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RESEARCH ARTICLE

Gain in Knowledge Level of Farmers about Recommended Agricultural Practices after Watching Video Films

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ABSTRACT

Video as a communication aid helps in understanding the cultivation and management practices of crop production which are complex to understand by verbal communication alone. Videos make a vivid and lasting impression on the viewers. This study was conducted to find out the gain in the knowledge level of farmers about recommended agricultural practices after watching video films. Multi-stage random sampling techniques were employed. A total of 200 farmers were selected randomly without replacement method from the two districts of Punjab State. The data were collected by following the personal interview method with the help of a well-structured interview schedule and data were tabulated and analysed by using appropriate statistical tools.

The study was conducted in 2015-16. There was a significant gain in knowledge of farmers regarding soil testing, seed treatment and leaf colour chart after watching the video films. The results also indicate that 81.50% and 60% of the respondents had medium level gain in knowledge after watching the video regarding soil testing, seed treatment respectively. 39.50% of the respondents were found to have medium gain in knowledge regarding the leaf colour chart after watching the video.

KEYWORDS: Video communication, Gain in Knowledge, Soil testing, Seed Treatment, Leaf Colour Chart (LCC)

Introduction

Over the past ten years, farmer-to-farmer videos have been developed and these videos have effectively increased the capacity of the rural poor to innovate through enhanced skills and knowledge. Farmer-to-farmer videos have helped farmers to teach and learn from each other through the creation of networks enabling the exchange of information and resources. While face-to-face education is costly and unattainable for most rural people, the video has proven to be an efficient way to democratise knowledge while engaging farmers with the evolving market, whether they are literate or not.

Audio and video-based mechanisms are used to support reporting and to build trust among virtual communities of participants and its approach works with existing, people-based extension systems to amplify their effectiveness. Local social networks are tapped to connect farmers with experts; the thrill of appearing "on TV" motivates farmers. The local presence makes it possible to connect with farmers on a sustained basis and it emphasises the development and delivery of digital content to improve the cost-effectiveness of organisation extension. The goal is to strengthen existing institutions and groups, not to create new ones.

Modern technological know-how is being utilised by the Government, Non-Government, State Agricultural Universities and private organisations for the purpose of rural development. Advanced communication technologies are incorporated in the field of extension for self-sustainable development of rural areas and in providing them self-sufficiency and decision making power. The advancements of science and technology in the field of agriculture, education, health services, women welfare and grass root development can be applied to ensure an accountable, responsive and citizen-friendly atmosphere for rural people.

Learning is made easier when ideas are expressed in pictures and the fact that 70% of communication to individuals is non-verbal such that visual presentation helps to overcome illiteracy

and language barriers[1]. Video films based on new agricultural technologies appear to be an appropriate extension tool. This medium is suited for the transmission of skills, information and knowledge and allows for the standardisation of information for accurate transmission from a technical source, in situations where high quality and number of trainers may not be available. Improvement in the content of the video films is constantly required as significant development has been seen during the last decade. The practical utility of video films will be greatly enhanced when the videos are presented based on reactions of the viewers and their level of satisfaction. For achieving the purpose informative videos on agriculture can play a vital role in disseminating information.

This study has been planned to know the gain in knowledge of farmers which can help the scientist as well as extension workers at a different level to use such videos for planning research as well the extension projects for the dissemination of agricultural information to farmers.

Methodology

The study was conducted in two districts of Punjab, i.e. Ludhiana and Shri Muktsar Sahib. From each district, one block was selected randomly and further from each block five villages were selected randomly. From each village, twenty farmers were selected for the investigation. Thus, a total of 200 farmers were selected randomly without replacement from ten villages of two districts for the present study.

The interview schedule was developed for data collection after consulting the experts. The interview was conducted in the local dialect, i.e., Punjabi. The respondents were interviewed at their home, or their farms and responses were recorded on the spot. The data collected from the respondents were scored, tabulated and analysed by using both parametric and non-parametric statistical tests. Computer-based SPSS (Statistical Package for Social Sciences) was used for applying different statistical tests. In order to find the relationship between dependent variable and independent variables, Karl Pearson correlation coefficient was calculated.

Results

It relates the information regarding mass media exposure of the respondents which include radio, TV, newspaper, magazine and educational films. The information pertaining to the respondents has been given in Table 1.

Respondents were categorised into three categories based on their mass media exposure. It is clear from the data given in Table 1 that 11.50 per cent of the respondents always listen to a radio programme, 26.00 per cent of the respondents sometimes listen to a radio programme, 62.50 per cent had never listened. More than half of the respondents (60.00%) watch TV programme always, 33.50 per cent of the respondents watch TV programme sometime, 06.50 per cent had never watched a TV programme.

About 36.50 per cent of the respondents always read a newspaper, 45.50 per cent of the respondents sometimes read a newspaper, whereas 18.00 per cent had never read a newspaper. About 11.00 per cent of the respondents read magazine always, 31.50 per cent of the respondents read magazine sometime, 57.50 per cent had never read a magazine. Only 03.50 per cent of the respondents watch educational films always, 18.00 per cent of the respondents watch educational films sometimes, 78.50 per cent had never viewed educational films. These findings are in contradiction with Singh[2].

Table 1: Distribution of respondents according to their mass media exposure

S. No.	Different mass media	Category	Respondent
1.	Radio	Always	23 (11.50)
		Sometime	52 (26.00)
		Never	125 (62.50)
2.	T.V.	Always	120 (60.00)
		Sometime	67 (33.50)
		Never	13 (6.50)
3.	Newspaper	Always	73 (36.50)
		Sometime	91 (45.50)
		Never	36 (18.00)
4.	Magazine	Always	22 (11.00)

		Sometime	63 (31.50)
		Never	115 (57.50)
5.	Educational films	Always	7 (3.50)
		Sometime	36 (18.00)
		Never	157 (78.50)
Figures in parenthesis are percentages			

Gain in Knowledge Level of Farmers after Watching Soil Testing Video

The data given in Table 2 shows the gain in knowledge regarding soil testing before and after watching the videos. The data shows that 56.50 per cent of the respondents knew the significance of soil testing before watching soil testing video and 85.50 per cent came to know the significance of soil testing after watching the soil testing video.

About 80 per cent of the respondents were aware of a suitable time for soil sampling before watching the video whereas 89 per cent of the respondents came to know the recommended time period suitable for soil sampling after watching the video.

Only 36.50 per cent of the respondents knew the shape of the pit to be made for collecting the soil sample before watching the video and after watching video 90.50 per cent came to know the shape of the pit to be made for collecting the soil sample showing a significant increase in the number of farmers. The gain in knowledge was also noticed from 80.50 per cent to 98 per cent about the kind of the soil sample to be taken for soil testing. Regarding the soil sample to be taken, only 39 per cent of the farmers were aware before watching the video and after watching video 84.50 per cent of the farmers were aware of this.

The soil sample should be taken from the vacant field: 70 per cent of the farmers were aware before watching the video but a majority of the farmers (96.50 per cent) became aware after watching the video; 61.50 per cent of the farmers were aware of the field from which the soil sample should be taken and 84.50 per cent of the farmers gave positive responses after watching the video.

Regarding the use of pesticides which can affect the soil and environment, 56.50 per cent farmers knew about this before watching the video and after watching the video, there was an increase in the number of farmers (77%). Awareness of how deep the soil sample should be taken for the shallow-rooted crop: 29 per cent farmers were aware before watching the video and after watching the video, 78.50 per cent of the farmers became aware of the fact. In case of deep-rooted crops, the farmers were asked to give their response about the depth of soil sample to be taken: 24.50 per cent were aware before watching the video and a total of 71 per cent of the farmers became aware after watching the video.

In case of different trees, only 15.50 per cent of farmers were aware of the depth of soil sample to be taken from the field – there was an increase in the number of farmers (69%) after watching the video. Only 27 per cent of farmers knew the quantity of soil sample to be taken before watching the video and there were 79 per cent farmers who became aware of the quantity of the soil sample after watching the video.

Table 2: Distribution of respondents according to gain in knowledge regarding watching soil testing video

Statements (Recommended Practices)	**Before**	**After**
Come to know about soil health testing. (Application of fertilizer)	113 (56.50)	171 (85.50)
Time period suitable for soil sampling. (Before sowing)	141 (70.50)	178 (89.00)
The shape of the pit should be digging for collecting the sample. (V shape)	73 (36.50)	181 (90.50)
Kind of sample should be taken for soil testing. (only soil)	161 (80.50)	196 (98.00)
Kind of information of field taken with the soil sample. (Farmer's field information)	78 (39.00)	169 (84.50)
A soil sample should be collected from the field. (Vacant field)	140 (70.00)	193 (96.50)
Part of the field the sample should be taken. (4 corners & centre of field)	123 (61.50)	169 (84.50)
Excess uses of pesticides have an effect on the environment. (Harmful effect)	113 (56.50)	154 (77.00)

The soil sample should be taken for the shallow-rooted crop. (15 cm)	58 (29.00)	157 (78.50)
The soil sample should be taken for the deep-rooted crop. (30 cm)	49 (24.50)	142 (71.00)
The soil sample should be taken for the tree. (1 meter)	31 (15.50)	138 (69.00)
The quantity of soil sample needed for testing. (500 gm)	54 (27.00)	158 (79.00)
Mean	5.405	9.24
SD	1.88	1.32
Mean%	49.13	84.00
%change	70.97	
Paired t-value	23.59**	

Thus from the above data, it can be concluded that there was a significant gain in knowledge regarding different aspects of soil testing after watching the video and the mean score was 5.405 before watching the video and 9.24 was after watching the video whereas standard deviation was 1.88 and 1.32 before and after watching the video. These findings are in line with Meena *et al.*[3] and Van[4].

Gain in Knowledge Level of Farmers after Watching Seed Treatment Video

Data given in Table 3 shows the gain in the knowledge level of the respondents regarding seed treatment after watching the video.

Data given in Table 3 shows the gain in knowledge noticed about the kind of seed to be taken for sowing: it was 67.50 per cent to 85.50 per cent. Regarding the disease control with seed treatment, 51.50 per cent of farmers were aware before watching the video and after watching the video, 85.50 per cent of farmers were aware of this. There were 63.50 per cent of farmers knowing about the quantity of pesticides to be used before watching the video and there were 85.50 per cent of farmers who came to know about the quantity of pesticides to be used after watching the video. 61 per cent farmers were aware of the appropriate time period for checking the vigourness of seed before watching the video whereas 79.50 per cent of farmers gave a positive response after watching the video.

For knowing the awareness of the farmers regarding the kind of floor to be used for drying of the seed, 60.50 per cent farmers knew before watching the video and after watching the video, there was an increase in number of farmers (87.50%). When 5-7 number of seeds (per 1000) are affected with Karnal bunt then such seeds should not be used, only 22.50 per cent of farmers were aware of this before watching the video and after watching the video, half of the farmers were aware of this. Only 39 per cent of farmers knew about the germination percentage of seed before watching the video and after watching the video, there was an increase in the number of farmers which was 71.50 per cent of farmers who came to know about the germination percentage of seed. Earlier, 34 per cent farmers were aware of the quantity of vitavax to be used for the treatment of 40 kg seed before watching the video and after watching the video, 70.50 per cent farmers were aware of this.

Thus, from the above data, it can be concluded that there was a significant gain in knowledge regarding different aspects of seed treatment after watching the video and the mean score was 3.995 before watching the video and 6.155 after watching the video whereas standard deviation was 1.706 and 1.38 before watching the video and after watching the video, respectively. These findings are in line with Abrhaley[5].

Table 3: Distribution of respondents according to gain in knowledge regarding seed treatment after watching vide

Statements (Recommended Practices)	**Before**	**After**
Kind of seed should be taken for sowing (Recommended by PAU)	135 (67.50)	171 (85.50)
Disease can be controlled after seed treatment (Loose smut & Flag smut both)	103 (51.50)	171 (85.50)
Quantity of pesticides needed after treatment (Decrease)	127 (63.50)	171 (85.50)
Period of time appropriate for checking vigour of the seed (Before sowing)	122 (61.00)	159 (79.50)
Kind of floor to be used for drying the seeds (*Pacca* floor)	121 (60.50)	175 (87.50)

Number of seeds (per 1000) affected with Karnal bunt, then seed should not be used (5-7)	45 (22.50)	100 (50.00)
Germination of seed should be more than (90%)	78 (39.00)	143 (71.50)
Quantity of Vitavax needed for treatment of 40 kg of seed (120 gm)	68 (34.00)	141 (70.50)
Mean	3.995	6.155
SD	1.706	1.38
Mean%	49.87	76.93
%change	54.26	
Paired t-value	11.54**	
****- significant at 0.01 per cent level.** ***Figures in parenthesis are percentages***		

Gain in Knowledge Level of Farmers after Watching Leaf Colour Chart (LCC) Video

The gain in knowledge regarding LCC has been discussed in Table 4. It is related to the gain in knowledge regarding the leaf colour chart after watching the video. Figures given in Table 4 indicate that out of a total number of farmers only 17 per cent were aware of which strip of LCC to be compared with the leaf of wheat before watching the video and after watching the video, 84.50 per cent were aware of this.

Gain in knowledge was also noticed about the LCC support to the decision whether to apply fertilizer; it was 18.50 to 85.50 per cent of the farmers before and after watching the video respectively. 63 per cent farmers were aware of the outbreak of insect pests affected with the overuse of fertilizers before watching the video and after watching the video 85.50 per cent of farmers became aware of this. Only 28.50 per cent of the farmers knew about the outbreak of insect pest effects with the dark green colour of the crop, whereas 82 per cent of the farmers gave correct answer after watching the video. For checking the knowledge of farmers regarding the interval of days to be taken for the use of LCC, only 11 per cent of farmers knew before watching the video and after watching the video, there was an increase in the number of farmers (60.50%).

Only 16 per cent of the farmers knew the portion of leaf to be compared with LCC before watching the video while 56 per cent of farmers came to know about this after watching the

video. The quantity of urea applied if the average colour of crop is lighter than strip 4 of LCC: only 14 per cent of farmers were aware before watching the video and 64 per cent after watching the video.

Thus, from the above data, it can be concluded that there was a significant gain in knowledge regarding different aspects of leaf colour chart after watching the video and the mean score was 1.68 before watching the video and 5.205 was after watching the video. The standard deviation was 1.19 and 1.22 before and after watching the video respectively. These findings are in line with Vidya *et al.*[6].

Table 4: Distribution of respondents according to gain in knowledge regarding Leaf Colour Chart (LCC) after watching video

Statements (Recommended Practices)	**Pre-test**	**Post-test**
Strip of LCC should be compared with a leaf of the wheat crop. (4 strips)	34 (17.00)	169 (84.50)
LCC support the decision (Use of fertilizer)	37 (18.50)	171 (85.50)
The outbreak of insect pests affected with the overuse of fertilizer. (Increase in insect pests)	126 (63.00)	171 (85.50)
The outbreak of insect pest affected with the dark green colour of crop. (Increase in insect pests)	57 (28.50)	164 (82.00)
Interval of days should be taken for use of the LCC. (7-10)	22 (11.00)	121 (60.50)
A portion of leaves in the plant should be compared with LCC. (Upper leaf)	32 (16.00)	112 (56.00)
The average colour of crop lighter than strip 4 of LCC then how much quantity of urea applied? (25 kg)	28 (14.00)	128 (64.00)
Mean	1.68	5.205
SD	1.19	1.22
Mean%	24.00	74.35
%change	209.79	
Paired t-value	14.11**	
****- significant at 0.01 per cent level.** ***Figures in parenthesis are percentages***		

Categorisation of Respondents According to their Gain in Knowledge Level Regarding Soil Testing After Watching Video

Data given in Table 5 indicates that more than 81.50 per cent of the respondents had medium gain in knowledge and 11.50 per cent had high gain in knowledge. Only 7 per cent of the respondents were found to have low gain in knowledge regarding soil testing after watching the video.

Table 5: Distribution of respondents according to the category of gain in knowledge level after watching soil testing video

S. No.	Category	Frequency (n=200)
1.	**Low (0-6)**	14 (7.00)
2.	**Medium (6-207)**	163 (81.50)
3.	**High (207-800)**	23 (11.50)
Figures in parenthesis are percentages		

Categorisation of Respondents According to their Gain in Knowledge Level Regarding Seed Treatment after Watching Video

Data given in Table 6 indicates that more than 60 per cent of the respondents had medium gain in knowledge and 25 per cent had low gain in knowledge. Only 13.50 per cent of the respondents were found to have high gain in knowledge regarding seed treatment after watching the video.

Table 6: Distribution of respondents according to the category of gain in knowledge level after watching seed treatment video

S. No.	Category	Frequency (n=200)
1.	**Low (0-102)**	50 (25.00)
2.	**Medium (102-288)**	123 (61.50)
3.	**High (288-750)**	27 (13.50)
Figures in parenthesis are percentages		

Categorisation of Respondents According to their Gain In Knowledge Level Regarding Leaf Colour Chart (LCC) After Watching Video

Data given in Table 7 indicates that 39.50 per cent of the respondents had high gain in knowledge and 32.50 per cent had

low gain in knowledge. 28 per cent of the respondents were found to have medium gain in knowledge regarding LCC after watching the video. As far as the different categorisation of gain in knowledge level after watching the video about soil testing, seed treatment and leaf colour chart. These findings are in line with the finding of Abrhaley[5] and Saleem *et al.*[7].

Table 7: Distribution of respondents according to the category of gain in knowledge level after watching leaf colour chart video

S. No.	Category	Frequency (n=200)
1.	**Low (0-175)**	65 (32.50)
2.	**Medium (175-347)**	56 (28.00)
3.	**High (347-650)**	79 (39.50)

Conclusion

Information related to agriculture is increasing day by day but its transfer to the farmers through the appropriate media is lagging behind which is a great challenge to the extension education mechanism and research system. Thus it is very important that the required information should be transferred at the appropriate time with the best use of appropriate and available media. Educational films and videos have been developed as a new method for the transfer of technology. Advance communication technologies should be incorporated into the overall extension education and research system which can help the farmers in decision making for the adoption of farm technology.

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