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Virendra Kumar Painkra
Agricultural Extension, DKS
CARS, Bhatapara, IGKV,
Chhattisgarh, India

ML Sharma
Dean, Pt. Kishorilal Shukla
Horticulture College and
Research Station, Rajnandgaon,
IGKV, Chhattisgarh, India

MA Khan
Professor, Department of
Agricultural Extension, CoA,
Raipur, IGKV, Chhattisgarh,
India

Knowledge level about rice varieties

Virendra Kumar Painkra, ML Sharma and MA Khan

Abstract

The study was conducted in Chhattisgarh plains zone, whereas 320 respondents randomly selected for the getting information for assessing knowledge level about rice varieties which was released by Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.), there are a lot of rice varieties notified but only a small no. of rice varieties reached amongst field of farmers. Respondents of Chhattisgarh plain well familiar with Mahamaya rice varieties than 2nd rank comes to Rajeshwari rice varieties. The good performance experienced by the respondents in their field. Respondents had a lack of knowledge which was released in recent year and not demonstrated amongst respondents. Swarna variety of rice still popular amongst respondents and good knowledge noted about Swarna rice variety.

Keywords: Knowledge, IGKV released rice varieties, popular rice

Introduction

Rice (*Oryza sativa* L. is the most important staple food in Asia. More than 90 per cent of the world's rice is grown and consumed in Asia, where 60 per cent of the world's population lives (Guyer *et al.*, 2013). It accounts for 73 per cent of the calorie intake in Bangladesh, 40 per cent in Nepal, and 30 per cent in India. South Asia has about 37 per cent of the world's total rice area and approximately 50 per cent of the rice-growing area in South Asia is rainfed. India released rice varieties from before 1978, and the current status of a total number of released rice varieties are 1481, in which only a few varieties are popular amongst farmers due to its characteristic. All released rice varieties are not well diffused amongst farmers. (<http://seednet.gov.in>, 2017) [7], Indira Gandhi Krishi Vishwavidyalaya is an autonomous non-profit, research and educational organization working for the uplifting of farmers livelihood of Chhattisgarh and it's headquarter is situated in Raipur. Many rice varieties evolved from IGKV, Raipur. First rice variety was Mahamaya which was evolved in 1996 from Asha x Kranti parentage, long bold grain with 45-55q ha⁻¹ average yield. Further year by year research in rice increased and its resulted till 2015 about sixteen rice varieties evolved i.e. Mahamaya, Poornima, Shyamla, Danteshwari, Indira Sugandhit Dhan-1, Bamleshwari, Samleshwari, Jaldubi, Chandrahasini, Indira sona, Indira barani dhan-1, Karma mahsuri, Maheshwari, Durgeshwari, Rajeshwari, Indira aerobic-1 (Sarawagi *et al.*, 2016) [2]

There are a lot of rice varieties released by India, but a few varieties diffused amongst farmers. More than 16 rice varieties released by IGKV but only a small number of varieties reached amongst farmers field. Information is power; it is a vital source for a human being for living a prosperous life on the earth. Information as "all knowledge, ideas, facts, data and imaginative works of the mind, which are communicated formally or informally in any format", After analysis of data, found that information seeking behavior play a great role for the adoption of IGKV released rice varieties credible sources can increase the rate of adoption. Information is the first stage of the adoption process, *i.e.* awareness-interest-decision-trial-adoption (Singh, 2011) [3].

Materials and methods

The study was conducted during the year 2016-18 in the Chhattisgarh plains zone, there are total fifteen districts where four districts *i.e.* Raipur, Rajnandgaon, Dhamtari, Mahasamund were purposively selected because of here maximum newly released rice varieties distributed. Two blocks where maximum rice seed of newly released varieties was distributed will be selected purposively from each selected district to make a total of eight blocks in the sample. Four villages where the maximum seed of newly released varieties was distributed were selected purposively from each selected block, thus total villages were thirty-two. Ten respondents were selected randomly from each selected village, thus total respondents were three hundred twenty. The data were collected through a well structured and pre-tested interview schedule; an interview schedule consisting of various types of questions related to

Corresponding Author:
Virendra Kumar Painkra
Agricultural Extension, DKS
CARS, Bhatapara, IGKV,
Chhattisgarh, India

the objectives of the study was, therefore developed. Initially, the schedule was developed in English and was then translated to the local language *i.e.* Hindi. The schedule was pre-tested and as per the experience gained during pre-testing the language of some of the questions was suitably worded and was made more understandable and clear and the schedule was then finalized. The data were collected by personal interview method by contacting the respondents (farmers) at their home. The respondents did hesitate to give the required information in the beginning. To get the authentic information the help of local leaders, sarpanch, member of gram panchayat, Kisan Mitra, and Rural Agricultural Extension Officers (RAEOs) were sought and the rapport was developed with the respondents.

English and English (1961) [5] defined the knowledge, as a body of understandable information possessed by an individual or by culture.

Rogers (1983) [6] stated that knowledge is of three types namely awareness knowledge, how-to knowledge and principle knowledge. In the present study, awareness knowledge was studied and the study is confined, to the newly released rice varieties by IGKV. Each respondent was asked to answer of questions about listed released rice varieties by IGKV, here these indicators of knowledge were selected *i.e.* developed year, developed by which institution, listen, maturity duration, productivity and last one is their major characteristic. Very small scores obtained by respondents for the first two indicators that are developed year and developed by which institution, so these two indicators removed from the analysis. 3 indicators have taken for the determining the knowledge about IGKV rice varieties, 2 scores were given for full knowledge, 1 score was given for partial knowledge and 0 scores was given for no knowledge about given varieties. The summation of an obtained score for IGKV rice varieties was calculated and used for analysis according to a given formula:

$$KI_i = \frac{\sum O_i}{\sum S_i} \times 100$$

Where,

KI_i = Knowledge index for i^{th} respondent

$\sum O_i$ = Total score obtained by i^{th} respondent

$\sum S_i$ = Maximum obtainable score

Results and discussion

Knowledge of the respondents about IGKV released rice variety

Regarding knowledge of the respondents about IGKV released rice variety, the data given in Table 1 and Fig 1 reveals that Mahamaya counted as an only one successful variety of IGKV, overall highest (98.28%) knowledge was also noted for this variety in which 99.69 per cent knowledge recorded for their other characteristic followed by 98.28 per cent knowledge observed for its productivity and 96.88 per cent knowledge observed for its duration in the between of the respondents. 2nd highest knowledge observed for Rajeshwari rice variety amongst respondents wherein 68.75 per cent knowledge noted for its other characteristics followed by 67.19 per cent knowledge for its duration and 66.41 per cent knowledge seen for its productivity. 3rd highest knowledge recorded for Bamleshwari rice variety wherein 61.09 per cent knowledge noted for its duration followed by 60.78 per cent knowledge observed for its other characteristics and 60.16 per cent knowledge noted for its productivity. Overall 58.85 per

cent knowledge recorded for Maheshwari rice variety wherein 59.38 per cent knowledge noted for its productivity followed by 59.22 per cent known about its other characteristic and 57.97 per cent knowledge observed for its duration amongst respondents.

1st lowest knowledge noted for Indira Aerobic-1, overall 0.42 per cent knowledge noted amongst respondents, in which only 1.25 per cent knowledge noted for the duration while other knowledge attributes were null (other characteristic and productivity). 2nd lowest knowledge observed for Jaldubi in which 3.91 per cent knowledge noted for its other characteristic followed by 3.75 per cent knowledge observed for its productivity and 1.88 per cent knowledge noted for its duration amongst respondents. 3rd lowest knowledge recorded for Samleshwari rice variety in which 12.50 per cent knowledge for its productivity followed by 11.72 per cent knowledge observed for its other characteristic and 3.44 per cent knowledge noted for its productivity in the between of respondents.

Overall data showed that respondents were well familiar with Mahamaya, Rajeshwari and Bamleshwari due to its different characteristic and the highest lack of knowledge was noted for Indira aerobic-1 because it was not well disseminated amongst respondents.

Table 1 and Fig 1 revealed that overall 34.88 per cent knowledge noted for 15 listed IGKV rice varieties, wherein 33.32 per cent knowledge observed for other characteristics, 32.83 per cent knowledge noted for its productivity and 31.94 per cent knowledge observed for its duration. Less than 50 per cent knowledge seems for IGKV varieties in the midst of the respondents. It indicates that some efforts are needed for spreading the knowledge about IGKV rice varieties.

Knowledge gap of IGKV released rice varieties

Table 1 and Fig 1 incorporated about knowledge gap of IGKV released rice varieties, further elaborated that highest (99.58%) knowledge gap noted for Indira aerobic-1 followed by Jaldubi and samleshwari (96.8%, 90.78% respectively), while lowest (1.72%) knowledge gap noted for Mahamaya rice variety followed by Rajeshwari (32.55%) and Bamleshwari (39.32%). The overall 65.12 per cent knowledge gap observed for 15 listed IGKV rice varieties.

Knowledge about other popular (non-IGKV) rice varieties

Table 1, Fig 1 incorporated that highest (99.06%) knowledge noted for Swarna rice variety, wherein respondents well familiar about its other characteristic (100%), duration (98.75%) and productivity (98.44%). 2nd highest (97.92%) knowledge noted for MTU-1010 wherein 98.75 per cent knowledge noted for its other characteristic, 98.44 per cent knowledge observed for its productivity and 96.56 per cent knowledge noted for its duration in the midst of the respondents.

1st Lowest (63.80%) knowledge recorded for MTU-1001 wherein 64.53 per cent knowledge observed for its productivity followed by 64.38 per cent knowledge noted for its duration and 62.50 per cent knowledge observed for its other characteristic (Size, shape, taste etc.)

Table 1 and Fig 1 revealed that overall 86.69 per cent knowledge noted for 4 listed other popular rice varieties, wherein 88.75 per cent knowledge observed for their other characteristics followed by 85.86 per cent knowledge noted for their productivity and 85.47 per cent knowledge noted for their duration in the midst of the respondents.

Knowledge gap of other popular (non-IGKV) rice varieties

Table 1 and Fig 1 revealed that the highest (36.20%) knowledge gap was noted for MTU-1001 and 2nd highest (14.01%) knowledge gap was noted for IR-36/IR-64. Lowest

(0.94%) knowledge gap was observed for Swarna rice variety and MTU-1010 (2.08%).

Table 1 and Fig 1 revealed that overall knowledge gap recorded only 13.31 per cent in the between of the respondents which were a very lowest gap, comparison of knowledge gap of IGKV.

Table 1: Knowledge of respondents about rice varieties

Sl. No.	Rice varieties	Knowledge attributes						Overall knowledge		R	Knowledge gap	R
		Duration		Other Characteristics		Productivity		OS	%			
		OS	%	OS	%	OS	%					
IGKV released rice varieties												
1	Indira aerobic-1	8	1.25	0	0	0	0	8	0.42	XV	99.58	I
2	Rajeshwari	430	67.19	440	68.75	425	66.41	1295	67.45	II	32.55	XIV
3	Durgeshwari	378	59.06	370	57.81	375	58.59	1123	58.49	V	41.51	XI
4	Maheshwari	371	57.97	379	59.22	380	59.38	1130	58.85	IV	41.15	XII
5	Karma masuri	138	21.56	140	21.88	139	21.72	417	21.72	X	78.28	VII
6	Indira barani dhan-1	198	30.94	206	32.19	200	31.25	604	31.46	VI	68.54	X
7	Indira sona	100	15.63	110	17.19	108	16.88	318	16.56	XII	83.44	IV
8	Chandrasasani	135	21.09	140	21.88	132	20.63	407	21.20	XI	78.80	V
9	Jaldubi	12	1.88	25	3.91	24	3.75	61	3.18	XIV	96.82	II
10	Samleshwari	22	3.44	75	11.72	80	12.50	177	9.22	XIII	90.78	III
11	Bamleshwari	391	61.09	389	60.78	385	60.16	1165	60.68	III	39.32	XIII
12	Indira sugandhit dhan-1	172	26.88	180	28.13	175	27.34	527	27.45	VII	72.55	IX
13	Danteshwari	169	26.41	180	28.13	175	27.34	524	27.29	IX	72.71	VIII
14	Shyamla	135	21.09	140	21.88	135	21.09	410	21.35	VIII	78.65	VI
15	Mahamaya	620	96.88	638	99.69	629	98.28	1887	98.28	I	1.72	XV
	Total	3271	31.94	3412	33.32	3362	32.83	10045	34.88		65.12	
Other popular rice varieties												
16	MTU-1010	618	96.56	632	98.75	630	98.44	1880	97.92	II	2.08	IV
17	MTU-1001	412	64.38	400	62.5	413	64.53	1225	63.80	V	36.20	I
18	Swarna	632	98.75	640	100	630	98.44	1902	99.06	I	0.94	V
19	IR-36/IR-64	526	82.19	600	93.75	525	82.03	1651	85.99	III	14.01	III
	Total	2188	85.47	2272	88.75	2198	85.86	6658	86.69		13.31	
Overall (19 rice varieties)									49.97		50.03	

Note= Data are based on multiple responses, OC=Obtained score, R=Rank, %= percentage

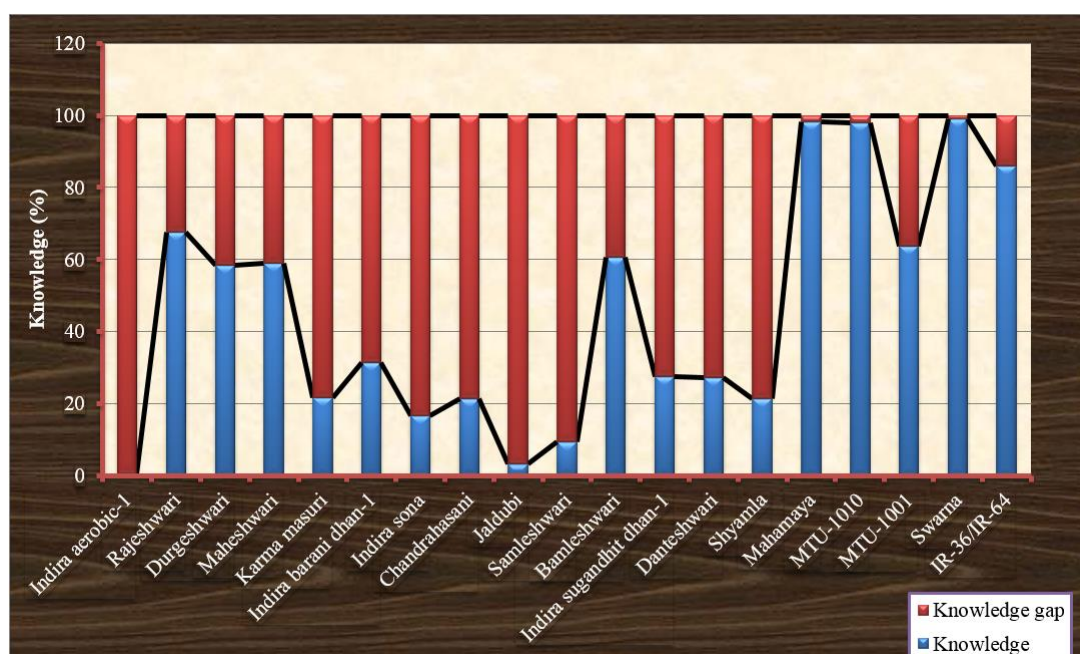


Fig 1: Variety wise overall knowledge and knowledge gap amongst the respondents

Conclusion

The data concluded that the majority of respondents have knowledge about Mahamaya and Rajeshwari rice varieties which was released from Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, where the highest knowledge gap recorded for Indira aerobic-1. More than 20

varieties of rice releases from IGKV but still respondents not familiar with these varieties, 65.12 per cent knowledge noted for IGKV rice varieties. Further data-focused that respondents were well familiar with non-IGKV released rice varieties such as Swarna which released at 1982 but still popular amongst respondents.

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