



## Adoption of paddy growers about recommended technology

ANITA S. DESHMUKH AND SONIA B. TAMGADGE

See end of the article for authors' affiliations

Correspondence to :

ANITA S. DESHMUKH  
Department of  
Extension Education  
Dr. Panjabrao,  
Deshmukh Krishi  
Vidyapeeth, AKOLA  
(M.S.) INDIA

### ABSTRACT

The study was conducted in Armori Panchayat Samiti of Gadchiroli district of Eastern Vidarbha. For the present study, 150 farmers were selected from 10 villages by using random sampling method. The main objective of study was to know the extent of knowledge and adoption of recommended technology among the paddy growers. The data were collected by personal interview with the help of pre-tested and well structured interview schedule, which were subjected to appropriate statistical analysis. The findings of the present investigation indicated that majority of the paddy growers had medium level of scientific orientation and economic motivation. Over half of the respondents paddy cultivation possessed high level of knowledge about recommended paddy cultivation technology. The respondents possessed cent per cent knowledge were about cross ploughing, leveling of field, weeding, and control of stem borer by use of endosulphan, harvesting and threshing period of paddy. Whereas, majority of the respondents had poor knowledge about disease resistant varieties, seed treatment, use of Trichogramma, BGA and micro-nutrient of paddy.

Deshmukh, Anita S. and Tamgadge, Sonia, A. (2011). Adoption of paddy growers about recommended technology. *Agric. Update*, 6(1): 81-84.

### INTRODUCTION

Paddy (*Oryza sativa* L.) is grown on 150 million hectares which is about 11 per cent of the world's cultivated land in countries. In major ecosystems at altitude ranging from more than 3000 meters mean sea level in Nepal and Bhutan to 3000 meters below sea level in south India State of Kerala. In India archeological findings from the Ganga valley, Koldihwah (Neolithic) site suggest that paddy cultivation dates back to 5000 B.C. Ancient Indian scriptures the "Yajurveda", the "Atharva veda" and "smritis" make mention about paddy as not just as cereal for consumption as food but also as sacred offering to the duties especially during religious and social functions. However, the general consensus is that domestication of paddy took place independently. In China, India and Indonesia has been given rice to Asia's three varietal groups Japonica, Indica and Javanica. The impact of green revolution in paddy began in the early sixties, attributed to the yield increase per unit area in India is mainly due to the development of Semi dwarf paddy varieties and crop management practices. Much of our success in rice production over

the past 25 years has been largely based in combination of modern varieties, irrigation and large scale use of nitrogenous fertilizer where irrigation facilities area available.

Significant yield could be obtained at immense risk of degradation of the soil structure, soil texture, soil microbial population and fertility status due to indiscriminate use of chemical fertilizers. India became self-sufficient in paddy in 1977 that was achieved through a combination of increasing the area under cultivation and increasing cropping intensity with the adoption of modern varieties. At the present state of affairs, especially in Vidarbha region, the paddy growers are facing number of constraints. The various government and non-governmental organization have noticed that paddy growers are facing problems in number of areas like credit facilities, availability of seed, material and equipment. The new farm technology is essentially a seed, irrigation, fertilizer and pesticides technology.

Rice is grown in tropical and subtropical countries of the world. The Eastern Vidarbha consisting of Bhandara, Gondia, Chandrapur,

**Key words :**  
Adoption, Paddy  
cultivation.

**Received:**  
**October, 2010;**  
**Revised:**  
**November, 2010;**  
**Accepted :**  
**December, 2010**

Gadchiroli and some part of Nagpur district is famous for specialized farming with rice as a major crop and about 80 per cent gross cropped area in this region is under paddy cultivation in other words rice is a major source of food and income in eastern part of Vidarbha. Gadchiroli district in Vidarbha occupies 1.45 lakh hectares of land under paddy cultivation with annual production of 1.25 lakh metric tones (Anonymous, 2007)

## METHODOLOGY

The present study was carried out in Armori Panchayat Samiti, Gadchiroli district of Maharashtra State. Armori Panchayat Samiti was considered purposively because the area under rice cultivation was relatively higher as compared to other Panchaya Samities of Gadchiroli district. Exploratory research design of social research was found to be appropriate. Ten villages having more area under rice cultivation during the year 2006-07 were identified. The list of farmers growing rice crop continuously for the last five years in the selected villages were prepared. Village wise list a sample of 150 rice growers were drawn by disproportionate method of random sampling as the respondents for the study. The data were gathered through personal interview with the selected paddy growers with the help of an interview schedules. The independent variables were selected as age, education, land holding, area under paddy, annual

income, socio-economic status, social participation, source of information, scientific orientation and economic motivation. The statistical tools namely mean, standard deviation, co-efficient, of correlation and co-efficient of regression were adapted to test the results (significantly).

## RESULTS AND DISCUSSION

Majority of the respondents (90.67%) had low level of adoption of recommended technology of paddy crop (Table 1). As regards to practice wise adoption (Table 2), cent per cent of the respondents adopted complete adoption of time of first (96.67%) and second ploughing (80.00%), cross ploughing (100.00%), leveling (100.00%), age of seedling for transporting (93.33%), sowing method (96.00%), water level in field (99.33%), removal of water before harvesting (100.00%), first weeding (98.67%), second weeding (92.00%) and time of harvesting and threshing (100.00%). While majority of the respondents had not the adoption of hybrid seed (80.00%), salt solution (93.34%) chemical seed treatment (92.00%), third dose of chemical fertilizers (80.00%), use of urea + DAP brickets (96.67%), use of blue green algae (100.00%), dose of micronutrient (100.00%), rope dragging for the control of armyworm (100.00%), removal of water for control of jassids (100.00%), adding water for control of armyworm(93.34%),use of Trichogramma (100.00%), application of 2% methyl parathion for armyworm

**Table 1: Distribution of the respondent according to their practices wise adoption of recommended technology of paddy crop**

Sr. No.	Recommended technology of paddy crop	Respondent (n=180)					
		Complete		Partial		No adoption	
		Freq.	%	Freq.	%	Freq.	%
<b>Preparatory tillage</b>							
1.	Time of first ploughing (immediate after harrowing of previous crop)	145	96.67	5	3.33	0	0.00
2.	Collection and burning stubbles	108	72.00	22	14.67	20	13.33
3.	Time of second ploughing	120	80.00	30	20.00	0	0.00
4.	Recommended dose of manure (FYM 25-30 Carrt load/ha.	95	63.33	50	33.33	5	3.34
<b>Recommended varieties</b>							
5.	Short duration varieties (Sakoli- 6 and Sindevahi)	89	59.33	61	40.67	0	0.00
6.	Medium duration varieties (Sindevahi 75, PKV- Ganesh, Shindewahi-4, PKV-HMT, Sindevahi-2001, Sindevahi-5 and Sakoli)	78	52.00	22	14.67	50	33.33
7.	Long duration varieties (Sindevahi-5 and Sakoli-8)	50	33.33	59	39.33	41	27.34
8.	Scented varieties (Sakoli-7, PKV- Makrand)	30	20.00	20	13.33	100	66.67
9.	Hybrid varieties (Sahyandri)	22	14.67	8	5.55	120	80.00
<b>Seed</b>							
10.	Seed rate of paddy (35-40 kg/ha)	120	68.00	38	25.33	10	6.67

Table 1 Contd

<b>Seed treatment</b>							
11.	Salt solution (3% brine solution)	2	1.33	8	5.33	140	93.34
12.	Chemical treatment (3 g thiram/kg seed)	5	3.33	7	4.67	138	92.00
<b>Seed bed preparation</b>							
13.	Size of raised bed preparation	101	67.33	19	12.67	30	20.00
14.	Recommended dose of manure and fertilizer to raise bed (300 kg FYM and 1 kg urea of 10 kg phosphate)	52	34.67	53	35.33	45	30.00
15.	Spacing on raised bed (7-8 x 1-2 cm)	20	13.33	30	20.00	100	66.67
16.	Time of sowing in raised bed (June-July)	120	68.00	18	12.00	30	20.00
<b>Pudding operation</b>							
17.	Cross ploughing (Wooden plough power tiller/ tractor)	150	100.00	0	0.00	0	0.00
18.	Leveling of field	150	100.00	0	0.00	0	0.00
<b>Transplanting</b>							
19.	Age of seedling (25-30 days old)	140	93.33	10	6.67	0	0.00
20.	Seedling spacing (20X 10 cm)	51	34.00	50	3.33	49	32.67
21.	Sowing method (2-3 seedling)	144	96.00	6	4.00	0	0.00
<b>Integrated nutrient management</b>							
22.	Recommended dose of fertilizer (100:50:50)	52	34.67	53	35.33	45	30.00
23.	First dose of chemical fertilizer at puddling (50:50:50)	48	32.00	12	8.00	90	60.00
24.	Second dose of chemical fertilizer (N 25 kg at sprouting)	20	13.33	30	20.00	100	66.67
25.	Third dose of chemical fertilizer (N-25 kg before ear heard formation)	19	12.67	11	7.33	120	80.00
26.	Use of urea + DAP bricks	0	0.00	5	3.33	145	96.67
27.	Use of blue green algae	0	0.00	0	0.00	150	100.00
28.	Dose of micronutrient (0.5% Zinc sulphate + 0.25% calcium)	0	0.00	0	0.00	150	100.00
<b>Water management</b>							
29.	Water level in field (at sowing 205 cm after sowing 5 cm and later 10 cm)	149	99.33	1	0.67	0	0.00
30.	Removal of water before harvesting (10 days before harvesting)	150	100.00	0	0.00	0	0.00
<b>Intercultural operation</b>							
31.	Use of weedicides (4 lit buta clore/500 ml of water)	2	1.33	50	33.33	98	65.33
32.	First weeding (15 days after planting)	148	98.67	2	1.33	0	0.00
33.	Second weeding (45 days after planting)	138	92.00	12	8.00	0	0.00
<b>Integrated pest management</b>							
34.	Use of resistant varieties	2	1.33	48	32.00	100	66.67
35.	Seed treatment (3 g thiram/ kg of seed)	5	3.33	5	3.33	140	93.34
36.	Weed free bunds	35	23.33	15	10.00	100	66.67
37.	Rope dragging over the crop for control of army worm	0	0.00	0	0.00	150	100.00
38.	Control of jassids (removal of water after 3-4 days)	0	0.00	0	0.00	150	100.00
39.	Control of army worm (adding water in field)	5	3.33	5	3.33	140	
40.	Conservation and protection of protectors	0	0.00	0	0.00	150	100.00
41.	Use of Trichogramma	0	0.00	0	0.00	150	100.00
42.	Destroying diseased plant	59	39.33	31	20.67	60	
43.	Control of rodents	30	20.00	20	13.33	100	66.67

Table 1 Contd.....

<b>Chemical control</b>							
<b>Pest</b>							
44.	For stem borer ( Endosulphan 17 ml)	103	68.67	17	11.33	30	20.00
45.	For paddy gallfly (10% Phorate)	2	1.33	2	1.33	146	97.34
46.	For jassid (Malathion 50%)	0	0.00	0	0.00	150	100.00
47.	Army worm (Methyl parathion 2%)	0	0.00	0	0.00	150	100.00
<b>Disease</b>							
48.	Blast of paddy (3 g Thiam+ 3% brine solution)	0	0.00	0	0.00	150	100.00
49.	Smut (Copper oxichloride 25 g + Steptocyclide 0.5 g + 10 l of water)	0	0.00	0	0.00	150	100.00
<b>Harvesting</b>							
50.	Harvesting time	150	100.00	0	0.00	0	0.00
51.	Time of threshing	150	100.00	0	0.00	0	0.00

**Table 2: Distribution of respondent according to their level of adoption (n=150)**

Sr. No	Knowledge level	Respondents	
		Number	Percentage
1.	Low	136	90.67
2.	Medium	13	8.67
3.	High	1	0.66
		150	100.00

(100.00%), application 3% brine solution for blast of paddy (100.00%), copper oxychloride 25 g + steptocycline 0.5 g + 10 l of water for the control of smut (100.00%). Similar type of investigations were carried out by Choudhari and Mishra (2001) and Singh (2005) in rice production technology and Shinde *et al.* (2000) in indigenous agricultural practices in general.

Authors' affiliations:

**SONIYA TAMGADGE, M.S.S.C.A.,** Seed Testing Laboratory, AKOLA (M.S.) INDIA

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