The Journal of Animal & Plant Sciences, 27(3): 2017, Page: 991-995
ISSN: 1018-7081

IMPACT OF FARMER FIELD SCHOOL APPROACH ON THE COMPETENCY OF THE FARMERS

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ABSTRACT

The present study was conducted in the Lahore district to analyze the impact of Farmer Field School (FFS) approach on the competency of the farmers. The population for the study was consisted of both the registered and non-registered farmers under the FFS approach in the public sector in Lahore district. A sample was drawn from the entire population of twenty four FFSs of Lahore district, by using simple random sampling technique. Out of twenty four, eight FFSs were selected randomly and from each FFS eight registered farmers was interviewed, thus the total sample size of registered farmers was sixty four. The non-registered farmers (non-member farmers) were also interviewed to make the research result more authenticated. Thus the number of non-registered farmers was also sixty four. Hence the total sample frame was 128 farmers. The data were collected with the help of a pre-tested and validated interview schedule especially designed for this purpose. The data were analyzed by using computer software Statistical Package for Social Sciences (SPSS). Analysis of the data shows that the farmers' competency in the conduction of agricultural activities land preparation and direct sowing were top in rank order in member and non-members' farmers. While on the other hand member farmers' competency in controlling harmful insects was at the bottom in rank order, however, non-members had lowest competency in conduction of Agro Ecosystem Analysis (AESA) activity. T-test clearly indicates that all aspects of competency in undertaking the agricultural activities had significant difference in favour of member farmers. It means member farmers had more competency in agriculture as compared to non-member farmers.

Keywords: Farmer Field School, competency, farmers

INTRODUCTION

Farmer Field School is a well-known educational and extension approach throughout the world. Such schools employ a group approach and experiential learning to assist farmers in decision making, solving the problem and learning latest techniques (Davis *et al.*, 2012). It is a learning approach adopted in a group and has been utilized by a number of governments, international agencies and NGOs to educate the farmers (Bartlett, 2005).

The Farmer Field School program of study is planned to assist the farmers in developing skills to identify the local problems, conduct analysis, formulate solutions and draw conclusions. Further, it is used to test which solution is most suitable under the respective conditions (Gotland *et al.*, 2004). The other developmental benefits that produced Farmer Field School are broadly described as empowerment, training, research, advocacy and marketing (Khisa, 2002). The salient features of Farmer Field School are following: (a) partnership (researchers and field workers consider farmers as their cohorts, and deal with them accordingly), (b) farmer-centered approach (the Farmer Field School approach includes intelligent, innovative, and progressive farmers whose skills and knowledge are refined, and offered for the benefit of the fellow farmers and nearby communities), and (c) integrated curriculum (as a components of farm are broken apart and examined in detail, so that the farming community are encouraged to consider about the entire system and the relations between components of different systems. In this view the Farmer Field School approach in agriculture is a holistic approach) (Bajwa, 2010).

Since independence, Pakistan has experienced several models to strengthen the farming community, but unluckily all of them were to deal with the problems and site-specific needs of the farming community (Masud, 2007; Rehman *et al.*, 2013). These programs intended to build the rural infrastructure and educate the farmers to adopt the latest agricultural techniques and eventually to raise the farm yield by reducing the gap between average and potential yield of the indigenous varieties. Unfortunately, a huge number of farming community is still illiterate and ignorant of the modern techniques. Therefore, the Department of Agriculture (Extension), Govt. of the Punjab scaled-up a well-tested extension approach, Farmer Field School in 15 districts of province, to mobilize farmers towards empowerment in making decisions regarding their crop management practices. The approach primarily focuses on capacity building of

the farmers. The farmers are helped out to learn by themselves through experience, knowledge sharing, and active participation in group activities. The intention of the present study was to critically examine the impact of Farmer Field School approach on the competency of the farming community and also to see the possibility of bringing further improvements in Farmer Field Schools and extension teaching methods, that lead to improve farmers' livelihoods and to provide dynamic evidence of the impact of Farmer Field Schools on farming community.

MATERIALS AND METHODS

The present study was conducted in the Lahore district. The population for the study was consisted of the farmers registered under Farmer Field School (FFS) approach (named as member farmers) and the farmers not registered under Farmer Field School (FFS) approach (named as non-member farmers) in the public sector in Lahore district. Out of twenty four, eight Farmer Field Schools were selected randomly and from each Farmer Field School eight registered farmers (member farmers) were interviewed, thus the total sample size of member farmers was sixty four. The non-registered farmers (non-member farmers) were also interviewed to make the research result more authenticated. Thus the total sample size of non-member farmers was also sixty four. Hence the total sample frame was 128 farmers.The data were collected with the help of a pre-tested and validated interview schedule and were analyzed through computer software Statistical Package for Social Sciences (SPSS). Descriptive statistics for example standard deviation and mean were used. The rank order was determined on the basis of weighted score.

RESULTS AND DISCUSSION

Farmers' participation in various activities: The success or failure of any extension program is based upon the farmers' participation in the program. The participation may have various magnitudes as land contribution for field demonstration or site provision for the conduction of Farmer Field School activities and their involvement in different other extension activities. The data in this regards are presented in Table 1and 2.

Table 1 reveals that only 12.5% of the member farmer respondents reported that they participated in land contribution for the field demonstration and site provision for the conduction of Farmer Field School activities, whereas, an overwhelmingly majority (98.4%) of the respondents have participated in knowledge exchange with Farmer Field School members and provision of feed back to Farmer Field School, however, no one participated in fund sharing and entertainment contributions. The present results are in line with those of Webster (2004) who indicated that the farmers were ready in providing logistic support in various extension activities.

The data given in Table 2 show that spreading of plastic sheet (mean = 4.98) was ranked as 1st on the basis of respondents' participation level in Farmer Field School activities. Opening and closing of tunnel doors (mean = 4.97) and land preparation for nursery and seed bed (mean = 4.95) were ranked 2nd and 3rd, respectively. Marketing of the produce (mean = 4.91), conduction of AESA (mean = 4.89), green manuring and organic matter application (mean = 4.81), charts preparation and presentation (mean = 4.75), post harvest handling (mean = 4.64), seed treatment (mean = 4.59), group team work (mean = 4.55), irrigation applications (mean = 4.53), control of weeds (mean = 4.50) were ranked 4th to 12th, respectively on the basis of respondents' participation in Farmer Field School activities. Whereas, coordination (mean = 4.48), fertilizer application (mean = 4.42), capacity development (mean = 4.39), problem identification (mean = 4.38), sowing methods and field layout (mean = 4.33), combine decision (mean = 4.31), farmer organization (mean = 3.89), identification of insect pests (mean = 3.77), conduction of soil and water analysis (mean = 3.72), harvesting methods (mean = 3.72), spray methods (mean = 3.56), seed rate (mean = 3.50) and insect pest control with chemical (mean = 3.25) were ranked 13th to 25th, respectively on the basis of farmers participation in Farmer Field School activities. While insects pest control by IPM techniques (mean = 3.03) and installation of tunnels (mean = 1.87) were ranked lowest i.e. 26th and 27th, respectively. The results are in line with those of Hamidullah *et al.* (2006) who indicated that seed treatment should be fortified to decrease the incidence of soil and seed borne diseases. These results are also in line with those of Tripp *et al.* (2005); Khatam *et al.* (2013) who found that Farmer Field School approach could increase farmers' knowledge in the identification of pests and also develop their understanding about AESA.

Competency in the conduction of various activities: The member and non-member farmers were also asked about the competency in the conduction of the various activities. The data in this regards are presented in Table 3.

While comparing member and non-member competency in the conduction of advanced agricultural activities, it is evident from the data presented in Table 3 that the competency in land preparation and direct sowing were top in rank order in member and non-member farmers' competency. On the other hand member farmers' competency in control of harmful insects were at the bottom in this activity, whereas non-members had lowest competency in conduction of AESA activity. On

the basis of the mean values presented in Table 3 for the given scale it can be concluded that the top five activities by member farmers were: land preparation ($\overline{x}$ = 4.70); direct sowing ($\overline{x}$ = 4.67); use of black mulching sheet ($\overline{x}$ = 4.55); use of white plastic sheet ($\overline{x}$ = 4.52) and removal of off shoots ($\overline{x}$ = 4.42). The five activities ranked at the bottom (least frequent activities performed by them) were: beneficial insects identification ($\overline{x}$ = 3.19); control of weeds ($\overline{x}$ = 3.17); IPM practices ($\overline{x}$ = 3.14); disease control ($\overline{x}$ = 3.11) and control of harmful insects ($\overline{x}$ = 3.09). The results are in line with those of Mancini *et al*. (2008) who stated that FFS farmers had significantly improved their competency regarding the identification of insects and the damage caused by these pests/insects.

Table 1. Distribution of the member farmer respondents according to their nature of farmer participation in Farmer Field School activities.

Participation activities	Response			
	Yes		No	
	F.	%	F.	%
Land contribution for the filed demonstrations	8	12.5	56	87.5
Site provision for the conduction of Farmer Field School activities	8	12.5	56	87.5
Fund sharing	0	0.0	64	100.0
Entertainment contributions	0	0.0	64	100.0
Knowledge exchange with Farmer Field School members	63	98.4	1	0.8
Provision of feed back to Farmer Field School	63	98.4	1	0.8

Table 2. Distribution of the member farmer respondents according to their level of participation in Farmer Field School activities.

Participation activities	Mean	Std. Dev.	Rank
Spreading of plastic sheet	4.98	0.12	1
Opening and closing of tunnel doors	4.97	0.18	2
Land preparation for nursery and seed bed	4.95	0.21	3
Marketing of the produce	4.91	0.34	4
Conduction of Agro Ecosystem Analysis (AESA)	4.89	0.40	5
Green manuring and organic matter application	4.81	0.43	6
Charts preparation and presentation	4.75	0.50	7
Post harvest handling	4.64	0.68	8
Seed treatment	4.59	0.64	9
Team work in the group	4.55	0.53	10
Irrigation applications	4.53	0.62	11
Control of weeds	4.50	0.59	12
Coordination	4.48	0.56	13
Fertilizer applications	4.42	0.69	14
Capacity development	4.39	0.52	15
Problem identification	4.38	0.58	16
Sowing methods and field layout	4.33	0.56	17
Combine decision	4.31	0.53	18
Farmer organization	3.89	0.48	19
Identification of insect pests	3.77	0.46	20
Conduction of soil and water analysis	3.72	1.05	21
Harvesting methods	3.72	0.58	22
Spray methods	3.56	0.53	23
Seed rate	3.50	0.71	24
Insect pest control with chemicals	3.25	0.50	25
Insect pest control by IPM techniques	3.03	0.54	26
Installation of tunnels	1.87	0.91	27

Scale: 1= To some extent, 2= To below average extent, 3= To an average extent, 4= To above average extent, 5= To high extent, X= Not applicable

Table 3. Distribution of the respondents according to extent of competency in the conduction of following activities.

Activities	Member farmers			Non-member farmers			t-value
	$\overline{X}$	S.D	R	$\overline{X}$	S.D	R	
Land preparation	4.70	0.52	1	3.48	0.71	1	11.017**
Direct sowing	4.67	0.54	2	3.30	0.71	2	12.414**
Use of black mulching sheet	4.55	0.53	3	2.61	0.63	13	18.741**
Use of white plastic sheet	4.52	0.59	4	2.83	0.46	6	18.088**
Removal of off shoots	4.42	0.56	5	1.62	0.60	33	27.207**
Irrigation applications	4.22	0.49	6	2.81	0.56	7	15.161**
Intercropping practices	4.11	0.54	7	1.84	0.51	27	24.432**
Group formation	4.09	0.64	8	1.58	0.56	35	23.800**
Preparation of charts	4.09	0.56	9	2.16	0.54	18	19.991**
Installation of plastic nets in tunnels	4.06	0.43	10	1.70	0.58	32	26.036**
Hole formation in mulching sheet	4.05	0.63	11	1.80	0.57	28	21.246**
Fertigation practices	4.05	0.45	12	1.80	0.65	29	22.814**
Identification of weeds	3.98	0.33	13	2.89	0.36	3	17.803**
Post harvest handling practices	3.98	0.42	14	2.38	0.58	16	18.070**
Conduction of Agro Ecosystem Analysis (AESA)	3.94	0.53	15	1.46	0.70	36	22.432**
Layout of land	3.92	0.41	16	2.12	0.58	19	20.294**
Raised bed nursery techniques	3.91	0.50	17	2.17	0.52	17	19.304**
Marketing process	3.91	0.71	18	2.89	0.57	4	8.972**
Manuring applications	3.89	0.36	19	2.75	0.50	8	14.713**
Disease identification	3.89	0.31	20	2.86	0.39	5	16.387**
Harvesting techniques	3.86	0.43	21	2.39	0.61	15	15.771**
Seed treatment	3.83	0.49	22	2.71	0.55	10	12.040**
Installation of tunnels	3.77	0.53	23	1.59	0.66	34	20.513**
Presentation of charts	3.75	0.69	24	1.73	0.60	31	17.576**
Harmful insects identification	3.72	0.45	25	2.72	0.58	9	10.910**
Use of farm implements	3.64	0.55	26	2.56	0.56	14	11.035**
Humidity and temperature control	3.55	0.59	27	1.95	0.49	25	16.701**
Soil and Water analysis	3.46	0.50	28	2.64	0.52	12	9.074**
Spraying techniques	3.45	0.64	29	1.97	0.35	24	16.213**
Fertilizer applications	3.39	0.49	30	2.67	0.64	11	7.098**
Applications of various irrigation techniques	3.19	0.43	31	1.92	0.45	26	16.283**
Beneficial insects identification	3.19	0.39	32	2.06	0.59	20	12.728**
Control of weeds	3.17	0.46	33	2.06	0.47	21	13.592**
IPM practices	3.14	0.43	34	1.75	0.57	30	15.611**
Disease control	3.11	0.40	35	2.00	0.36	22	16.366**
Control of harmful insects	3.09	0.46	36	1.98	0.45	23	13.704**

Scale: 1=Very Low, 2= Low, 3=Medium, 4=High, 5=Very High, X=not applicable

In case of non-member farmers' most frequent competency in the conduction were: land preparation ($\overline{X}$ = 3.48); direct sowing ($\overline{X}$ = 3.30); identification of weeds ($\overline{X}$ = 2.89); marketing process ($\overline{X}$ = 2.89) and disease identification ($\overline{X}$ = 2.86). Whereas, the least frequent competency performed by them were conduction of AESA ($\overline{X}$ = 1.46); group formation ($\overline{X}$ = 1.58); installation of tunnels ($\overline{X}$ = 1.59); removal of off shoots ($\overline{X}$ = 1.62) and installation of plastic nets in tunnels ($\overline{X}$ = 1.70).

T-test clearly indicates that all aspects of competency in the conduction of agricultural activities had significant difference in favour of member farmers. It means member farmers had more competencies in agriculture as compared to non-member farmers.

Conclusion: It can be concluded from the findings that member farmer respondents highly build up their competency under FFS in the areas of land preparation, direct sowing, use of black mulching sheet, use of white plastic sheet and removal of off shoots. However, comparatively less competency was built up in the aspects of beneficial insects identification, control of

weeds, IPM practices, disease control, and control of harmful insects. Whereas, non-member farmer respondents have more competency in land preparation, direct sowing, identification of weeds and marketing process. However, less competency in the conduction of AESA, group formation, installation of tunnels, removal of off shoots and installation of plastic nets in tunnels. The results of t-test clearly indicates that member farmers had more competencies in agriculture as compared to non-member farmers. As member farmers had more competency level as compared to non-member farmers, therefore, the project should be expanded to more districts, so that the maximum farming community can get benefit from this approach.

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