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Analytical study of level of knowledge beneficiary and non-beneficiary farmers regarding potato production technology

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Abstract
Knowledge is a familiarity, awareness or understanding of someone or something, such as facts, information, description or skills which is acquired through experience or education by perceiving, discovering or learning. The present study was conducted in Gwalior district of Madhya Pradesh. There are total four blocks in Gwalior district among them only one Barai block was selected purposively. It can be observed that nearly equal number of the beneficiary farmers (70%) and non-beneficiary farmers (66.67%) had partial level of knowledge about potato production technology. On the other hand 23.33 per cent and 6.67 per cent of beneficiary farmers and non-beneficiary farmers respectively had complete level of knowledge about potato production technology.

Keywords: Level of knowledge and practices of potato production technology

Introduction
Potato and tomato are the major vegetables grown in the Gwalior district of Madhya Pradesh. This area of the state occupied a sizable acreage under potato cultivation but farmers are not satisfied with profit realized by its production. Although, there is more potential of yield increasing and income increases possibilities and prospects of potato cultivation in the area. Looking to the importance of potato cultivation, the National Horticultural Mission (NHM) has given importance for its development in the state. The Mission specially focuses on increasing both production and productivity through adoption of improved and appropriate technologies for ensuring quality, including genetic up gradation of all horticultural crops, addressing challenges of climate change.
Context with above facts, the National Horticultural Mission (NHM) focused and executed transfer of technology activities for increasing production, productivity and income from the cultivation of potato crop. Whether the farmers have changed their adoption level of improved potato production technology and have positive attitude towards the programme, is a matter of assessment. Hence, the present study is of paramount importance. The specific objectives were undertaken (i) to study the level of knowledge of potato production technology by beneficiaries and non beneficiaries under NHM programme. (ii) Relationship between characteristics of the respondents with their level of Knowledge towards improved potato production technology.

Methodology
The present study was conducted in Gwalior district of Madhya Pradesh. There are total four blocks in Gwalior district among them only one Barai block was selected purposively, because Barai block comprised of maximum area under potato production and has well established vegetable market. A list of potato growing villages of Barai block was prepared with the help of Deputy Director of Horticulture of the district who is the incharge of all NHM programmes in the district. From this list 10 villages will be selected randomly. A village wise list of potato growers (NHM beneficiaries) was prepared and from each village 6 beneficiaries were selected

randomly. The same number of non beneficiaries from same village was selected. Thus, the total 120 respondents including 60 beneficiaries and 60 non beneficiaries were the sample of the study.

Results and Discussion

Level of knowledge of farmers regarding potato production technology

Practice wise level of knowledge of recommended potato production technology was ascertained in the respect of recommended practices and the data thus obtained have been reported in Table 1.

- **Practices wise knowledge level of beneficiary according to their potato production technology**

As observed improved variety majority of the respondents (72.33%) had partial knowledge, whereas 16.67 per cent had complete knowledge and 10 per cent of the respondents had no knowledge about improved variety.

In crate of seed treatment, 65 per cent of the respondents had partial knowledge, while 23.33 per cent respondents had complete knowledge and 11.67 per cent had no knowledge about seed treatment.

In relation to sowing of time more than half of the respondents (56.67%) had partial knowledge whereas, 41.67 per cent of the respondents had complete knowledge and few percentage of the respondent had no knowledge about sowing of time in pulse production technology.

Regarding recommended dose of fertilizers, majority of the respondents (68.33%) had partial knowledge followed by complete (20%) and no (11.67%) respectively.

In case of irrigation, 60 per cent of the respondents had partial knowledge, while 33.33 per cent respondents had complete knowledge and 6.67 per cent had no knowledge about irrigation.

In subsequently of kin to weed control one sided majority of the respondents (81.67%) had partial knowledge and 15 per cent of the respondent had complete and 3.33 per cent had no knowledge about weed control in potato production technology.

In relation to plant protection majority of the respondents (76.67%) had partial knowledge whereas, 16.67 per cent of the respondents had complete knowledge and only 6.67 per cent of the respondent had no knowledge about plant protection in potato production technology.

As regards harvesting and storage, majority of the respondents (75%) had partial knowledge, whereas 20 per cent had complete knowledge and 5 per cent of the respondents had no knowledge about harvesting and storage.

- **Practices wise knowledge level of non-beneficiary according to their potato production technology**

As sensible improved variety majority of the respondents (66.67%) had partial knowledge, whereas 28.33 per cent had no knowledge and 5 per cent of the respondents had complete knowledge about improved variety.

In case of rate of seed treatment, 60 per cent of the respondents had partial knowledge, while 31.67 per cent respondents had no knowledge and 8.33 per cent had complete knowledge about seed treatment.

In relation to sowing of time more than half of the respondents (55%) had partial knowledge whereas, 33.33 per cent of the respondents had no knowledge and 11.67 per cent of the respondent had complete knowledge about sowing of time in potato production technology. Regarding recommended dose of fertilizers, majority of the respondents (65%) had partial knowledge followed by no (28.33%) and complete (6.67%) respectively.

In case of irrigation, 55 per cent of the respondents had partial knowledge, while 35 per cent respondents had no knowledge and 10 per cent had complete level of knowledge about irrigation. In subsequently of kin to weed control one sided majority of the respondents (78.33%) had partial knowledge and 16.67 per cent of the respondent had no and 5 per cent had complete knowledge about weed control in potato production technology.

In relation to plant protection majority of the respondents (73.33%) had partial knowledge whereas, 20 per cent of the respondents had no knowledge and only 6.67 per cent of the respondent had complete knowledge about plant protection in pulse production technology.

As regards harvesting and storage, majority of the respondents (75%) had partial knowledge, whereas 16.67 per cent had no knowledge and 8.33 per cent of the respondents had complete knowledge about harvesting and storage.

Extent of level of knowledge

It is clear from Table 2 that nearly equal number of the beneficiary farmers (70%) and non-beneficiary farmers (66.67%) had partial level of knowledge about potato production technology. On the other hand 23.33 per cent and 6.67 per cent of beneficiary farmers and non-beneficiary farmers respectively had complete level of knowledge about potato production technology.

Remaining 6.67 per cent beneficiary farmers and 26.66 per cent non-beneficiary farmers were found having low level of knowledge about potato production technology.

Relationship between characteristics of the respondents with their level of Knowledge towards improved potato production technology

The data presented in Table 3 show that the independent variables *viz*., education (0.34) and innovativeness (0.31) were positively and significantly related with knowledge level of improved potato production

technology by the beneficiary farmers at 0.01 level of significance while, size of land holding (0.22), social participation (0.25) and information seeking behaviour (0.27) were positively and significantly related with knowledge level of improved potato production technology by the beneficiary farmers at 0.05 level of significance whereas, age (0.11) was found to be not significant.

Among non-beneficiary farmers, the calculated correlation coefficient value in case of education (0.31) was positively and significantly related with knowledge level of improved potato production technology by the non- beneficiary farmers at 0.01 level of significance while, size of land holding (0.23), social participation (0.26), information seeking behaviour (0.24) and innovativeness (0.28) were positively and significantly related with knowledge level of improved potato production technology by the non- beneficiary farmers at 0.05 level of significance whereas, age (0.06) was found to be not significant.

Table 1: Practices wise knowledge level of beneficiaries and non- beneficiaries according to their potato production technology

S. No.	Practices	Beneficiaries level of knowledge						Non-beneficiaries level of knowledge					
		Complete		Partial		No		Complete		Partial		No	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	Improved variety	10	16.67	44	73.33	06	10.00	03	5.00	40	66.67	17	28.33
2.	Seed treatment	14	23.33	39	65.00	07	11.67	05	8.33	36	60.00	19	31.67
3.	Sowing of time	25	41.67	34	56.67	01	1.66	07	11.67	33	55.00	20	33.33
4.	Fertilizer	12	20.00	41	68.33	07	11.67	04	6.67	39	65.00	17	28.33
5.	Irrigation	20	33.33	36	60.00	04	6.67	06	10.00	33	55.00	21	35.00
6.	Weed control	09	15.00	49	81.67	02	3.33	03	5.00	47	78.33	10	16.67
7.	Plant protection	10	16.67	46	76.66	04	6.67	04	6.67	44	73.33	12	20.00
8.	Harvesting and storage	12	20.00	45	75.00	03	5.00	05	8.33	45	75.00	10	16.67

Table 2: Distribution of the farmers according to their extent of level of knowledge regarding potato production technology

Level of knowledge	Beneficiaries (n=60)	Non-beneficiaries (n=60)	Total (n=120)
No (<30.76 score)	4 (6.67)	16 (26.66)	24 (20.00)
Partial (30.76 – 49.17 score)	42 (70.00)	40 (66.67)	82 (68.33)
Complete (>49.17 score)	14(23.33)	04 (6.67)	20 (16.67)

Table 3: Relationship between characteristics of the respondents with their level of Knowledge towards improved potato production technology

S. No.	Characteristics	Beneficiaries		Non-beneficiaries	
		"r" value	"t'' value	"r" value	"t'' value
1.	Age	0.11	0.84^{NS}	0.06	0.46^{NS}
2.	Education	0.34	2.75**	0.31	2.48**
3.	Size of land holding	0.22	1.71*	0.23	1.80*
4.	Social participation	0.25	1.97*	0.26	2.05*
5.	Information seeking behavior	0.27	2.14*	0.24	1.88*
6.	Innovativeness	0.31	2.48**	0.28	2.22*

^{NS} Non significant **Significant at 0.01 level of probability *Significant at 0.05 level of probability

Conclusions

This study concluded that nearly equal number of the beneficiary and non-beneficiary farmers had partial level of knowledge about potato production technology. Relationship between independent variables *viz*., education was positively and highly significant related with knowledge level of improved potato production technology by the beneficiary and non-beneficiary farmers at 0.01 level of significance while, size of land holding, social participation and information seeking behaviour were positively and significantly related with knowledge level of improved potato production technology by the beneficiary and non-beneficiary farmers at 0.05 level of significance whereas, age was found to be not significant.

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