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Assessment of Knowledge Levels and Constraints of Potato Growers

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ABSTRACT

The present study was carried out in Meerut district of Uttar Pradesh to assess the knowledge level of potato growers and their constraints regarding potato production technologies. Study revealed that the highest knowledge level was found in soil selection of marginal farmers (74.16 %), while in case of small farmers (77 .50 %) in harvesting of potato crop, medium fanners (87.33 %) in selection of soil and the large farmers (88.21 %) in manures & fertilizers. The average knowledge levels of large farmers were found highest (81.60 %) and lowest (63.71 %) of marginal fanners. The average knowledge levels of small and medium farmers were 70.42 and 75.91 per cent/respectively. The highest mean values were found in manures & fertilizers for all the categories farmers i.e. 9.49, 10.82, 11.75 and 12.35 for marginal, small, medium and large farmers respectively. The lowest mean values were found to be 3.72, 4.20, 4.28 and 4.68 for marginal, small, medium and large farmers with respect to time of sowing, seed rate, water management and use of improved implements/respectively. The major constraints were high wages of labour, unavailability of newly released variety, high cost of irrigations the higher price of manures and fertilizers and lack of knowledge about plant protection chemicals.

Potato is one of the most important crops in the world. It is popularly known as the king of vegetables. The Indian vegetable basket is incomplete with out the potatoes. India is producing 23.27 million tones of potato from an area of 1.28 million hectares with an average yield of 18113 kg. per hectare. At present India ranks fourth in area, third in production and tenth in productivity in the world. During the last five decades our country has progressed significantly by developing high yielding varieties of potato, improved agro - techniques and other production techniques suitable for different agro- climatic zones in the country. But there are wide gaps between the. available technologies and their adoption. Keeping this in view the present study was under taken to know the knowledge level of potato growers and their constraints related to potato production technology.

METHODOLOGY

The study was conducted in Meerut district of Uttar Pradesh during the year 2004-05. The district comprises of 12 blocks out of which two blocks were selected based on cropped area and the crop productivity. Five villages from each block and ten potato growers were randomly selected from each village. Thus the total sample size was 100. The primary data were collected through personal interview with the help of structured schedule. The data were analyzed to find out the knowledge levels constraints.

RESULTS AND DISCUSSION

The data presented in Table-I, indicate that the highest knowledge level was found in selection of soil (74.16 per cent) in case of marginal farmers, followed by 67.79,65.62,65.33, 65.00, 64.50, 64.16, 62.50, 62.00,60.50,60.37 and 56.20 per cent knowledge level regarding manures & fertilizers, storage & transportation, use of improved implements, harvesting of crop, water management, seed rate, time of manures & fertilizers application, time of sowing, method of sowing, improved varieties, and plant protection respectively.

In case of small farmers the highest knowledge level was found in harvesting of crop (77.50 per cent),followed by 77.29, 76.67, 75.33, 73.50, 72.50, 71.87, 70.00,66.33,66.00,65.62, and 58.16 per cent knowledge level regarding manures & fertilizers, water management, selection of soils, time of sowing, time of manures & fertilizes application, storage & transportation, seed rate, use of improved implements, method of sowing, improved

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varieties and plant protection, respectively.

In case of medium farmers the highest knowledge level was found in selection of soil (87.33 per cent), followed by 83.92, 77.50, 77.33, 76.66, 75.66, 75.00, 74.75. 73.50, 7.00, 71.33, and 65.41 per cent knowledge level regarding to manures & fertilizers, storage & transportation, time of sowing, time of manures & fertilizers application, harvesting crop, seed rate, method of sowing, improved varieties, use of improved implements, water management and plant protection respectively.

The highest knowledge level of large farmers was found (88.21 per cent) related to manures and fertilizers, followed by 88.16,85.62,83.33,83.33,83.12,81.25,80.66, 80.33, 80.00, 78.00 and 69.16 per cent knowledge level regarding to selection of soil, method of sowing, seed rate, harvesting of crop, improved varieties, storage and transportation, water management, time of sowing, time of manures and fertilizers application, use of improved implements and plant protection respectively.

The average knowledge levels of large farmers were found highest 81.60 per cent and lowest 63.71 per cent of marginal farmers. The knowledge levels of small and medium farmers were 70.42 and 75.91 per cent respectively.

The data presented in Table 2, reveals that the highest mean value was found 9.49 of marginal potato growers regarding manures & fertilizers, followed by 6.75, 4.84, 4.83, 4.45, 3.92, 3.90, 3.87, 3.85,3.75 and 3.72 mean values regarding plant protection, storage & transportation, methods of sowing, improved varieties, selection of soil, use of improved implements, harvesting of crop, water management, seed rate, time of manures & fertilizers application and time of sowing, respectively.

In case of small potato growers highest mean value was found 10.82 regarding to manures & fertilizers, followed by 6.98,5.75,5.35,5.28,5.25,4.65,4.60,4.52, 4.41, 4.20 and 3.98 mean value on plant protection, storage and transportation, time of manures & fertilizers application, methods of sowing, improved varieties, harvesting crops, water management, selection of soil, time of sowing, seed rate and use of improved implements and plant production respectively.

The average knowledge levels of large farmers were found highest 81.60 per cent and lowest 63.71 per cent of marginal farmers. The knowledge levels of small and medium farmers were 70.42 and 75.91 per cent respectively.

The data presented in Table 2, reveals that the highest mean value was found 9.49 of marginal potato growers regarding manures & fertilizers, followed by 6.75, 5.25, 4.84, 4.83, 4.45, 3.92, 3.90, 3.87, 3.85, 3.75 and 3.72 mean values regarding plant protection, storage & transportation, methods of sowing, improved varieties, selection of soil, use of improved implements, harvesting of crop, water management, seed rate, time of manures & fertilizers application and time of sowing, respectively.

In case of small potato growers highest mean value was found 10.82 regarding to manures & fertilizers, followed by 6.98,5.75,5.35,5.28,5.25,4.65,4.60,4.52, 4.41, 4.20 and 3.98 mean value on plant protection, storage and transportation, time of manures & fertilizers application, methods of sowing, improved varieties, harvesting crops, water management, selection of soil, time of sowing, seed rate and use of improved implements respectively.

In case of medium potato growers highest mean value was found 11.75 regarding manures & fertilizers, followed by 7.85,6.20,5.98,5.88,5.24,4.64,4.60,4.54, 4.50, 4.38 and 4.28 mean values regarding plant protection, storage and transportation, methods of sowing, improved varieties, selection of soil, time of sowing, time of manures & fertilizers application, harvesting of crop, seed rate, use of improved implements and water management respectively. While highest mean value was 12.35 for large potato growers regarding manures & fertilizers, followed by 8.30, 6.85, 6,65, 6.50, 5.29, 5.00, 5.00,4.84,4.82.4.80 and 4.68 mean values regarding plant protection, methods of sowing, improved varieties, storage and transportation, selection of soil, seed rate, harvesting of crop, water management, time of sowing, time of manures & fertilizers application and use of improved implements respectively.

Constraints related to potato production technologies

Socio-economic constraints :

The data presented in table 3, indicate that high wages of labour was found to be the most important constraint. Small size of holding was the second constraint as expressed by the respondents. The third important constraint expressed by the farmers was lack of knowledge.

Technological constraints

The data presented in Table 4, indicate that constraints of potato growers i.e. unavailability of newly

released varieties was ranked first and lack of

knowledge about innovations ranked second with respect to constraints related to varieties. In case of water management constraints, high cost of irrigation charges ranked first and non availability of government tube well ranked second. While high price of manures and fertilizers was ranked third, lack of knowledge about fertilizers doses was ranked first and untimely availability of fertilizers was ranked second with respect to constraints related to fertilizers. Lack of knowledge about plant protections chemicals was ranked first, high cost of chemicals ranked second, quality of plant protection chemicals not being satisfactory ranked third and non availability of some chemicals ranked fourth with respect to plant protection measures. Constraints high storage charges was ranked first, lack of storage facilities was ranked second and poor transportation facilities was ranked third in case of constraints related to post harvesting technology.

Table 1. Knowledge level of potato growers

S. No	Potato production technology	Score assigned(%)	Marginal farmers(%)	Small farmers(%)	Medium farmers(%)	Large farmers(%)
1	Selection of soil	6	74.16	75.33	87.33	88.16
2	Improved varieties	8	60.37	65.62	73.50	83.12
3	Seed rate	6	64.16	70.00	75.00	83.33
4	Time of sowing	6	62.00	73.50	77.33	80.33
5	Method of sowing	8	60.50	66.00	74.75	85.62
6	Manures & fertilizers	14	67.79	77.29	83.92	88.21
7	Time of manures & fertilizers application	6	62.50	72.50	76.66	80.00
8	Water management	6	64.50	76.67	71.33	80.66
9	Plant protection	12	56.25	58.16	65.41	69.16
10	Use of improved implements	6	65.33	66.33	73.00	78.00
11	Harvesting of crop	6	65.00	77.50	75.66	83.33
12	Storage & transportation	8	65.62	71.87	77.50	81.25
	Average percentage	92	63.71	70.42	75.91	81.60

Table 2. Mean values of knowledge of potato growers on the basis of land holding

S. No.	Potato production technology	Score assigned(%)	Marginal farmers(%)	Small farmers(%)	Medium farmers(%)	Large farmers(%)
1	Selection of soil	6	4.45	4.52	5.24	5.29
2	Improved varieties	8	4.83	5.25	5.88	6.65
3	Seed rate	6	3.85	4.20	4.50	5.00
4.	Time of sowing	6	3.72	4.41	4.64	4.82
5	Method of sowing	8	4.84	5.28	5.98	6.85
6	Manures & fertilizers	14	9.49	10.82	11.75	12.35
7	Time of manures & fertilizers application	6	3.75	5.35	4.60	4.80
8	Water management	6	3.87	4.60	4.28	4.84
9	Plant protection	12	6.75	6.98	7.85	8.30
10	Use of improved implements	6	3.92	3.98	4.38	4.68
1 1	Harvesting of crop	6	3.90	4.65	4.54	5.00
12	Storage & transportation	8	5.25	5.15	6.20	6.50
	Average percentage	92	58.62	64.79	69.84	75.80

Table 3. Socio-economic constraints in adoption of potato production technology

S.No.	Constraints	Total Score	Rank Order
1.	**High labour wages**	**38**	**I**
2.	**Small size of land holding**	**34**	**Il**
3.	**Lack of knowledge**	**28**	**III**

Table 4. Technological constraints in adoption of potato production technology

S.No.	Constraints	Total Score	Rank Order
1.	**Related to varieties**		
i	Unavailability of newly released varieties	61	I
ii	Lack of knowledge about innovation	49	II
2.	**Related to water management**		
i	High cost of irrigation .	56	I
ii	Non availability of govt. Tube well	44	II
3	**Related to fertilizers**		I
i	Lack of knowledge about fertilizers doses	62	I
ii	Untimely availability of fertilizers	24	II
iii	High price of manure and fertilizers	14	III
4.	**Related to plant protection**		
i	Lack of knowledge about plant protection chemical	35	I
ii	Higher cost of chemicals	23	II
iii	plant protection chemicals are not satisfactory	22	III
iv	Selected chemicals are not available in govt. store	20	IV
5.	**Related to post harvest technology**		
i	Very high storage charges	57	I
ii	lack of storage facility	25	II
iii	Poor transportation facility	18	III

CONCLUSION

It may be concluded that higher knowledge level was found in selection of soil by marginal and medium farmers, 'harvesting of crop' by small farmers and 'manures & fertilizers' in case of large farmers. The average knowledge level of large farmers was found highest and was lowest in case of marginal farmers. The highest mean value was found in manures & fertilizers of all categories farmers. The lowest mean value was found for marginal farmers with respect to time of sowing, small farmers in seed rate, medium farmers in water management and large farmers in use of improved implements. The major constraints were high wages of labour, unavailability of newly released varieties. high cost of irrigation, high price of manures and fertilizers and lack of knowledge about plant protection chemicals.

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