



Knowledge extent on IPM practices of farmers about potato production technology

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ABSTRACT

This study examined the in Milkipur block of Faizabad district of Uttar Pradesh to know the training gap of potato growing farmers during the agricultural year 2014-15. A sample of one hundred farmers was selected randomly from the list of 5 purposively selected villages for collection of primary data. A well structured and pretested interview schedule was used for data collection through personal interview method. Any training programme to be very effective must have optimum size of trainees. This provides equal opportunities to the participant to experience their learning. The findings indicate that the most preferred IPM practices expressed by the maximum respondents (74%) were 23-26. The data exposed that most of the respondents did not possess required knowledge concerning to the potato production technology, especially in case of plant protection measures, application and use of manures and fertilizers, field preparation etc. So, there is an urgent need to enhance the good communication and extension system and input service system to make the farmers aware about latest Knowledge.

Key words: potato, IPM practices, Production, Knowledge.

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INTRODUCTION

India in particular and Asia in general are showing rapid growth in potato production. Potato popularly known as 'The king of vegetables', has emerged as fourth most important food crop in India after rice, wheat and maize. In world scenario, India produced 42.34 million tonnes from 1.86 million ha with an average yield of 22.72 tonnes/ ha of potato during 2010-11 (Agricultural statistics at a glance, 2012). Though, during the recent past the productivity of potato in India has registered perceptible increase, but can this level be sustained or enhanced in future, is a matter of concern today. Knowledge of the past trends in area, production and productivity will aid the planners in deciding the growth rates to be achieved in accordance with the planned targets. Besides these, trends in area, production and productivity provide basis for forecasting the future supply.

The new agricultural technologies such as improved crop varieties and use of chemical fertilizers have led to substantial productivity gains. Another factor associated with the growth in productivity is the substantial increase in the use of chemical pesticides, both in terms of area covered by plant protection and quantity of chemicals applied per unit of cropped area. The use of chemical pesticides was extensively adopted, especially by better endowed farmers in case of commercial crops, as farming became more market oriented. However, high and indiscriminate use of pesticides has led to problems such as pest resurgence, resistance, health and environmental hazards on one hand and increased dependence of farmers on external inputs on the other. The market limitations, as reflected in poor quality of pesticides, high interest rates on borrowed capital, unfavourable prices etc., also contributed another dimension to the 'crisis' associated with the indiscriminate use of pesticides. In response to such a scenario, researchers have been trying to develop alternative means of pest management which are known as Integrated Pest Management (IPM) practices.

IPM system as a group of interacting components operating together for a common purpose – to keep the pest populations below the economic threshold levels. These components include cultural, mechanical, physical, biological and lastly chemical measures. The IPM basically involves application/use of a variety of means that aim to manage pest populations below the economic threshold level (FAO, 1971). The input requirements, managerial skills and information needs of IPM therefore vary from those of chemical pest control and hence need to be examined more closely.

Pest control today is accomplished mainly by using chemical pesticides because of its quick and certain action. In vegetables, application of chemical insecticides is very intensive which is clear from the fact that though only 2.6 per cent of cropped area falls under vegetables yet consume 13-14 per cent of the total pesticide use in India. Market based survey showed as high as 75 per cent vegetable samples are contaminated with pesticides Kubrevi (2009) show that age has no impact on the knowledge of growers about improved variety of potato farming, whereas education was associated with knowledge about improved variety of potato farming than less educated growers. It was also found that age has no effect on altitude of potato growers, whereas educated growers have more favourable altitude towards improved variety of potato farming than less educated growers.

RESEARCH METHODOLOGY

The present study entitled “A critical analysis on IPM practices of farmers about potato production technology” in Milkipur Block of Faizabad district (U.P.)” was undertaken during the agricultural years 2014-15. Out of 85 villages in Milkipur block of Faizabad district, 5 villages were selected randomly for this study. A complete list of all mustard growers in the selected villages was prepared. A sample size of 100 respondents was selected from the list of potato growers through proportionate random sampling techniques and the author himself collected data with the help of semi structured and pre-tested interview schedule. Analysis was done with the use of percentage, mean, standard deviation and correlation coefficient to see the relationship between different variables with Knowledge extent.

RESULT AND DISCUSSION

The findings and inferences drawn in respect to the specific objectives of the study on the basis of analysis of relative preference to venues, months, duration, Knowledge extent of IPM practices, methods and follow up activities as perceived by the potato growers by using relevant statistical techniques. The findings of this study have been divided and discussed into following subhead.

Table 1.1 Extent of Knowledge of IPM about Potato crop cultivation

N=100

S. No.	Statement	Per cent	Ranks
1.	Do you know about the summer deep ploughing.	48	XI
2.	Do you know about the recommended seed rate.	76	III
	(a) 10qt/ha.	65	
	(b) 25qt/ha.	32	
	(c) 20qt/ha.	18	
3.	Do you know about the proper spacing.		I
	(a) 45cmX45cm	65	
	(b) 50cmX20cm	32	
	(c) 60cmX25cm	18	
4.	Do you know about the removal of previous crop residues.	45	XI
5.	Do you know about the crop rotation.	85	II
6.	Do you know about the mixes cropping.	25	XVI
7.	Do you know about the lies of the light and pheromonotrap.	66	V
8.	Do you know about the burning of previous crop residues for ratooncrop.	67	IV
9.	Do you know about the hand picking insect-pest.	61	VI
10.	Do you know about the pest monitoring.	59	VII
11.	Do you know about the use of bio-pesticides.		
	(a) Trichoderma	36	
	(b) Bacillus thuringiensis	33	
	(c) Pyrethrum/pyrethrins	16	
12.	Do you know about use of neem-based product.	53	VIII
13.	Do you know about the use of natural enemies.	23	XVII
14.	Do you know about the use of bio-agents.	15	XX
15.	Do you know about the use of bio-fertilizers.	35	XV

16.	Do you know about the use of resistant varieties	42	XII
	(a)KufriThenamalai(LB)	32	
	(b)KufriJyoti(wart disease)	39	
	(c)KufriPukhraj(early blight)	46	
17.	Do you know about the seed treatment.	21	XIX
18.	Do you know about the soil treatment.	50	IX
19.	Do you know about the use of the recommended dose of pesticides.	40	XIII
20.	Do you know about the pesticides application against different pest.	38	XIV
Overall percentage		47.80	

It is obvious from the Table 1.1 That among all 10 agricultural practices of Potato growing the practices like know about, Proper spacing (87.00%) was rank at 1st as far as knowledge possessed by the respondents was concerned. The practice crop rotation rate rank at 2nd rank (85.00%), followed by Recommended seed at rank 3rd (76.00%), Crop residues for ratoon crop 4th (67.00%), Light and pheromone trap at rank 5th (66.00%), Hand picking insect pest at rank 6th (61.00%), Pest monitoring at rank 7th (59.00%), Neem based product at rank 8th (53.00%), Soil treatment at rank 9th (50.00%) and Summer deep ploughing regulators at rank 10th (48.00%), respectively. The overall knowledge index was calculated to be 47.80%. It can be calculated that the extent of knowledge about Scientific Potato growers seems to be satisfactory.

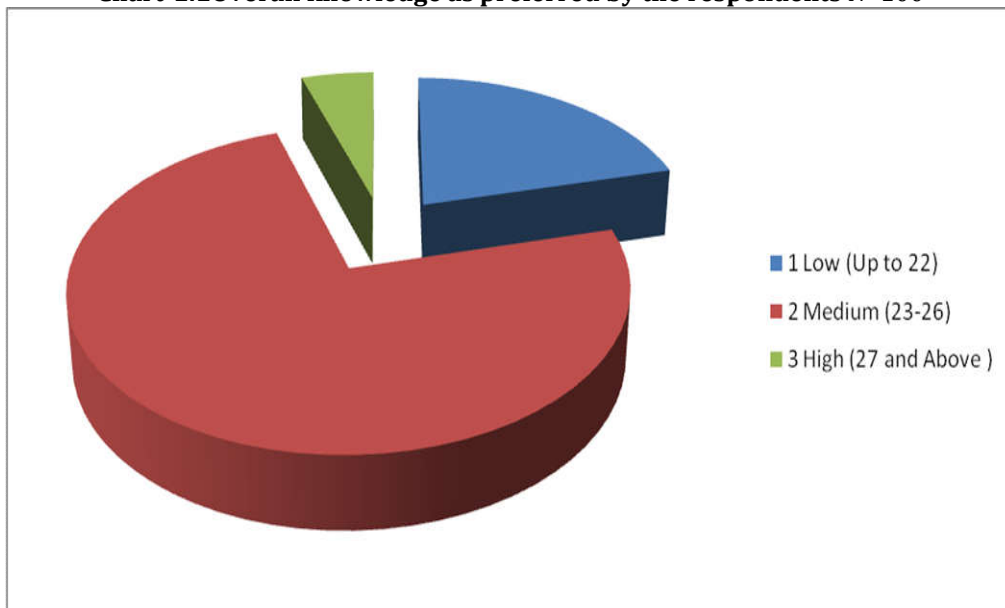
Table 1.2 over all knowledge of respondents N=100

S. No.	categories	Respondents	
		Number	Percentage
1.	Low (Up to 22)	21	21.00
2.	Medium (23-26)	74	74.00
3.	High (27 and Above)	5	5.00
	Total	100	100.00

Mean=24.35,S.D.=2.17, Min.=14,Max=18

The table 1.2 indicates that the knowledge under Potato growers, which focused that maximum respondents (74%) were observed in the medium category (23 to 26) followed by (21%) and 5% for low (up to 22) category and high (above to 27) category respectively. So, the majority of the respondents were found having medium category of the knowledge about Potato growers.

Chart-1.1 Overall knowledge as preferred by the respondents N=100



The Pie chart-1.1 shows the preference of potato growers for knowledge of IPM practices. It appears that the majority of potato growers showed the categorise preferences for knowledge of IPM practices i.e. medium (23-26) (74%), followed by low(up to 22) (21%) and high27 and above (05%), respectively.

Table 2.1 Adoption Extent of Potato growers regarding to IPM practices N=100

S.No.	Statement	Per cent	Ranks
1.	You adopt deep summer ploughing.	20.00	XXI
2.	You adopt removal of previous crop residues.	48.00	IX
3.	You adopt recommended seed spacing.		
	(a) 45cm X 45cm	51.00	VIII(a)
	(b) 50cm X 20cm	22.00	XIX(a)
	(c) 60cm X 25CM	09.00	XXIV(a)
4.	Know adoption of proper spacing.		
	(a) 10qt/ha	51.00	VIII(b)
	(b) 25qt/ha	22.00	XIX(b)
	(c) 20qt/ha	09.00	XXIV(b)
5.	Know adoption of crop rotation.	55.00	VII
6.	Know adoption of mixed cropping.	40.00	XIII
7.	Rouging practice in crop.	10.00	XXII
8.	Hand picking of insect-pest and their destruction.	30.00	XVII
9.	Use of light and pheromone crop.	58.00	VI
10.	Monitoring of Insect-pest.	37.00	XIV
11.	The burning of previous crop residues for ratoon crop.	21.00	XX
12.	Use of bio-pesticides.		
	(a) Trichoderma	32.00	XVI
	(b) bacillus thuringiensis	11.00	XXIII
	(c) pyrethrum/pyrethrins	08.00	XXV
13	Use of bio-agents.	25.00	XVIII
14.	Use of natural enemies.	45.00	XI
15.	Use resistant varieties.		
	(a) kufri thenamalai (LB)	22.00	
	(b) kufri jyoti (wart disease)	35.00	XIX(a)
	(c) kufri pukhraj (early blight)	46.00	X
16.	Use neem-based product.	80.00	III
17.	Use bio-fertilizer.	84.00	II
18.	Apply seed treatment practice.	41.00	XII
19.	Use balance dose of fertilizer.	65.00	IV
20.	Apply recommended dose of pesticides.	64.00	V
21.	Soil treatment.	88.00	I
	Overall percentage	39.13	

It is obvious from the Table 2.1 That among all 10 agricultural practices of potato growers, Soil treatment (88.00%) was rank at 1st as far as knowledge possessed by the respondents was concerned. The Proper spacing 2nd (85.00%), Bio-fertilizers at rank 3rd (84.00%), Neem-based product at rank 4th (80.00%), Recommended seed spacing at rank 5th (75.00%), Resistant varieties at rank 6th (70.00%), Balance dose of fertilizers at rank 7th (65.00%), Recommended dose of fertilizers at rank 8th (64.00%), Light and pheromone at rank 9th (58%) and Crop rotation at rank 10th (55.00%), respectively. The overall adoption index was calculated to be 52.09%. It can be calculated that the extent of adoption about Scientific Potato cultivation seems to be satisfactory.

Table 2.2 Over all adoption of IPM practices of respondents

N=100

S. No.	categories	Respondents	
		Number	Percentage
1.	Low (UP to 5)	23	23.00
2.	Medium (6-10)	58	58.00
3.	High (Above to 11)	19	19.00
	Total	100	100.00

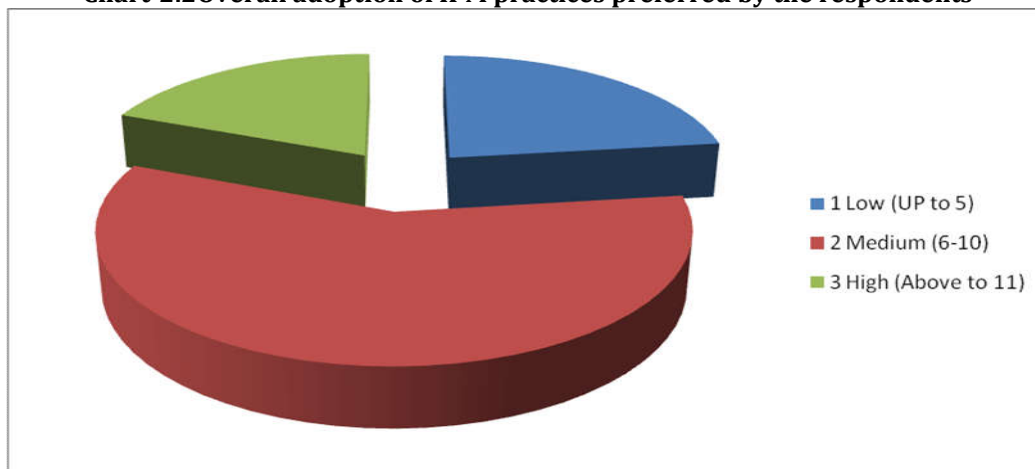
Mean=8.05, S.D. =3.592, Min. =02, Max=18

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The table 2.2 indicates that the adoption under Potato growers, which focused that maximum respondents (58%) were observed in the medium category (6 to 10) followed by (23%) and 19% for low

(up to 5) category and high (11 and above) category respectively. So, the majority of the respondents were found having medium category of the knowledge about potato growers.

Chart-2.2 Overall adoption of IPM practices preferred by the respondents



The data given in Pie chart-2.2 reveals that the most preferred Extent of adoption expressed by the maximum respondents (58%) was 6-10; the next size of group in order of preferences was up to 5 members which were preferred by 23% of the respondents. and high (above to 11) were (19%) respectively.

CONCLUSION

Based on the findings of the study it may conclude that the young generation do not like to do the farming. Hence, this class of people should be encouraged and properly facilitated through farmers; IPM practices youth organizations and government mechanics so that the most powerful and energetic group can be better utilized in the most potential profession of agriculture and its allied section. It has been observed that most of the respondents did not possess required knowledge concerning to the potato production technology, especially in case of field preparation, plant protection measures, application and use of manures and fertilizers etc. So, there is an urgent need to enhance the good communication and extension system and input service system to make the farmers aware about latest knowledge. In accordance of study area it may be concluded that most of the IPM practices for potato cultivation should provide in both the month of September and nearer from the residing area of potato grower. Researcher found that training meeting and group discussion and method demonstration has emerged as best methods of IPM practices hence, these methods may be mostly utilized by training organizers for the better understanding of the potato grower. There is a need of giving more information to the farmers about training institutes, organization along with their training schedules to fulfill the knowledge gap among them.

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