



# STUDY ON KNOWLEDGE LEVEL OF THE TRIBAL FARMERS REGARDING SEED PRODUCTION AND MANAGEMENT IN SURGUJA AND SURAJPUR DISTRICTS OF CHHATTISGARH, INDIA

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## Abstract

The present study was undertaken in Surguja and Surajpur districts of Chhattisgarh to know the knowledge level of tribal farmers regarding management and production of seeds. 120 tribal 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. The study revealed that majority of respondents were belonged to middle age group (36 to 55 years), educated up to primary school level and had medium family size with 6 to 10 members. Most of the respondents were have the membership of one organization and medium farming experience (16-30 years). Regarding land holdings most of respondents (41.67%) had 2.1 to 4 ha of land holdings belongs medium category farmers. In various seed production and management practices respondents had high knowledge level *i.e.* winnowing and cleaning of seed, harvesting, threshing and seed storage structure, field preparation, moisture control, grading and seed selection with 97.50, 92.5, 90.83, 81.67, 37.50, 33.33, and 21.67 per cent, respectively. The overall extent of knowledge level of the farmers was 60.32 per cent and gap of knowledge was 39.68 per cent.

**Key words :** Knowledge level, seed production, seed management, tribal, Chhattisgarh.

## Introduction

Knowledge about innovation may be an important factor affecting the adoption behavior of farmers. Bloom (1979) defined knowledge as those behavior and best situation, which emphasized the remembering either by recognition or recall of ideas, materials on phenomenon. Operationally knowledge was used in this study as actual knowledge of farmers regarding selected practices of the seed management and production practices. Seed is the basic, vital and central input in agriculture, which plays a key role in deciding the performance of all farming systems and most of the other agricultural inputs like fertilizer, agro-chemicals, water etc.

Seed, the vehicle for delivering the benefits of technology, is influencing the growth and sustainability of Indian agriculture. Seeds are the pillars of our livelihood and food security. Any policy and regulatory measures or technological advances that affect seeds will have a profound effect on the livelihood of mankind worldwide. Therefore, it's very much important and required that

farmer had knowledgeable about the seed management and production practices. In India, there are two types of seed systems: the formal system, which is market-oriented and is developed by the public and/or private sectors, and the family or community production system which is based mainly on seed self-provisioning exchanges and gifts among neighbors and the informal market.

Objective of the study is to confined knowledge level of the farmers in production and management of seeds.

## Research Methodology

Chhattisgarh State has 27 districts *i.e.*, Bijapur, Sukma, Dantewada, (Dakshin Bastar), Bastar (Jagdalpur), Kondagaon, Narayanpur, Kanker (Uttar Bastar), Kawardha, Rajnandgaon, Balod, Durg, Bemetara, Dhamtari, Gariyaband, Raipur, Baloda Bazar, Mahasamund, Bilaspur, Mungeli, Korba, Janjgir-Champa, Jashpur Raigarh, Koriya, Surajpur, Surguja (Ambikapur), Balrampur. Out of these, the study was conducted in Surguja and Surajpur district of northern hills agro-climatic zone of Chhattisgarh State during the year 2014-2015.

Out of total blocks of both selected districts, 04 blocks were selected for study. Total 120 farmers were selected randomly from 8 selected villages with purpose to collect the data. The data were collected personally with help of interview schedule developed for the collection of data. Collected data were analyzed with the help of suitable statistical methods.

## Results and Discussion

### Age of the respondents

The findings on age of the respondents are presented in table 1. The data reveals that the most (46.67%) of the farmers belonged to middle age and 36.66 per cent were of young age and 16.67 per cent belonged to old age. This result indicate that the major group of farmers (middle age group) were having capacity to learn and adopt seed management and replacement practices if educated properly by appropriate informal institution.

These findings are similar to the findings of Bishaw *et al.* (2010). They identified that the average age of household head was 41 years with a range from 18 up to 81 years. More than half of the farmers were below the average age, indicating the involvement of younger generation in farming. A mere 7 per cent were over 65 years of age and were often assisted by children. Adetumbi *et al.* (2010) found that the majority of the respondents (82.90%) aged between 41 and 60 years, while 17.10 per cent were between 21 to 40 years of age with an average age of 49.8 years.

### Education of the respondents

The data on education of respondents presented in table 1 reveals that about 40 per cent of respondents had up to primary school level of education, 20.83 per cent farmers had middle school, 12.50 per cent high school, 10 per cent higher secondary, 9.17 per cent illiterate, and 7.50 per cent respondents were graduate and above education. Beshir (2013) found that the education is presupposed to positively affect improved variety adoption since an educated person was expected to seek, analyze and utilize information on a new technology.

### Family size

The data regarding family size given in table 1 indicates that 51.67 per cent of the respondents were having medium size of family (6 to 10 members), followed by 42.50 per cent respondents had small family size (up to 5 members) and only 5.83 per cent of the respondents had large size of family (above 10 members). These findings are similar to the findings of Kumar and Rathod (2013).

### Farming experience

The data regarding farming experience presented in table 1 shows that the most of respondents (53.33%) were having 16 to 30 years of farming experience followed by 44.17 per cent were having up to 15 years of farming experience, and only 2.50 per cent of respondents having above 30 years of farming experience. These findings are similar to the findings of Oyekale *et al.* (2009)

### Social participation

The data regarding social participation given in table 1 shows that the most of the respondents (55%) were member of one organization, followed by 24.17 per cent of the respondents had not member of any organization and 20.83 per cent of respondents were more than one organization. Social participation gives an idea about the respondent participation in social activities in society. Dubey (2008) reported the maximum number of respondents (46.92%) having membership in one organization followed by 34.62 per cent of respondents were having no membership in any organization, whereas 11.53 per cent respondents were having membership in more than one organization. Only 6.93 per cent respondents were belonging to executive office bearer category.

### Extension participation

The data regarding extension participation given in table 1 shows that maximum respondents (57.5%) had participated in discussion with extension agent, followed by 25 per cent of respondents watch and heard agri-based programme on TV/Radio and participated in farmer's fair, 20.83 per cent of farmers participated in extension meeting and only 1.67 per cent of respondents participated in farmer's day programme and read extension publication.

### Size of land holding

The details about land holdings of the respondents are given in table 2. The data regarding land holdings indicates that most of respondents (41.67%) had 2.1 to 4 ha of land holdings belongs medium category farmers, followed by 24.17 per cent had above 4 ha land holding (big farmers) and 17.5 per cent had small farmers with holding size between 1.1 to 2 ha. About 16.67 per cent of respondents were found under marginal farmers category with land holding up to 1 ha. Similar findings reported by Ghimire *et al.* (2012) and Tura *et al.* (2010).

### Knowledge regarding seed production and management

The knowledge of the respondents regarding selected seed management practices is presented in table 3. The

**Table 1 :** Distribution of the respondents according to their socio-personal characteristics.

S. no.	Particulars	Frequency	Percentage
<b>1.</b>	<b>Age</b>		
	• Young (Up to 35 years)	44	36.67
	• Middle (36 to 50 years)	56	46.67
	• Old (Above 50 years)	20	16.67
<b>2</b>	<b>Education</b>		
	• Illiterate	11	9.17
	• Primary (Up to 5th class)	48	40.00
	• Middle (6th to 8th class)	25	20.83
	• High School (9th to 10th class)	15	12.50
	• Higher Secondary (11th to 12th class)	12	10.00
	• Graduate and above	9	7.50
<b>3</b>	<b>Family size</b>		
	• Small (up to 5 members)	51	42.50
	• Medium (6 to 10 members)	62	51.67
	• Large (above 10 members)	7	5.83
<b>4</b>	<b>Farming experience</b>		
	• Less experienced (up to 15 years)	53	44.17
	• Medium Experienced (16-30 years)	64	53.33
	• High experienced (above 30 years)	3	2.50
<b>5</b>	<b>Social participation</b>		
	• No membership	29	24.17
	• Member of one organization	66	55.00
	• Member of more than one organization	25	20.83
<b>6</b>	<b>Extension participation*</b>		
	• Discussion with extension agent	69	57.5
	• Participated in farmer's day programme	2	1.67
	• Participate in extension meeting	25	20.83

Table 1 continued....

**Table 1 continued....**

• Participated in farmer's fair	30	25.00
• Read extension publication	2	1.67
• Watch and hear agri-based programme on TV/Radio	30	25.00

\* Data are based on multiple responses.

**Table 2 :** Distribution of the respondents according to their size of land holding.

Land Holding	Frequency	Percentage
Marginal farmers (up to 1 ha)	20	16.67
Small farmers (1.1-2ha)	21	17.5
Medium (2.1-4 ha)	50	41.67
Big farmers (above 4 ha)	29	24.17

data reveals that in various management practices respondents had highest knowledge viz. winnowing and cleaning of seed (97.50), harvesting (92.5%), threshing, seed storage structure (90.83%), field preparation (81.67%), moisture control (37.50%), grading (33.33%) seed selection (21.67%), seed rate (17.5%), weeding, insect pest management (13.33%), irrigation management (12.5%), fertilizers and manure (8.33%), seed treatment (6.67%) and storage insect pest treatment (2.50%).

Medium knowledge of the respondents in management practices i.e. seed selection (66.67%), seed treatment (81.67%), field preparation (16.66%), seed rate (65%), fertilizers and manure application (74.17%), irrigation management (47.5%), weeding (84.17%), insect pest management (9.17%), harvesting (7.5%), Threshing, winnowing and cleaning of seed (2.50%), Seed storage structure (6.67%), storage insect pest control (73.33%), Moisture control (60.83%) and grading (60.00%), respectively.

About (11.67%) in seed selection and seed treatment, field preparation (1.67%) seed rate (30%), fertilizers and manure (17.5%), irrigation management (40%), weeding and seed storage structure (2.5%), insect pest management (77.5%), storage insect pest control (24.17%), moisture control (1.67%) and grading (6.67%) respondents had nill knowledge.

**Extent of knowledge regarding seed production and management**

The extent of knowledge regarding seed management and production is presented in table 4 and fig. 1. The data reveals that the majority of the respondents 55 per cent had extent of knowledge in seed selection.

**Table 3 :** Distribution of respondents according to their knowledge regarding seed management and production.

S. no.	Particulars	Knowledge level		
		Full	Partial	Nil
1	Seed selection	26(21.67)	80(66.67)	14(11.67)
2	Seed treatment	8(6.67)	98(81.67)	14(11.67)
3	Field preparation	98(81.67)	20(16.66)	2(1.67)
4	Seed rate	6(5.00)	78(65.0)	36(30.0)
5	Fertilizers and manure	10(8.33)	89(74.17)	21(17.5)
6	Irrigation management	15(12.5)	57(47.5)	48(40.0)
7	Weeding	16(13.33)	101(84.17)	3(2.50)
8	Insect pest management	16(13.33)	11(9.17)	93(77.5)
9	Harvesting	111(92.5)	9(7.5)	0(0.00)
10	Threshing, winnowing and cleaning of seed	117(97.50)	3(2.50)	0(0.00)
11	Seed storage structure	109(90.83)	8(6.67)	3(2.50)
12	Storage insect pest control	3(2.50)	88(73.33)	29(24.17)
13	Moisture control	45(37.50)	73(60.83)	2(1.67)
14	Grading	40(33.33)	72(60.00)	8(6.67)

**Note:** Figures in the parentheses are percentages.

**Table 4 :** Extent of knowledge about seed production and management practices.

S. no.	Practices of seed management	Total obtainable score	Total obtained score	Extent of knowledge (%)	Knowledge gap (%)
1	Seed selection	240	132	55.0	45.0
2	Seed treatment	240	114	47.5	52.5
3	Field preparation	240	216	90.0	10.0
4	Seed rate	240	90	37.5	62.5
5	Fertilizers and manure	240	109	45.47	54.53
6	Irrigation management	240	87	36.25	63.75
7	Weeding	240	133	55.47	44.53
8	Insect pest management	240	43	17.97	82.03
9	Harvesting	240	231	96.25	3.75
10	Threshing, winnowing and cleaning of seed	240	237	98.75	1.25
11	Seed storage structure	240	226	94.17	5.83
12	Storage insect pest control	240	94	39.17	60.83
13	Moisture control	240	163	67.97	32.03
14	Grading	240	152	63.33	36.67
	Overall	3360	2027	60.32	39.68

This was followed by seed treatment (47.5%), field preparation (90%), seed rate (37.5%), fertilizers and manure application (45.47%), irrigation management (36.25%), weeding (55.47%), insect pest management (17.97%), harvesting (96.25%), threshing winnowing, and cleaning of seeds (98.75%), storage structure (94.17%), storage insect pest control (39.17%), moisture control (67.97%) and grading 63.33 per cent. The overall extent of knowledge was 60.32 per cent and gap of knowledge

was 39.68 per cent.

### Conclusion

In the light of the above findings, it may be concluded that, there is many differences shown in knowledge of the farmers in different selected practices of seed production and management. The respondents had high knowledge level in winnowing and cleaning of seed, harvesting, threshing and seed storage structure, field

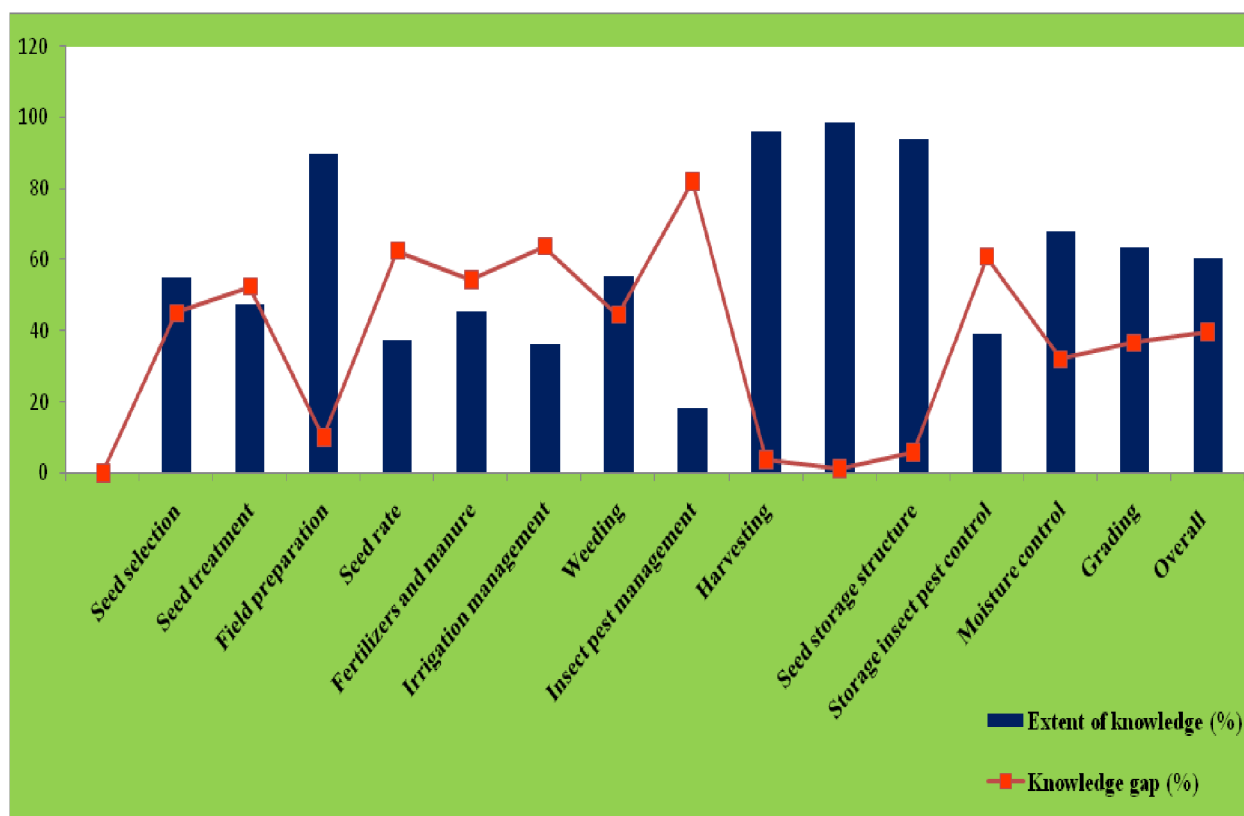


Fig. 1 : Extent of knowledge and knowledge gap of the farmers in seed management practice.

preparation, moisture control and in other remaining practices farmers had partial and nill knowledge level. The average overall extent of knowledge of the farmers is 60.32 per cent and gap of the knowledge was 39.68 per cent. Therefore it is needed to create awareness and provision technical knowledge through training programmes to improving knowledge level of the farmers about seed management and production.

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