turmeric growers had medium level of exposed to various sources of information about recommended onion cultivation practices, so as to increase the awareness about turmeric cultivation practices, extension worker should make efforts to expose the turmeric grower to the different information sources and create an urge in the minds of farmers to acquire knowledge from them.

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