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Effectiveness of Extension Methods for Knowledge and Skill Development

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ABSTRACT

The present study was conducted in Saharanpur and Hapur districts of Western Uttar Pradesh to know the effectiveness of extension methods. The study reveals that before exposure of different extension methods, about 66.87 per cent vegetable growers had medium knowledge of vegetable cultivation and 34.81percent vegetable growers were unskilled regarding package of practices of vegetable cultivation. The vegetable growers gained about 81.50 percent knowledge by the treatment of training + demonstration + literature and 76.25 per cent gained skills by the treatment of training + demonstration + literature. The effect of replication (treatment) on knowledge level of the vegetable growers was higher of training + demonstration + literature (35.00%), ranked in first and the same trend was found in skills improvement. It was found that the training + demonstration + literature was the most effective treatment. The vegetable growers were found in enhancement from 5.63 per cent to 23.63 per cent after exposure of different extension methods in the category of high level of knowledge, this means 319.71 percent knowledge increased in this category. After exposure of different extension methods, the 100 percent vegetable growers were found skilled regarding vegetable production technology, *i.e.* nobody was unskilled after exposure of different extension methods.

Keywords: Area, knowledge, production and productivity, skill, vegetable growers

INTRODUCTION

India is the second largest producers of vegetables in the world next to china with 2.8 per cent of total cropped area under vegetables. The total cultivated area of vegetables in India was 23.8 million hectare, production of 166.6 million tons with productivity of 17.4 tons per hectare during the year 2015-16 (Annual Report 2016-17, Department of Agriculture Cooperation and Farmers Welfare, Ministry of Agriculture & Farmers Welfare Government of India). Our country has progressed significantly during the past six decades in developing high yielding verities/ hybrids of different vegetables with their improved qualities and standardized agro techniques suitable for different agro-climatic conditions. Our per capita consumption has increased from 80-195 g./person/ day. However, the present per capita consumption of vegetables per day is only 195 g. which is below the recommended requirement of 355 g. Keeping in view the above facts, the study was aimed at determining effectiveness of extension methods for knowledge and skill development.

METHODOLOGY

For the investigation two district Saharanpur & Hapur were selected on the basis of maximum and minimum area, production and productivity of vegetables. From each district two blocks were selected *i.e.* Baliyakheri and Rampur Maniharan from Saharanpur and Hapur block and Dhaulana block from

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Hapur district. From each block four villages were selected purposively. Thus, total 16 villages were selected and from each village 10 vegetable growers were selected randomly. The total sample size was of 160 vegetable growers for the investigation. The survey was conducted through personal interview with the help of pre-structured interview schedule. After collection of data, data were analyzed, tabulated and find out the percentage and mean.

Measurement of knowledge level: It was operationalized as knowledge gained by participants on various aspect of package of practices of vegetable cultivation through different treatments of extension methods *i.e.* training, demonstration, literature, training + demonstration, demonstration +literature, training + literature and training + demonstration + literature. Knowledge of vegetable growers was measured by asking 20 questions regarding package of practices of vegetable cultivation. A score of one for each correct answer and zero for incorrect answer was assigned and total score for each practice was worked out. On the basis of mean knowledge scores, the vegetable growers were categorized into low, medium and high knowledge of levels.

Skill is the ability to do something well, a certain competency or proficiency. Skills are required or developed through direct experiences, training and demonstration and they can require through sustained efforts. Technical skills are required by the farmers to perform the farm operation right from the preparation to harvesting and post-harvesting techniques in agriculture and allied areas for increasing productivity and income. Skill of farmers may be in learning, decision making, problems solving, leadership, teamwork, communication, personal qualities such as responsibilities, self esteem etc. Skill and competency involve physical and mental co-ordination in performing a task (Boom, 1956). Psycho-motor learning is all to gather a different operant learning, in which a skill is required. Skill component is the main activity of agricultural technologies. Most of the agricultural technologies require skill perfection in technological components for its dissemination and adoption at field level. Due to lack of skill and knowledge most of the proven technologies remains confined to research stations or discontinued by the stakeholders. The studies so far conducted in India were mainly based on verbal expression or self perceived methods (Chandrskandan and John Knigh,1988 and Singh,1988). However, Singh and Deshpande (1967) did not appreciate the measurement of skill through verbal test as this type of studies does not reflect real picture about competency and ability of the persons to perform a particular techniques.

RESULTS AND DISCUSSIONS

The data presented in Table 1, revealed that 66.87 per cent vegetable growers were having medium level of knowledge regarding vegetable cultivation followed by 27.50 per cent were having low level of knowledge, and the remaining 5.63 percent were having high level of knowledge regarding vegetable cultivation. Ghaswa *et al.* (2013) reported that 42.86 per cent respondents were having medium knowledge level, while 32.14 per cent respondents were having high knowledge level and the remaining 25.00 per cent low knowledge level about recommended cultivation practices of cauliflower.

Table 1: Knowledge level of the vegetable growers regarding vegetable cultivation before exposure of different extension methods

Knowledge Levels	No. of Respondents	Percentage
Low Level < 6.67	44	27.50
Medium (6.67-13.33)	107	66.87
High Level > 13.33	09	5.63

The data presented in table 2, reveals that overall average 43.4 per cent vegetable growers were partially skilled regarding vegetable cultivation followed by 21.72 per cent vegetable growers were fully skilled and the remaining 34.81 per cent vegetable growers were unskilled regarding package of practices of vegetable cultivation.

Table 2: Skill level of the vegetable growers regarding vegetable cultivation before exposure of different extension methods

(n = 160)

Improved package of practices	Skills					
	Fully		Partially		Unskilled	
	No.	%	No.	%	No.	%
Selection of soil for nursery	33	20.63	64	40.00	63	39.37
Soil treatment	42	26.25	58	36.25	60	37.50
Selection of improved varieties	40	25.00	79	49.37	41	25.63
Seed rate	36	22.50	70	43.75	54	33.75
Nursery sowing time & methods	33	20.62	74	46.25	53	33.12
Nursery Management	33	20.62	74	46.25	53	33.13
Appropriate time and methods of transplanting	36	22.50	67	41.87	57	35.62
Preparation of main field for transplanting of veg. park	29	18.13	76	47.50	55	34.38
Planting distance	22	13.75	83	51.87	55	34.37
Treatment of seedling	15	9.38	46	28.75	99	61.87
Balance use of manures, fertilizers and micronutrients	41	25.63	43	26.87	76	47.50
Timely irrigation management	25	15.62	86	53.75	49	30.63
Inter culture crop management	27	16.88	76	47.50	57	35.62
Weed management	39	24.37	76	47.50	45	28.13
Use of plant growth regulators	42	26.25	67	41.87	51	31.88
Plant protection management	44	27.50	53	33.12	63	39.38
Timely harvesting	40	25.00	72	45.00	48	30.00
Grading	23	14.37	88	55.00	49	30.63
Packing	48	30.00	69	43.13	43	26.87
Marketing	47	29.37	70	43.75	43	26.87
Overall average percentage	-	21.72	-	43.47	-	34.81

It was found from the data in Table 3 that after exposure of different extension methods, overall average percentage knowledge gain by the vegetable growers was in the treatment of control, training, demonstration, literature, training + demonstration, demonstration + literature, training + literature and training + demonstration + literature that is 28.25, 40.00, 51.75, 34.00, 70.00, 62.75, 58.25 and 81.50 percent respectively.

The data presented in table -4 reveal that the effect of replication (treatment) on knowledge level of the vegetable growers were higher for training + demonstration + literature (35.oo%, ranked first), training + demonstration (30.00 %, ranked second), demonstration + literature (27.00%), demonstration (25.00 %), training + literature (24.00%), training (21.00%), literature (19.00%) and control (8.00%) respectively. Knight and Chaudhary (1998) also reported that method demonstration was the most effective medium in behavioral component of farmers. Babu *et al.* (2007) reported that 52.22 per cent of respondents had a middle level of knowledge, while 47.78 per cent had high level of knowledge regarding vegetable production technology and they suggested that relevant training will definitely improve the knowledge level of the vegetable cultivation**.** Chaturvedi *et al.* (2010) reported that farmers had knowledge ranged from 53.33 to 93.00 per cent in all improved practices, whereas the distant farmers possessed knowledge about all practices, ranged from 40.00 to 60.00 per cent. It is suggested that knowledge gap could be bridged up by way of intensive training to them about these practices in time bound frame.

Table 3: Improvement in knowledge level of the vegetable grower after exposure of different extension methods

Treatment	Replication							
	C	T	D	L	T+D	D+L	T+L	T+D+L
Selection of soil for nursery	25	40	50	30	65	60	55	80
Soil treatment	35	50	60	40	75	70	65	85
Selection variety	40	55	65	45	80	70	65	90
Seed rate	30	45	55	40	75	65	60	85
Nursery sowing time & methods	25	35	45	30	70	60	55	80
Nursery management	20	30	40	25	65	55	60	80
Appropriate time & methods of transplanting	30	40	50	35	65	60	55	75
Treatment of seedling	15	25	35	20	50	45	40	60
Preparation of main field for transplanting	25	35	45	30	60	55	50	70
Planting distance	30	40	50	35	65	60	55	75
Balance use of manure, fertilizer & micronutrient	25	35	50	30	70	65	60	80
Timey irrigation management	30	40	55	35	70	65	60	85
Weed management	35	45	60	40	75	70	65	85
Inter culture crop management	30	40	55	35	70	65	60	80
Use of plant growth regulator	15	25	40	20	65	55	50	75
Plant protection management	25	40	55	35	75	65	55	90
Timely harvesting	40	55	65	45	80	75	70	95
Grading	30	45	60	40	75	70	65	90
Packing	15	25	40	20	70	50	55	75
Marketing	45	55	60	50	80	75	65	95
Overall average percentage	28.25	40.00	51.75	34.00	70.00	62.75	58.25	81.50

Table 4: Effect of extension methods on knowledge level of the vegetable grower regarding vegetable production technology after exposure of different extension methods

Treatment	Level (%) on knowledge		
	Low (6.67)	Medium(6.67-13.33)	High (Above 13.33)
Control	37	55	8
Training	19	60	21
Demonstration	5	70	25
Literature	21	60	19
T+D	5	65	30
D+L	8	65	27
T+L	6	70	24
T+D+L	0	65	35
Overall average (%)	12.62	63.75	23.63

It was found that enhancement in knowledge of vegetable growers from 5.63 percent to 23.63 percent after exposure of different extension methods was in category of higher level of knowledge, the data presented in Table 5, this means knowledge level enhanced 319.71 in higher level of knowledge category. Singh *et al.* (2003) reported that with a combination of three extension methods, 40 percent farmers were found to be in high knowledge category which was nil before exposure of extension methods.

Similar results were observed for all the other extension methods. Change in knowledge of the farmers on exposure to training programme was assessed in subject matter areas and other extension methods were demonstration and literature.

Table 5: Knowledge enhancement of the respondents

Level of knowledge	Before exposure	After exposure
Low (6.67)	27.50	12.62
Medium (6.67-13.33)	66.87	63.75
High (Above 13.33)	5.63	23.63

The data presented in Table 6 revealed that after exposure of different extension methods, overall average percentage of skill gained by the vegetable growers in the treatment of control, training, demonstration, literature, training + demonstration, demonstration + literature, training + literature and training + demonstration + literature were 24.25, 36.00, 42.25, 33.50, 64.75, 54.25, 50.00, 76.25 percent respectively.

Singh and Yadav (2007) reported that among different media, methods demonstration cum skill teaching was found most effective in skill development and dissemination of technologies.

Table 7: After exposure of different extension methods level of skill of the vegetable grower regarding vegetable production technology

Treatment	Level of skill in percentage		
	Low (6.67)	Medium (6.67-13.33)	High (Above 13.33)
Control	41	55	04
Training	19	60	21
Demonstration	05	70	25
Literature	21	60	19
T+D	05	65	30
D+L	08	65	27
T+L	06	70	24
T+D+L	02	63	35
Overall percentage (%)	13.37	63.50	23.13

Table 6: Improvement in skill of vegetable grower after exposure of different extension methods

Treatment	Replication							
	C	T	D	L	T+D	D+L	T+L	T+D+L
Selection of soil for nursery	15	30	40	20	55	50	45	70
Soil treatment	25	40	50	20	65	60	55	75
Selection variety	35	50	60	40	75	65	70	85
Seed rate	25	45	55	40	75	65	60	90
Nursery sowing time & methods	30	40	50	35	75	60	55	85
Nursery management	25	35	45	30	70	60	65	85
Appropriate time & methods of transplanting	15	30	45	25	60	55	50	75
Treatment of seedling	20	25	35	25	50	45	40	70
Preparation of man field transplanting	25	30	40	25	55	50	45	65
Planting distance	30	35	45	30	60	55	50	70
Balance use of manure, fertilizer & micronutrient	25	30	50	65	60	55	0	65
Timey irrigation management	35	50	30	60	70	55	50	70
Weed management	30	40	55	35	65	60	50	75
Inter culture crop management	20	35	45	30	60	45	55	70
Use of plant growth regulator	10	20	35	15	55	45	40	75
Plant protection management	05	15	30	15	60	50	45	70
Timely harvesting	35	55	65	50	75	70	65	85
Grading	25	40	55	35	65	60	55	80
Packing	15	25	40	20	70	55	45	75
Marketing	40	50	55	45	75	70	60	90
Overall average percentage	24.25	36.00	42.25	33.50	64.75	54.25	50.00	76.25

The Table 7, indicates that the effect of replication(treatment) on skill level of the vegetable growers were higher of training + demonstration + literature (35.00% ranked first), training + demonstration (30.00% ranked second), demonstration + literature (27.00%), demonstration (25.00%), training + literature (24.00%), training (21.00%), literature (19.00%) and control (4.00%) respectively. After exposure of different extension methods it was found that 63.50 percent vegetable growers were having medium level of skill followed by 23.13 percent were having high level of skill and the remaining 13.37 percent vegetable growers had low level of skill regarding vegetable production technologies.

CONCLUSION

It can be concluded on the basis findings before exposure of different extension methods vegetable growers were having medium knowledge level regarding vegetable production technology and most of the vegetable growers were unskilled regarding package of practices of vegetable cultivation. The maximum knowledge and skills gained by the treatment of training + demonstration + literature, the effect of replication (treatment) on knowledge and skills level of the vegetable growers were higher of training + demonstration + literature. It was found that the training + demonstration + literature was the most effective treatment. The more knowledge enhancement was found in the higher and lower category vegetable growers. There was nobody unskilled after exposure of different extension methods.

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