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Adoption Index of the Respondents Towards Improved Variety of Potato Farming

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Abstract

The extent of adoption of selected improved practices of potato was low and nil for latest technology such as soil testing, seed treatment (34%), seed quantity (20—25 q/ha) and time of sowing such as starting March (78%) of improved variety of potato growers. Majority (54%) of improved variety of potato growers were categorized as having medium level of adoption index.
Key words : Adoption index, Potato farming, Improved variety.

Potato is prone to many diseases and insect pests. Effective management practices have been devised for the major potato diseases and insect pests in India. Besides, chemical control measures, several eco-friendly technologies have been identified or developed; breeding resistant varieties is one of them. Of resistant varieties of potato developed, 41 varieties are resistant to early blight, 24 to late blight, six to potato viruses (tolerant), four to wart and one to cyst nematode. Late blight is the most devastating disease of potato. It occurs every year in the hills and frequently in the plains also. The development of late blight forecasting system for hills and plains has enabled the operation of early warning mechanism for the appearance of the disease, thus reducing the indiscriminate use of fungicide by the farmers. A number of cultural practices have also been standardized to control the diseases and insect pests, proper irrigation, suitable crop rotation, green manuring, deep and hot weather ploughing, and flooding of the potato field have been found to be effective in managing soil-borne diseases like bacterial wilt, common scab, black scurf, soft rot and insect pests like potato tubermoth, white grubs and cut worms. For the control of bacterial wilt prevalent in mid-hills and some pockets in plains, application of bleaching powder and hot/cold weather cultivation have been found to be effective to a great extent. Similarly, the use of boric acid, a safer chemical instead of organo-mercurial compounds in seed treatment against soil and tuber borne diseases, has reduced the pollution to the environment. The adoption of these plant protection technologies by the farmers has considerably reduced the incidence of diseases and insect pests and has been greatly responsible for increased potato production in the country. The use of eco-friendly technologies has also helped in environmentally sustainable potato production (1—4). The present study was planned to study the adoption of farmers towards the improved cultivation practices of potato of the study area.

Methods

Budgam district was selected purposively in Jammu and Kashmir state for the present study as it has highest area about 80% under potato cultivation. Block Chadoora in Budgam district was selected purposively as this block has large area under potato cultivation and comprises good number of villages under potato cultivation with its farmers having good experience and knowledge about potato cultivation. A list of the villages of the selected block was taken from the BDO office. Only those villages were considered as the potato growers who have cultivated more than 10% of the total cultivated area. Then villages can be divided into two groups on the basis of potato cultivation i.e. growers villages and non-growers villages; growers villages were again be listed out in ascending orders of their cultivated area of potato crop. Then five villages were selected randomly. A completed list of all the farmers who cultivated the

Table 1. The rate of adoption of selected improved practices of potato in said seasons.

Name of the practice	No. of improved variety of potato growers	Percentage
1. What improved varieties of potato are you growing ?	32	64
Kufri Jyoti		
Gulmarg special	18	36
2. Are you getting your soil tested. Yes	–	–
3. Do you apply FYM ? Yes	50	100
4. Fertilizer		
Urea	50	100
DAP	50	100
MOP	50	100
Recommended dose	38	76
5. How much insecticides and fungicides do you use to control the diseases and pests. Yes		
Recommended dose	50	100
	35	70
6. Name of the insecticide and pesticide do you use.		
Dithene M-45	34	68
Dithene M-45, Krepton	11	22
Neon, Dithene M-45	6	12
Correct dose	26	52
7. How much yield do you get per hectare from your potato cultivation		
200-225 q/ha	41	82
200-226, 250-350 q/ha	9	18
200-227 correct yield	41	82
8. Quantity of seed q/ha		
20—25 q/ha	40	80
20—26, 10—15 q/ha	3	6
20—27, 30—35 q/ha	7	14
Correct dose	40	80
9. When do you finish a cultural operations in your field ?		
Before 60 days	41	82
Before 30 days	9	18
Before 50 days	–	–
Before 40 days	–	–
Correct	41	82
11. Suitable time for sowing of improved variety of potato		
Starting Mar	39	78
Mid-Mar	11	22
Ending Mar	–	–
Correct time	39	78

potato crops were obtained from the respective village heads. Only those respondents were considered as a potato growers who are cultivating potato crop

Table 2. Adoption index of respondents.

	Respondents	Adoption index		Respondents	Adoption index
1.	36	45	26.	32	40
2.	37	47	27.	33	42
3.	39	49	28.	31	39
4.	38	60	29.	33	42
5.	36	45	30.	34	43
6.	36	45	31.	31	39
7.	37	47	32.	34	43
8.	33	42	33.	29	37
9.	40	50	34.	27	34
10.	38	48	35.	27	34
11.	31	39	36.	25	32
12.	31	39	37.	29	37
13.	33	42	38.	31	39
14.	33	42	39.	29	37
15.	31	39	40.	30	38
16.	31	39	41.	33	42
17.	28	35	42.	32	40
18.	29	37	43.	29	37
19.	31	39	44.	30	38
20.	30	38	45.	35	34
21.	31	39	46.	33	42
22.	32	40	47.	30	38
23.	31	39	48.	32	40
24.	31	39	49.	30	38
25.	31	39	50.	32	40

more than 10% of their cultivated holdings. The potato grower respondents were classified into two groups on the basis of improved potato growers and local variety of potato growers in all the five randomly selected villages. Then 20% improved variety of potato growers were selected randomly in all the five villages. These improved variety of potato grower were 50 in number and the same number of the farmers was also selected as a local variety growers in all the five randomly selected villages. Thus, a total number of 100 farmers constituted the sample for the purpose of this study.

For the extent of adoption of improved potato variety, a set of improved practices of potato were selected to measure the adoption. The scoring was given to each of practices, 1, 2 upto 5. Thus, the total possible scores for all items were calculated. The adoption index was calculated by the following formula :

$$\text{Adoption index} = \frac{\text{Total score of respondents}}{\text{Total possible score}} \times 100$$

Table 3. Adoption index categories of potato growers.

	Adoption index (intervals)	Categories	Potato growers number	Percentage of potato growers
1	0—20	Low	–	–
2	20—40	Medium	27	54
3	40—60	High	23	46
	Total	–	50	100

Results and Discussion

Extent of Adoption of Inproved Variety of Potato

Table 1 shows that 64% of potato growers adopted Kufri Jyoti as an improved variety while as 36% of potato growers adopted Gulmarg special as an improved variety. None of the improved variety of potato growers gets their soil tested; 100% of them applied farm yard manure all used urea, DAP and MOP fertilizers, used insecticides and fungicides to their crops including 68% of them applied dithene M-45, followed by 22% applied dithene M-45, krepton and only 12% of them applied neon, dithene M-45; 82% of them received yield of about 200—250 q/ha and 18% of them about 250—350 q/ha; 80% of them used seed at 20—25 q/ha, 14% used 30—35 q/ha and 6% used 10—15 q/ha.

About 82% of improved variety of potato growers finished cultural operation in their fields before 60 days followed by 18% before 30 days; 78% sown the potato starting from March, to mid-March by 22% of them.

Correct Doses

About 76% of improved variety of potato growers used correct doses of fertilizers; 70% of them used correct dose of seed treatment; 52% used correct doses of insecticides and pesticides; 82% of them received the optimum correct yield; 80% used the correct quantity of seeds/ha; 82% of them completed cultural operation in time; 78% sowed the seeds at the appropriate time (Table 1).

It could be concluded that the extent of adoption was low and nil for latest technology such as soil testing, seed treatment (34%), seed quantity 20—25 q/ha, and time of sowing such as starting March (78%) of improved variety of potato growers (Table 2).

The respondents were categorized to low, medium and high as shown in Table 3.

Thus the majority of 54% of improved variety of potato growers were categorized in medium adoption index and 46% had high adoption index.

Conclusion

It is concluded that the extent of adoption was low and nil for latest technology such as soil testing, seed treatment, seed quantity, time of sowing (March). Majority of 54% of improved variety of potato growers were categorized as having medium adoption index and 46% had high adoption index.

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