



Research Article

KNOWLEDGE OF BENEFICIARIES AND NON-BENEFICIARIES OF RKVY ABOUT RECOMMENDED INTERVENTIONS OF MAIZE

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Received: July 01, 2020; Revised: July 12, 2020; Accepted: July 13, 2020; Published: July 15, 2020

Abstract: This research was conducted in four panchayat samities (two tribal and two non-tribal) of Udaipur district of Rajasthan. Four beneficiary villages and two non-beneficiary village from each selected panchayat samiti were taken and 10 respondents were selected randomly from each selected village for the study. Data were collected through pre-structured interview schedule. It was found that there was a significant difference in level of knowledge between beneficiary and non-beneficiary farmers about recommended maize interventions. The beneficiary farmers had more knowledge than non-beneficiary farmers about recommended maize interventions. It indicates that there was positive impact of RKVY on beneficiary farmers in gain in knowledge about recommended maize interventions.

Keywords: Knowledge, Beneficiary, Non-beneficiary respondents and RKVY

Citation: Kumari S. and Sharma F.L. (2020) Knowledge of Beneficiaries and Non-beneficiaries of RKVY about Recommended Interventions of Maize. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 12, Issue 13, pp.- 10043-10047.

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Introduction

Agriculture, with its allied sectors, is the largest source of livelihoods in India as well as in Rajasthan. More than seventy percent of Indian population still depend on agriculture and eighty percent farmers being small and marginal. Agriculture also contributes a significant role in the Gross Domestic Product. Slow growth in agriculture can lead to serious strain in Indian economy because the large population depends on this sector. The present paper presents the data gathered in a randomly selected sample of the beneficiary and non-beneficiary farmers towards recommended interventions of maize crop introduced under RKVY programme in two tribal (Jhadol and Sarada) and two non-tribal (Bhinder and Mavli) panchayat samities of Udaipur district of Rajasthan. The 160 beneficiary and 80 non-beneficiary farmers were selected for the study.

Material and Methods

The final knowledge test had 38 items relating to maize crop practices. Equal weightage was given to each item. For correct answer '1' score was awarded and '0' for wrong answers. Thus, knowledge test was ready for administering the actual respondents. The knowledge index was calculated on the basis of following formula:

$$\text{Knowledge index} = [X_1 + X_2 + X_3 + \dots + X_n] / n \times 100$$

Where,

$X_1, X_2, X_3, \dots, X_n$ = scores of items

n = number of items.

The possible maximum score one could obtain was 46 for maize crop. The mean and standard deviation of all the respondents' scores were computed for classifying the knowledge level in different categories. Based on the mean knowledge score and standard deviation three levels of knowledge of farmers were categorized under low, medium and high. The categorization was done according to following consideration:

1) Low level of knowledge: $< X - S.D.$

2) Medium level of knowledge: $X \pm S.D.$ to $X + S.D.$

3) High level of knowledge: $> X + S.D.$

Frequency and percentage of respondents in each category *i.e.* low, medium and high was calculated. To determine the extent of knowledge of respondents about each major aspect mean percent score was worked out and ranked accordingly. Besides, to find out the significance of difference in knowledge between different categories of respondents, Z-test was applied and conclusions were drawn accordingly.

Result and Discussion

The statistical data regarding the knowledge level of beneficiary and non-beneficiary tribal and non-tribal area's farmers are presented in the [Table-1]

Distribution of the respondents according to their knowledge level regarding maize interventions

To get an overview of the knowledge level, the respondents were classified into three categories *i.e.* low (< 28.08), medium (28.08 to 43.26) and high (> 43.26) knowledge level on the basis of calculated mean and standard deviation of the obtained scores by the respondents. [Table-1] reveals that out of 240 respondents, majority of respondents 140 (58.33%) fell in medium level of knowledge group whereas, 48 (20.00%) respondents were observed in high level of knowledge group and remaining 51 (21.67%) respondents possessed low level of knowledge about recommended maize interventions under RKVY.

Further analysis of table clearly indicates that 97 (60.62%) beneficiary respondents and 43 (53.75%) non-beneficiary respondents had medium level of knowledge about maize interventions. Whereas, 37 (23.13%) beneficiary respondents and 11 (13.75%) non-beneficiary respondents possessed high level of knowledge about recommended maize interventions. On the other hand, 26 (16.25%) beneficiary respondents and 26 (32.50%) non-beneficiary respondents

Table-1 Distribution of respondents according to their knowledge level of maize crop, n =240

SN	Category	Beneficiary						Non-beneficiary						Grand total	
		Tribal Area		Non-Tribal Area		Total		Tribal Area		Non-Tribal Area		Total			
		F	%	f	%	f	%	f	%	f	%	f	%	F	%
1	Low (< 28.08)	11	13.75	15	18.75	26	16.25	13	32.50	13	32.50	26	32.50	52	21.67
2	Medium (28.08 to 43.26)	53	66.25	44	55.00	97	60.62	23	57.50	20	50.00	43	53.75	140	58.33
3	High (> 43.26)	16	20.00	21	26.25	37	23.13	4	10.00	7	17.50	11	13.75	48	20.00
	Total	80	100	80	100	160	100	40	100	40	100	80	100	240	100

f = frequency, % = percent

were kept in the low-level knowledge group as this category of respondents had poor knowledge about recommended maize interventions. A close observation to the data found that the majority of both categories tribal and non-tribal respondents possessed medium level of knowledge. On the basis of above data, it was inferred that maximum number of the beneficiary and non-beneficiary respondents had medium level of knowledge about recommended maize interventions. It was further concluded that the existing knowledge of beneficiary and non-beneficiary respondents were high in the study area. It means that RKVY had positive and significant impact on respondents with regards to possession of knowledge about various interventions introduced during the programme. The findings are similar to the results of Kumar (2012).

Intervention-wise knowledge of the respondents

The Rastriya Krishi Vikash Yojana has a focused approach. Therefore, the important interventions of maize namely seed minikits, field demonstrations, farm mechanization, micro-nutrients and plant protection equipment's were introduced under the RKVY. An effort was also made to assess the knowledge of respondents about important technologies diffused in each major intervention through RKVY in the study area. The intervention-wise results have been presented in subsequent tables.

Knowledge of respondents about seed minikits of maize crop

Individual aspect wise extent of knowledge of respondents about seed minikits was worked out. For this mean percent score were calculated. The results of the same have been given in [Table-2]. The data presented in [Table-2] indicate that the extent of knowledge about name of varieties under seed minikits of maize among beneficiary and non-beneficiary respondents was 85.00 and 44.37 MPS with ranked eleventh by both the categories. The knowledge of non-beneficiary respondents was comparatively low about name of varieties under seed minikits than beneficiary respondents. It was observed that the beneficiary respondents had good knowledge about the name of varieties of seed minikits of maize namely Bio-9637 and PEHM-2 as seed of these varieties were supplied to the beneficiary respondents under Rastriya Krishi Vikash Yojana. The high knowledge of beneficiary respondents about this aspect may be due to the fact that most of the respondents were well aware about seed minikits of maize crop.

Further analysis of table shows that among beneficiary and non-beneficiary respondents the extent knowledge about sowing time of seed minikit varieties of Bio-9637 was 91.13 and 68.75 MPS respectively. This aspect was ranked fifth by beneficiary and second by non-beneficiary respondents. The non-beneficiary respondents also possessed good knowledge about sowing time of this variety may be due to the fact that Bio-9637 variety of maize is common in the study area. It was further noted that 89.35 and 65.00 MPS knowledge about seed rate of variety of Bio-9637 was found in beneficiary and non-beneficiary respondents respectively. The extent of knowledge about Row to Row spacing of Bio-9637 variety was 86.00 and 37.50 MPS among the beneficiary and non-beneficiary respondents respectively. It was also noted that 88.10 and 45.00 MPS of knowledge about average plant height of maize variety of Bio-9637 was found in beneficiary and non-beneficiary respondents respectively. Likewise, the extent of knowledge about crop maturity period of Bio-9637 variety of maize, it was found that 91.20 and 48.88 MPS in beneficiary and non-beneficiary respondents respectively. This aspect was ranked fourth by beneficiary and seventh by the non-beneficiary respondents. The knowledge regarding important characteristics of Bio-9637 variety of maize, it was found that beneficiary and non-beneficiary respondents possessed 79.16 and 37.91 MPS extent of knowledge respectively. It

was also noted that 95.00 and 72.50 MPS of knowledge about yield of maize variety of Bio-9637 was found in beneficiary and non-beneficiary respondents respectively. It was ranked first by both the categories of respondents. Analysis of [Table-2] further shows that the extent of knowledge about sowing time, row to row spacing, seed rate, maturity period and yield of PEHM 2 variety of maize was 93.00, 87.50, 86.25, 82.50 and 93.75 MPS among beneficiary respondents respectively. Whereas, in case of non-beneficiary respondents it was found that 67.38, 52.38, 45.25, 46.15 and 57.50 MPS in these practices respectively.

It can be concluded that the beneficiary respondents under RKVY in the study area possessed relatively more knowledge about "seed minikits" of maize crop. Thus, from the above discussion it can be inferred that the extent of knowledge in beneficiary respondents was from 79.16 to 95.00 MPS. Whereas, in case of non-beneficiary respondents the extent knowledge was observed to be from 37.50 to 72.50 MPS in all the aspects about seed minikits of maize crop. The present findings are supported by the findings of Chandawat (2002), Dubey and Srivastava (2007) and Ranawat (2011).

Knowledge of respondents about field demonstrations of maize crop

The data presented in [Table-2] indicate that the knowledge about maize demonstrations among beneficiary and non-beneficiary respondents was 87.50 and 61.25 MPS respectively. It was observed that beneficiary respondents possessed complete knowledge about operational definition of maize demonstration. The knowledge of beneficiary respondents was comparatively high about the knowledge about demonstrations than non-beneficiary respondents. This aspect was ranked second by the beneficiary and first by non-beneficiary respondents. The extent of knowledge about advantages of maize demonstration, it was noted that beneficiary and non-beneficiary maize growers had 88.12 and 59.37 MPS knowledge respectively. It was ranked first and second by both beneficiary and non-beneficiary respondents. It was also noted that majority of the beneficiary respondents knew the demonstration show the utility and feasibility of recommended practice under village condition and provide the first hand information of package of practices of maize crop. Further analysis of table indicates that beneficiary and non-beneficiary respondents possessed extent of knowledge about meaning of thio-urea was 74.37 and 40.00 MPS in the study area. The knowledge regarding thio-urea demonstration, it was found that beneficiary and non-beneficiary respondents had 76.25 and 42.50 MPS extent of knowledge respectively. Majority of the beneficiary respondents were well known about thio-urea and thio-urea demonstration.

Thus, from above discussion it can be concluded that the extent of knowledge in beneficiary respondents was from 74.37 to 88.12 MPS, whereas, in case of non-beneficiary respondents the extent knowledge was observed to be from 40.00 to 61.25 MPS in all the aspects about field demonstrations of maize crop. A close observation of the table shows that the overall extent of knowledge about field demonstration in case of beneficiary respondents the non-tribal area's respondents possessed low level of knowledge than the tribal area's respondents, i.e. 81.75 and 84.00 MPS respectively. Whereas, in case of non-beneficiary respondents the non-tribal area's respondents possessed high level of knowledge than the tribal area's respondents, i.e. 63.50 and 40.50 MPS respectively. Conclusion can be drawn that the beneficiary respondents under RKVY in the study area possessed relatively less knowledge in the aspect of "meaning of thio-urea". Therefore, it is recommended the RKVY functionaries must give more emphasis on beneficiary respondents regarding importance of demonstration. The present findings are in line with the findings of Singh *et al.* (1999) and Ranawat (2011).

Table-2 Knowledge of the respondents regarding recommended interventions of maize crop, n =240

SN	Practices	Beneficiary											
		Tribal Area				Non-Tribal Area				Total			
		MPS	R	MPS	R	MPS	R	MPS	R	MPS	R	MPS	R
(A)	Knowledge regarding seed minikits of maize crop												
1	Name of varieties under seed minikits of wheat	86.25	IX	83.75	XI	85.00	XI	36.25	XII	52.50	IX	44.37	XI
2	Sowing time of Bio-9637 variety of maize	91.25	V	91.00	V	91.13	V	57.50	III	80.00	III	68.75	II
3	Seed rate of Bio-9637	92.50	IV	86.25	IX	89.35	VI	65.00	I	65.00	V	65.00	IV
4	Row to Row spacing of Bio-9637	82.00	XII	90.00	VI	86.00	X	35.00	XIII	40.00	XII	37.50	XIII
5	Average plant height of Bio-9637	90.00	VI	86.20	X	88.10	VII	45.00	VII	45.00	XI	45.00	X
6	Maturity period of Bio-9637	91.20	V	91.20	IV	91.20	IV	42.50	VIII	55.25	VII	48.88	VII
7	Characteristics of Bio-9637	79.58	XIII	78.75	XIII	79.16	XIII	37.50	X	38.33	XIII	37.91	XII
8	Yield of Bio-9637	95.00	I	95.00	I	95.00	I	62.50	II	82.50	I	72.50	I
9	Sowing time of PEHM-2 variety of maize	93.75	III	92.25	III	93.00	III	52.50	IV	82.25	II	67.38	III
10	Row to Row spacing of PEHM-2	87.50	VIII	87.50	VIII	87.50	VIII	42.25	IX	62.50	VI	52.38	VI
11	Seed rate of PEHM-2	83.75	XI	88.75	VII	86.25	IX	45.25	VI	45.25	X	45.25	IX
12	Maturity period of PEHM-2	85.00	X	80.00	XII	82.50	XII	37.25	XI	55.00	VIII	46.15	VIII
13	Yield of PEHM-2 variety of maize	95.00	II	92.50	II	93.75	II	45.50	V	67.50	IV	57.50	V
	Total	88.67		87.92		88.23		46.46		59.31		52.89	
(B)	Knowledge regarding field demonstration of maize crop												
1	Knowledge about field demonstrations	87.50	II	87.50	I	87.50	II	40.00	II	82.50	I	61.25	I
2	Advantages of field demonstrations	93.75	I	82.50	II	88.12	I	52.50	I	66.25	II	59.37	II
3	Acquaintance about thio-urea	70.00	IV	78.75	III	74.37	IV	27.50	IV	52.50	III	40.00	IV
4	Awareness about thio-urea demonstration	75.00	III	77.50	IV	76.25	III	35.00	III	50.00	IV	42.50	III
	Total	84.00		81.75		82.87		40.50		63.50		52.00	
(C)	Knowledge regarding farm mechanization of maize crop												
1	Acquaintance about farm mechanization in maize	83.75	VII	88.75	VI	86.25	VII	50.00	VI	60.00	IV	55.00	IV
2	Advantages of farm mechanization in maize cultivation	91.25	II	95.00	I	93.12	I	55.25	IV	50.00	VI	52.62	V
3	Use of Seed-cum-fertilizer drill (SCFD) in maize crop	87.50	VI	91.25	IV	89.37	V	55.00	V	47.50	VII	51.25	VI
4	Functions of SCFD during operation	90.25	III	92.50	II	91.38	III	57.50	III	62.50	III	60.00	III
5	Functions of rotavator in maize crop	88.75	V	91.20	V	89.98	IV	32.50	VIII	50.25	V	41.37	VII
6	Use of rotavator for field preparation	92.50	I	92.25	III	92.38	II	67.50	II	82.50	I	75.00	I
7	Use of Multi-crop thresher (MCT) in maize Crop	90.00	IV	88.50	VII	89.25	VI	70.00	I	77.50	II	73.75	II
8	Advantages of MCT in maize cultivation	80.00	VIII	83.12	VIII	81.56	VIII	35.00	VII	47.25	VIII	41.13	VIII
	Total	87.11		90.32		88.71		50.84		58.38		54.61	
(D)	Knowledge regarding micro-nutrients application of maize crop												
1	Micro-nutrients are required for maize crop	83.12	III	84.37	III	83.75	II	62.50	II	65.25	I	63.87	II
2	Use of ZnSO ₄ for Zn deficiency	91.25	I	86.25	I	88.75	I	72.50	I	75.00	II	73.75	I
3	Use of gypsum for sulphur deficiency	88.75	II	78.50	IV	83.62	III	55.00	IV	62.75	III	58.87	IV
4	Rate of Gypsum application per ha.	80.00	IV	85.00	II	82.50	IV	60.00	III	62.50	IV	61.25	III
	Total	85.25		83.53		84.65		62.50		66.38		64.44	
(E)	Knowledge of the respondents regarding plant protection equipment of maize crop												
1	Use of knapsack hand sprayer (KSHS)	85.25	IV	85.00	VII	85.13	V	77.50	I	90.00	I	83.75	I
2	Use of duster for application of chemicals	80.00	VII	92.50	I	86.25	IV	72.50	IV	72.50	V	72.50	IV
3	Common soil borne insect pest (termite)	93.75	I	87.50	V	90.62	I	67.50	V	75.00	III	71.25	V
4	Name of chemicals used for controlling termite pest	81.25	VI	85.62	VI	83.43	VI	58.75	VII	72.25	VI	65.50	VII
5	Recommended doses of chemicals used in termite control	85.00	III	91.25	II	88.12	II	62.50	VI	84.00	II	73.25	III
6	Name of common diseases of wheat	73.00	IX	79.37	VIII	76.18	IX	47.50	VIII	72.00	VII	59.75	VIII
7	Name of the chemicals used for controlling the smut disease	74.37	VIII	78.12	IX	76.25	VIII	40.00	IX	68.75	VIII	54.37	IX
8	Method for controlling of smut disease	86.25	II	88.75	III	87.50	III	75.50	II	60.00	IX	67.75	VI
9	Quantity of Vitavax is required for seed treatment	83.75	V	88.00	IV	81.87	VII	75.00	III	72.75	IV	73.75	II
	Total	82.52		86.23		84.37		64.00		74.13		69.00	

MPS =mean percent score, R= rank

Knowledge of respondents about farm mechanization in maize crop

Individual aspect-wise extent of knowledge of maize growers was worked out. For this mean percent score were calculated. The results of the same have been given in [Table-2]. The data presented in [Table-2] show that the beneficiary farmers possessed 86.25 MPS knowledge about acquaintance of farm mechanization in maize, whereas knowledge of non-beneficiary farmers about this aspect was comparatively less with 55.00 MPS. It was observed that majority of the farmers had knowledge about this aspect may be due to the fact that now a day's farmers are acquainted with many farms implements and machineries and these are using for crop cultivation. The knowledge about advantages of farm mechanization, it was found that 93.12 and 52.62 MPS with ranked first and fifth among beneficiary and non-beneficiary farmers respectively. Majority of respondents were in opinion that farm work efficiency may be increased due to farm mechanization. Further analysis of table reveals that extent of knowledge about use of seed-cum fertilizer drill in maize crop and functions of SCFD was observed to be 89.37 and 91.38 MPS with ranked fifth and third among beneficiary

farmers respectively. In case of non-beneficiary farmers, the extent of knowledge about these aspects was 51.25 and 60.00 MPS with ranked sixth and third respectively. The knowledge about functions of crop rotavator in maize crop and use of rotavator for field preparation was 89.98 and 92.38 MPS with ranked fourth and second was observed in beneficiary maize growers respectively. Whereas, in case of non-beneficiary maize growers it was found that 41.37 and 75.00 MPS with ranked seventh and first in these aspects respectively. The analysis of table also reveals that the knowledge about use of multi crop thresher in maize was ranked sixth and second by both beneficiary and non-beneficiary respondents with 89.25 and 73.75 MPS respectively. The knowledge regarding advantages of multi crop thresher was 81.56 and 41.13 MPS with ranked eighth by beneficiary and non-beneficiary respondents respectively.

Thus, from above discussion it can be concluded that the extent of knowledge in beneficiary respondents was from 81.56 to 93.12 MPS, whereas, in case of non-beneficiary respondents the extent knowledge was observed to be from 41.13 to 75.00 MPS in all the aspects about farm mechanization in maize cultivation.

Table-3 Overall knowledge of the respondents regarding maize crop interventions, n =240

SN	Major Practices	Beneficiary								Non-beneficiary			
		Tribal Area		Non-Tribal Area		Total		Tribal Area		Non-Tribal Area		Total	
		MPS	R	MPS	R	MPS	R	MPS	R	MPS	R	MPS	R
A	Seed minikits	88.67	I	87.92	II	88.23	II	46.46	IV	59.31	IV	52.89	IV
B	Field demonstration	84.00	IV	81.75	V	82.87	V	40.50	V	63.50	III	52.00	V
C	Micro-nutrients	85.25	III	83.53	IV	84.65	III	62.50	II	66.38	II	64.44	II
D	Farm Mechanization	87.11	II	90.32	I	88.71	I	50.84	III	58.38	V	54.61	III
E	Plant Protection Equipments	82.50	V	86.23	II	84.37	IV	64.00	I	74.13	I	69.00	I
	Overall	88.30		87.21		87.75		56.22		60.05		58.14	

MPS =mean percent score, R = rank

Table-4 Practice wise comparison of knowledge between beneficiary and non-beneficiary respondents of maize crop

SN	Package of practices	Beneficiary		Non-Beneficiary		'Z' value
		Mean±	S.D.	Mean±	S.D.	
(A)	Knowledge about seed minikits	12.21	2.47	7.20	3.75	16.04**
(B)	Knowledge about field demonstration	4.14	1.23	2.60	1.56	7.00**
(C)	Knowledge about micro-nutrients	7.95	1.29	4.91	2.04	16.00**
(D)	Knowledge about farm Mechanization	4.22	1.09	2.97	1.44	7.81**
(E)	Knowledge about Plant Protection Equipments	9.91	1.95	8.02	2.24	4.72**
	Overall	40.15	3.82	26.60	4.58	22.21**

**Significant at 1% level of significance

A close observation of the table shows that the overall extent of knowledge about farm mechanization the non-tribal area's respondents possessed more knowledge than the tribal area's respondents in both categories. The similar findings have been supported by the findings of Saharan and Pundhir (2004) and Kumar (2012).

Knowledge of respondents about micro-nutrients application in maize crop

The data presented in [Table-2] indicate that the knowledge regarding type of micro-nutrients are required for maize crop, it was noticed that 83.75 and 63.87 MPS in beneficiary and non-beneficiary farmers respectively. The knowledge of beneficiary respondents was comparatively more about micro-nutrients than non-beneficiary respondents. This aspect was ranked second by beneficiary and non-beneficiary respondents. The extent of knowledge about use of fertilizer for Zn deficiency among beneficiary and non-beneficiary respondents was 88.75 and 73.75 MPS with ranked first by both the categories of respondents respectively. Majority of the beneficiary respondents knew about the name of fertilizer which is applied for Zn deficiency in maize crop. A good number of beneficiary farmers possessed the knowledge about correct dose i.e. 20-40 kg/ha $ZnSO_4$ for maize crop.

In case of application of fertilizer for sulphur deficiency, beneficiary and non-beneficiary farmers had 83.62 and 58.87 MPS knowledge and ranked third by beneficiary respondents and fourth by non-beneficiary respondents respectively. The extent of knowledge about rate of application of gypsum, it was noted that beneficiary and non-beneficiary farmers had 82.50 and 61.25 percent knowledge respectively. It was ranked fourth by beneficiary and third by non-beneficiary respondents.

Thus, from above discussion it can be concluded that the extent of knowledge in beneficiary respondents was from 82.50 to 88.75 MPS, whereas in case of non-beneficiary respondents the extent knowledge was observed to be from 58.87 to 73.75 MPS in all the aspects about micro-nutrients application in maize cultivation. A close observation of the table shows that the overall extent of knowledge about micro nutrients application the non-tribal area's respondents possessed less knowledge than the tribal area's respondents in both categories. The similar findings have been supported by the findings of Saharan and Pundhir (2004) and Samota (2011) and Kumar (2012).

Knowledge of respondents about plant protection equipment in maize cultivation Individual aspect wise extent of knowledge of maize growers was worked out. For this mean percent score were calculated. The results of the same have been given in [Table-2]. The data presented in [Table-2] show that the knowledge about use of knapsack hand sprayer for maize crop, it was noticed that 85.13 and 83.75 MPS with ranked fifth and first by beneficiary and non-beneficiary respondents respectively. In case of use of duster in maize crop, the extent of knowledge was 86.25 and 72.50 MPS with ranked fourth among beneficiary and non-beneficiary respondents respectively. Majority of the respondents knew about the use of plant

protection equipment's i.e. knapsack hand sprayer, duster and power operated sprayer etc. Further analysis of [Table-2] shows that the knowledge about common soil borne insect pest of maize crop, it was observed that beneficiary and non-beneficiary respondents had 90.62 and 71.25 MPS with ranked first and fifth respectively. The beneficiary and non-beneficiary respondents possessed knowledge about name the chemicals used for controlling termite was 83.43 and 65.50 MPS with ranked sixth by beneficiary and seventh by non-beneficiary respectively. Regarding the knowledge about recommended doses of chemical used in termite control was 88.12 and 73.25 MPS with ranked second by beneficiary and third by non-beneficiary respondents respectively. It was noted that the beneficiary respondents had more knowledge about common soil born insect pest, chemicals used for termite control and recommended doses of chemical used in termite control comparatively non-beneficiary respondents.

The knowledge about name of common diseases of maize crop was placed at ninth rank by beneficiary and eighth by non-beneficiary respondents with 76.18 and 59.75 MPS respectively. The beneficiary and non-beneficiary respondents possessed knowledge about name the chemicals with doses used for controlling the diseases was 76.25 and 54.37 MPS with ranked eighth by beneficiary and tenth by non-beneficiary respondents, respectively. Similarly, the rank was given third and seventh by beneficiary respondents and sixth and second by non-beneficiary respondents to the aspects like method for control of downy mildew and quantity of vitavax is required per kg seed of maize respectively. It was noted that 87.50 and 67.75 MPS knowledge about method of downy mildew control in beneficiary and non-beneficiary respondents respectively. In case of quantity of vitavax, 81.87 and 73.75 MPS knowledge possessed by beneficiary and non-beneficiary respondents respectively.

Thus, from above discussion it can be concluded that the extent of knowledge in beneficiary respondents were from 76.18 to 90.62 MPS, whereas in case of non-beneficiary respondents the extent of knowledge was observed to be from 54.37 to 83.75 MPS in all the aspects about plant protection equipment in maize cultivation. The similar findings have been supported by the findings of Saharan and Pundhir (2004) and Samota (2011).

Overall knowledge of the respondents regarding maize crop interventions

Overall aspect wise extent of knowledge of maize growers was worked out. For this mean percent score were calculated. The results of the same have been given in [Table-3].

The data presented in [Table-3] show that the beneficiary respondents possessed 88.23 MPS of knowledge about seed minikits, whereas knowledge of non-beneficiary respondents about this aspect was comparatively less with 52.89 MPS. It was ranked second and fourth by beneficiary and non-beneficiary respondents respectively. The knowledge of non-beneficiary respondents was comparatively low about seed minikits than beneficiary respondents.

It was observed that the beneficiary respondents had good knowledge about the seed minikits of maize crop varieties which were supplied to the beneficiary respondents under Rastriya Krishi Vikash Yojana. It was also observed that beneficiary and non-beneficiary respondents had knowledge about the field demonstrations were 82.87 and 52.00 MPS respectively. This aspect was ranked fifth by beneficiary and non-beneficiary respondents. It was observed that beneficiary farmers possessed almost complete knowledge about operational definition of maize demonstrations. The extent of knowledge about micro nutrients application, it was noted that beneficiary and non-beneficiary respondents had knowledge 84.65 and 64.44 MPS respectively. It was ranked third and second by beneficiary and non-beneficiary respondents respectively. It was observed that majority of the beneficiary farmers were fully acquainted about the micro-nutrients are applied for correcting the nutrient deficiencies in maize crop. In case of knowledge about farm mechanization, the extent of knowledge was 88.71 and 54.61 MPS with ranked first and third among beneficiary and non-beneficiary respondents respectively. It was observed that majority of the respondents had knowledge about this aspect may be due to the fact that now a day's farmers are acquainted with many farms implements and machineries and these are using for crop cultivation. Regarding knowledge about plant protection equipment's, it was observed that beneficiary and non-beneficiary respondents had 84.37 and 69.00 MPS respectively. Majority of the respondents knew about the name of plant protection equipment's *i.e.* knapsack hand sprayer, duster and power operated sprayer *etc.*

A close observation to the data about tribal and non-tribal area's respondents reveals that the overall knowledge of maize crop interventions of beneficiary tribal and non-tribal area's respondents was comparatively high than non-beneficiary tribal and non-tribal area's respondents *i.e.* 88.30, 87.21, 56.22 and 60.05 MPS respectively. Thus, from above discussion it can be concluded that the extent of knowledge in beneficiary respondents was from 84.37 to 88.71 MPS, whereas in case of non-beneficiary respondents the extent of knowledge was observed to be from 51.89 to 69.00 MPS in all the aspects about maize cultivation. The similar findings have been supported by the findings of Saharan and Pundhir (2004) and Samota (2011).

Practice-wise comparison between beneficiary and non-beneficiary farmers about knowledge of maize interventions

In addition to study of knowledge level of beneficiary and non-beneficiary maize growers with regards to recommended interventions under RKVY, further efforts were made to study the difference in knowledge between beneficiary and non-beneficiary respondents about maize interventions. To find out the variation in the knowledge of respondent's 'Z' test was applied. The results are presented in [Table-4].

NH02: There is no significant difference between beneficiary and non-beneficiary respondents about knowledge of recommended maize interventions.

RH2: There is significant difference between beneficiary and non-beneficiary respondents about knowledge of recommended maize interventions.

[Table-4] shows that the calculated 'Z' value was found to be greater than its tabulated value at 1 percent level of significance in all interventions viz., seed minikits, field demonstration, micro-nutrients, farm mechanization and plant protection equipment's. Thus, the null hypothesis (NH02) was rejected and alternate hypothesis (RH2) was accepted. It reveals that there was significant difference in knowledge between beneficiary and non-beneficiary farmers about recommended maize interventions. In other words, there is no similarity between the extent of knowledge of beneficiary and non-beneficiary farmers regarding recommended maize interventions.

The mean value further indicates that beneficiary farmers had higher knowledge than non-beneficiary farmers about maize interventions. This difference in the level of knowledge of maize growers might be due to the reason that beneficiary respondents had contacted with functionaries of Rastriya Krishi Vikash Yojana and beneficiary farmers are selected for five years under this mission. The significant difference between beneficiary and non-beneficiary farmers regarding knowledge of recommended maize interventions highlights that there was impact of RKVY on beneficiary farmers with regard to increase in knowledge of

recommended maize interventions in the study area.

The present results are in line with the findings of Ranawat (2011) who reported that there was significant difference in knowledge with regard to improved practices of maize cultivation in beneficiary and non-beneficiary respondents. These findings are also in the line of finding of Chandawat (2002) and Mahawar (1998).

Conclusion

Thus, from the above results, it may be concluded that there was a significant difference in level of knowledge between beneficiary and non-beneficiary farmers about recommended maize interventions. The beneficiary farmers had more knowledge than non-beneficiary farmers about recommended maize interventions. It indicates that there was positive impact of RKVY on beneficiary farmers in gain in knowledge about recommended maize interventions.

Application of research: Impact of RKVY in reference to recommended intervention of maize crop

Research Category: Extension Education

Acknowledgement / Funding: Department of Extension Education, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, 313001, Rajasthan, India

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Research project name or number: PhD Thesis

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: Udaipur district of Rajasthan

Cultivar / Variety / Breed name: Maize crop

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

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