International Journal of Agricultural Science, Research and Technology in Extension and Education Systems (IJASRT in EESs)
Available online on: http://ijasrt.iau-shoushtar.ac.ir
ISSN: 2251-7588 Print
ISSN: 2251-7596 Online
2017: 7(1):35-42

Received: 28 February 2017
Reviewed: 5 April 2017
Revised: 6 April 2017
Accepted: 14 April 2017

Effect of Services and Facilities of Tobacco Companies on Tobacco Crop in Malakand Division, Pakistan

Khan, Faheem*., Ahmad, Bilal., Siddiqui, Badar Naseem., Khan, Nowshad
Respectively Assistant Professor, MSc, Associate Professor and Professor Department of Agricultural Extension, PMAS-Arid Agriculture University Rawalpindi, Pakistan
**Corresponding Author: faheem8585@aup.edu.pk*

Abstract

The present research is conducted to find out the effect of services and facilities of tobacco companies on tobacco crop in Malakand division of Khyber Pakhtunkhwa, Pakistan. A multi-stage sampling technique was applied for selection of sample size. In this method, 135 tobacco farmers were selected from fifteen villages of tobacco growers. The principle researcher interviewed selected respondents face by face through a well-designed interview schedule. The results showed that majority 65.18% and 72.57% growers were small size of landholders and literate respectively. Moreover, tobacco companies provide facilities and services related quality seed, plant size, leaf cluster, and leaf quality to tobacco growers. Meanwhile, maximum 51.90% tobacco growers reported that services and facilities were 26-50% beneficial for quality seed and plant size. While, individual, group contact, and mass contact extension methods practiced for delivery of various services and facilities to tobacco growers. Meantime, farm home visit, office call, leader training, method demonstration, lecture meeting, radio, television, and poster extension techniques recorded for promotion of services to tobacco growers. Whereas, majority 97% and 63.70% tobacco growers enclosed that farm and home visit and office calls method were excellent techniques for services and facilities promotion. Beside these facilities and services, tobacco companies had provided training to almost all tobacco growers related to seed bed preparation, transplantation, field preparation, fertilizers application, harvesting and curing process. It is further suggested that tobacco companies had better to start programmes on electronic media related application of suitable and appropriate technologies in tobacco cultivation on equality base for illiterate and literate growers.

Keywords: Extension Methods, Extension Services, Malakand division, Extension training

1. Introduction

Tobacco crop reported as a wicked weed. Human beings have been utilizing this golden leaf crop since the 15thcentury. It was on October 11, 1492 when Christopher Columbus first sighted the home of Awarkess. He has offered the dried leaves of tobacco in Awarkess home (Mohammad, 1975). The use of tobacco in Mexico and South America reflects from records of 1499. Thereafter, the Portuguese and Spaniards took tobacco plant to other countries. In South Asian sub-continent, the Portuguese have introduced this crop in 16thcentury. However, perhaps the regular cultivation of tobacco has observed in the first decade of 17thcentury (Bhatti, 1992).

Tobacco is noticed one of the major cash crops of Pakistan and its cultivation recorded from since 1960 in Pakistan. In Pakistan, tobacco cultivated area and production enhanced significantly during this period (from 1960 to 2007). Further, tobacco crop was cultivated on 39 thousand hectares in year 1961. Now, this figure has boosted to 51 thousands hectares in year 2007. Moreover, one-hectare cultivated tobacco produces 2.47 tons approximately in total tobacco production. Similarly, 1% application of suitable fertilizers increases tobacco production up to 0.05 tons (Hussain *et al*., 2010).

In Khyber Pakhtunkhwa (KP) province, tobacco crop was first time cultivated in 1912 on experimental base of cigarettes and cigar varieties at the Agricultural Research Station, Tarnab (Peshawar), Pakistan. Although, this crop was successfully grown but lack of facilities and technical knowledge obstructed its production (Mohammad, 1975). This crop is also considering one of the main commercial crops of Khyber Pakhtunkhwa Province. In Khyber Pakhtunkhwa Province, tobacco cultivate area, production and calculated yield recorded 1764 hectares, 83470 tones, and 2829 $kgha^{-1}$ respectively in year 2012-13. While tobacco cultivates area, production, and calculated yield were 32610 hectares, 78210 tones, and 2408 $kgha^{-1}$ respectively in the year 2011-12. The results of this government annual report of Khyber Pakhtunkhwa province indicates that tobacco cultivated area, production, and calculated yield increased during this period (2011-12 to 2012-13) (Government of Khyber Pakhtunkhwa, 2014).

Extension teaching method can be categorized into three groups (a) Individual contact methods (b) Group contact method (c) Mass contact methods. For dissemination of latest and recommended information extension field staff of the government and private tobacco companies practiced variety of extension teaching methods according to situations for promotion of tobacco crop. Extension teaching methodologies occupy great importance as far as the technology transfer and farmer's education are concerned. Certainly, the standard of efficiency and persuasiveness of an extension programme improves many folds, if proper, suitable, and recommended techniques applied for dissemination of information to farmers' community.

The present study aimed to determine the role various services and facilities of and investigate of extension methods of Tobacco Companies in Tobacco crop. Moreover, Suggestions and recommendations drawn for policy makers.

2. Materials and methods

Tobacco crop is cultivated in entire Pakistan where environment is suitable and favorable. Certainly, it is one of the main cash crops of Pakistan as well as of Khyber Pakhtunkhwa Province. Most probably, the growers of Khyber Pakhtunkhwa cultivate this crop for commercial purposes. Moreover, environment of Khyber Pakhtunkhwa is suitable for cultivation of this crop. In Khyber Pakhtunkhwa, Malakand district (sub-division of Province) is considered one of the main growing area for this crop. Meanwhile, total 1575 hectares area is used for tobacco cultivation in Malakand district. While this cultivated area produced 3048 tons tobacco, and calculated yield was 1935 kg ha^{-1} in year 2011-12. While in year 2012-13, the cultivated area recorded 1620 hectares, production was 4681 tones and calculated yield was 2890 kg ha^{-1} in Malakand district (Government of Khyber Pakhtunkhwa, 2014). The recent information indicates that cultivated area, production, and yield of tobacco crop increased in Malakand district. Therefore, the principle researcher and other team members purposively selected this district for this research study.

Tobacco growers were sample of this research study. Malakand division is one of the main tobacco growing areas of Khyber Pakhtunkhwa province. Therefore, this division was selected purposively as universe of study. Furthermore, fifteen main tobacco cultivation villages were selected randomly from the Malakand division by the help of agricultural officer (Agricultural officer is a government employ and appointed on union council base. Union council is sub-unit of tehsil which consist of approximate 20 to 35 villages). These selected fifteen villages were randomly selected 135 tobacco growers. An interview schedule is used as tool for collection of primary data. Therefore, a pre-tested and well-designed interview schedule applied for collection of primary information from 135 tobacco growers. The primary collected information fed into computer programme "Excel" and further analysis by Statistical Package for Social Science (SPSS) programme.

Moreover, recommended and acceptable secondary data or information was applied for support of the results of this research study.

3. Results and discussion

Table 1 reported land size (acre) of tobacco growers. Results in Table 1 indicate that maximum 65.18% tobacco growers were small size of land cultivators up to 2.5 acres. Followed by 19.25 and 12.59% tobacco growers indicate that land size of tobacco growers were average (2.5 to 3.5 acres) and medium (3.6 to 4.5 acres). While remaining 2.96 % tobacco growers inform that their cultivated lands were large above 4.5 acres. Most probably, it is because that mostly tobacco growers were commercial growers. Maybe they have allotted small piece of owner land for tobacco cultivation or have rented land for tobacco cultivation. Israr et al., (2016) studied that tobacco is one of the main cash crop of Swabi district of Khyber Pakhtunkhwa, Province of Pakistan. Moreover, the research find out that maximum (50%) tobacco growers were owner-cum-tenant. Further, tobacco growers were well experience up to more than 5 years in cultivation.

Table 1. Distribution of tobacco growers by level of land size (acre) used for tobacco (n=135).

Size of Land(acres)	Frequency	Percentage
Small (Up to 2.5)	88	65.18
Average (2.5 to 3.5)	26	19.25
Medium (3.6 to 4.5)	17	12.59
Large (Above 4.5)	4	2.96

Source: Field Survey, 2016

Table 2. Distribution of Tobacco growers by level of Education (n = 135)

Level of Education	Number of Tobacco growers	Percentage
Illiterate	37	27.40
Primary	33	24.44
Middle	36	26.66
Metric	20	14.81
Intermediate	6	4.44
Bachelor	3	2.22

Source: Field Survey, 2016

Table 2 indicated the education level of the tobacco growers in the study area. The results of Table 2 enclosed that 27.40% tobacco growers were illiterate and remaining 72.60 % were educated. The education level of tobacco grower was various ranging from primary to bachelor. In the educated tobacco growers, majority 24.44% and 26.66 % were primary school certificate holder and middle school certificate holder. Followed by 14.81% and 4.44 % tobacco growers were secondary school certificate holder and college certificate holder. While only 2.22 % tobacco growers were bachelor degree holder in the study area. Most probably, the tobacco growers were professional and commercial growers. So, therefore maximum of them were educated. Saddozai *et al.,* (2015) find out that insignificant contribution exist between variables education and age of tobacco growers toward tobacco cultivation. But, this research study also recommended that concern organizations had better to lunch a special package of composite information along with technical assistance through the existing extension services system to provide recommended information to tobacco growers.

Table 3 expresses response of Tobacco growers about facilities provided by private tobacco companies. The results of Table 3 expressed that almost all tobacco growers reported that they received facilities about quality of seed; size of plant, size of leaf and cluster size of tobacco plant were improved from facilities provided by tobacco growers. Similarly, 99.30%, 48.90% and 48.10 % tobacco growers enclosed that leaf per plant, leaf quality and leaf quantities were improved respectively from facilities provided by private tobacco companies.

Table 3. Response of Tobacco growers about Private Tobacco Companies

Tobacco Products	Yes		No	
	F	%	F	%
Quality of Seed	135	100	--	--
Size of plant	135	100	--	--
Size of Leaf	135	100	--	--
Size of cluster	135	100	--	--
Leaf per plant	66	48.9	69	51.1
Leaf Quality	134	99.3	1	0.7
Leaf Quantity	65	48.1	70	51.9

Source: Field Survey, 2016

Meanwhile, 51.10% and 51.90% tobacco growers claimed that there was no significant improvement occurs in leaf per plant and lead quantity from facilities provided by private tobacco companies. Certainly, the private tobacco companies were provided innovative and suitable information to tobacco growers. Therefore, their seed quality, size of plant, leaf, and cluster, and leaf quantity improved. Jamil et al. (2015) found in a research study that demonstration, personal contact, group meetings and training were effective methods of communication. Moreover, farmers' community got information from friends, relatives and co-farmers personally. Additionally, the research found that wheat and maize growers achieved 50% more yield then those growers who were un-aware from extension services.

Table 4. Response of Tobacco growers about facilities provided by of Tobacco Companies (n=135)

Improvement	Up to 25%		26-50%		51-75%		76-100%	
	F	%	F	%	F	%	F	%
Quality of seed	--	--	70	51.90	63	46.70	2	1.50
Size of plant	--	--	70	51.90	3	2.20	62	45.90
Size of Leaf	1	0.70	--	--	62	45.90	72	53.30
Size of cluster	1	0.70	1	0.70	70	51.90	63	46.70
Leaf per plant	--	--	2	1.50	62	45.90	2	1.50
Leaf Quality	--	--	--	--	3	2.20	131	970
Leaf Quantity	1	0.70	1	0.70	62	45.90	1	.70

Source: Field Survey, 2016

Table 4 showed improvement of tobacco plant after facilitation of Private Tobacco Companies. So, results of Table 4 enclosed that maximum 97%, 53.30% and 45.90 % tobacco growers reported that leaf quality, size, and plant size improved respectively up to 76-100 % due to facilitation of private tobacco companies. Followed by, majority 46.70%, 45.90%, 45.90% and 45.90 % tobacco growers indicated improvement in seeds quality, leaf size, cluster size, and leafs numbers respectively up to 51-75%. Further, 51.90 % tobacco growers informed that their tobacco seed quality improved up to 26-50 %. The remaining a fractional number of tobacco growers reported overall improvement in

tobacco crop up to 25 %. Certainly, the tobacco crop improvement after facilitations of tobacco companies. Although, its aspects and level of improvement is vary.

Table 5. Distribution of Tobacco growers by Extension Services Provided Private Tobacco Companies

Extension Teaching Methods	Yes		No	
	F	%	F	%
Individual Contacts				
Farm and Home Visit	135	100	--	--
Office Calls	135	100	--	--
Telephone Calls	65	48.10	70	51.90
Personal Letters	37	27.40	98	72.60
Group Contacts				
Method Demonstration	134	99.30	1	0.70
Result Demonstration	65	48.10	70	51.90
Leader Training	135	100	--	--
Tours	65	48.10	70	51.90
Lecture meeting	103	76.30	32	23.70
Mass Contact				
Bulletins	65	48.10	70	51.90
Radio	135	100	--	--
Television	135	100	--	--
Exhibits	65	48.10	70	51.90
Posters	134	99.30	1	0.70
Newsletters	38	28.10	97	71.90
Circular Letters	1	0.70	134	99.30

Source: Field Survey, 2016

Table 5 reported application of extension methods (Individual, group and mass contact methods) for dissemination of services and facilities to tobacco growers. Results of the Table 5 enclosed that almost all tobacco growers got information regarding tobacco crop through farm home visit and office call methods. Followed by 48.14% and 27.40% tobacco growers informed by telephone call and personal letter through extension technique. These extension techniques are categorized into individual extension methods. Similarly, in group contact method overwhelming majority 99.25% and76.29 % tobacco growers provided services and facilities by methods demonstration and lecturer meeting. While leader training method was beneficial for almost all grower. Followed by remaining 48.14 % tobacco growers got services and facilities by result demonstration extension method. In mass communication method, almost all tobacco growers achieved services and facilities by radio and television in the study area. Further, 48.14%, 28.14% and only 0.74 % tobacco growers got knowledge of various issues, and services and facilities by bulletin, exhibitions, newsletter and circular letter respectively. The Frontier Post, (1996) reported that tobacco is another cash crop of the Frontier province and it accounts for about 90 percent of the total Virginia tobacco grown in Pakistan. The province has potential to increase its tobacco production. Tobacco is providing sizeable revenue for the government. The Khyber Pakhtunkhwa provincial income from tobacco equals Rs.50 billion and central government of Pakistan pays only Rs.7.2 billion out of this lump sum. Tobacco is one the main cash crop of the Pakistan generally and Khyber Pakhtunkhwa province especially. Therefore, mostly growers cultivate it for economic empowerment.

Table 6. Response of Tobacco growers about Extension Methods (n=135).

Extension Method	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
Individual Contacts										
Farm and Home Visit	--	--	--	--	--	--	4	30	131	97
Office Calls	--	--	--	--	70	51.90	2	1.50	63	46.70
Telephone Calls	--	--	--	--	1	0.70	1	.70	63	46.70
Personal Letters	--	--	37	27.40	--	--	--	--	--	--
Group Contacts										
Method Demonstration	--	--	69	51.10	2	1.50	2	1.50	61	45.20
Result Demonstration	--	--	--	--	2	1.50	63	46.70	0	--
Leader Training	--	--	70	51.90	3	2.20	61	45.20	1	.70
Tours	37	27.40	63	46.70	--	--	--	--	--	--
Lecture meeting	--	--	1	0.70	2	1.50	--	--	--	--
Mass Contact										
Bulletins	--	--	--	--	63	46.70	1	.70	1	.70
Radio	--	--	--	--	--	--	--	--	--	--
Television	--	--	--	--	--	--	--	--	--	--
Exhibits	--	--	62	45.90	3	2.20	--	--	--	--
Posters	--	--	70	51.90			63	46.70	1	.70
Newsletters	38	28.10	--	--	--	--	--	--	--	--
Circular Letters	1	0.70	--	--	--	--	--	--	--	--

1=Poor, 2=Fair, 3=Satisfy, 4=Good, 5= Excellent, Source: Field Survey, 2016

Table 6 expressed that various extension methods were applied by tobacco companies for services and facilities among tobacco growers. The results of Table 6 indicated that mostly 97 % tobacco growers reported that they excellently got services and facilities by Farm and Home visits method. While 46.67% tobacco growers reported that Office Calls were excellent source for dissemination of services and facilities. Moreover, 27.40% tobacco growers enclosed that personal letters were recorded a fair source of services and facilities. A method demonstration is reported excellent method for information dissemination by 45.20% tobacco growers. While 26.67% tobacco growers reported that result demonstration was a good method for information dissemination among tobacco growers. Similarly, 52% tobacco growers indicated that leader training by private companies is a fair method for services and facilities dissemination. While 46.67% tobacco growers enclosed group contact method was fair for services and facilities dissemination. Only 2% of tobacco growers reported that they were satisfied from lecture meetings. Further, 46.67% tobacco growers reported that they were satisfied from bulletins presentation through mass communication method. Followed by 52% tobacco growers indicated that posters presentation was fair in dissemination of information. Only 28.14 % tobacco growers enclosed that newsletters poorly disseminate information among tobacco community. Khatam *et al.,* (2015) concluded from a research that seed/fertilizer, dealers, workshops, panel discussion, role playing and brainstorming are effective sources of agricultural information. Therefore, these may be made popular among the farming community. Arshed *et al*., (2012) founded in a research that group discussion was found to be the most effective extension teaching method for promoting services and facilities among farmers' community. While lecture and demonstration categorized as second for the above aspects. Literature, farm and home visit and farmer's day were considered poor and fair source of service and facilities among farmers' community. Table 6 reported statistically response of tobacco growers toward extension methods. The extension methods applied for dissemination of recommended and suitable agricultural and concern information among tobacco growers. The five indicators (poor, fair, satisfy, good and excellent) used to express responses of tobacco growers. The average value of tobacco growers disclosed response of extension method. In Individual contact method, Farm home visit, Office call and Telephone call indicated average response 4.97, 3.95 and 2.49 respectively out of total 5. It represents that average performance of Farm home visit was near to excellent, Office call was near to good and Telephone call was mid to fair and satisfy.

Table 6. Relative Response of Tobacco growers toward Extension Methods (N=135).

Extension Method	weighted score	Mean	Stand Deviation	Ranked Order
Individual Contacts				
Farm and Home Visit	671	4.97	.170	1st
Office Calls	533	3.95	.995	2nd
Telephone Calls	322	2.39	2.492	3rd
Personal Letters	74	.55	.895	4th
Group Contacts				
Method Demonstration	457	3.39	1.506	1st
Leader Training	398	2.95	1.002	2nd
Result Demonstration	258	1.91	1.994	3rd
Tours	163	.98	1.026	4th
Lecture meeting	6	1.73	1.317	5th
Mass Contact				
Posters	397	2.94	1.042	1st
Bulletins	198	1.47	1.540	2nd
Exhibits	133	.99	1.037	3rd
Newsletters	38	.28	.451	4th
Circular Letters	1	.01	.086	5th
Radio	0	0.00	0.000	6th
Television	0	0.00	0.000	6th

Source: Field Survey, 2016

Similarly, in group contact method, method demonstration, leader training and result demonstration scored average responses 3.95, 2.95 and 1.91 respectively out of total 5. These results enclosed that demonstration method represents, leader training, and result demonstration average response were near to good, near to satisfy and near to fair respectively. Moreover, in mass contact method, poster presentation, bulletins, and exhibition indicated average 2.94, 1.47 and 0.99 respectively out of total 5. The average values of these parameters indicated near to satisfy, mid of poor and fair and poor respectively. Arshed *et al.,* (2012) reported that maize product company practiced various extension methods for communication and share information among maize growers. In these methods, teaching methodology recorded most effective technique, and followed by Lecture and Demonstration. Meanwhile, telephone call was ranked at 4th position, Literature, Farm and home visit and Farmer's day were ranked at 5th, 6th, and 7th spot, respectively. Certainly, the extension methods for share of recommended information is efficient for farmers' community.

Table 7 Distribution of Tobacco growers regarding services provided by private Tobacco companies

Services	Yes		No	
	F	%	F	%
Skilled Labor	134	99.30	1	0.70
Transportation	--	--	135	100
Access to Market	65	48.10	70	51.90
Curing Services	103	76.30	32	23.70
New Technology	135	100	--	--

Source: Field Survey, 2016

Table 7 reported services provided by private tobacco companies. It is clear from the results of Table 7 that 99.30%, 76.30% and 48.10% tobacco growers provided skilled labors, curing services and market access respectively. While almost all tobacco growers informed that they got knowledge about latest technologies.

Table 8. Distribution of Tobacco growers provided Training by private Tobacco Companies (n=135).

Training Area	Yes		No	
	F	%	F	%
Seed bed preparation	134	99.30	1	.70
Seed sowing	65	48.10	70	51.90
Transplantation	134	99.30	1	0.70
Field preparation	135	100	--	--
Fertilizer Application	135	100	--	--
Pesticide Application	65	48.10	70	51.90
Irrigation Methods	66	48.90	69	51.10
Harvesting	135	100	--	--
Curing process	135	100	--	--

Source: Field Survey 2016

Table 8 represents training provided by private tobacco companies to tobacco growers. It is clear from Table 8 indicates that almost all tobacco growers got training about field preparation through latest techniques, use of fertilizers application, new harvesting methods, and latest curing process. Followed by 93.30% tobacco growers reported that they got training about seed bed preparation, and transportation to market and companies. While remaining 48.90% and 48.10% tobacco growers informed that they got training about pesticides application and suitable irrigation techniques. Rahman *et al.*, (2011) find out that the estimation of cost and net returns of tobacco production, land rent, fertilizer cost and cultural practices cost were the main cost contributing factors in tobacco production that were Rs. 6500, 6061.3 and 2075.5 respectively. The net returns from tobacco crop were Rs. 9427.49. Besides tobacco leaf, by-product of tobacco production was also a major contributor to the net return from tobacco crop. Most probably, the field preparation, seed sowing, fertilizers application, Seed bed preparation, and transportation were main net consumption factors. Therefore, the tobacco companies provide training tobacco growers related field preparation, seed sowing, fertilizers application, seed bed preparation, and transportation to eliminate the net resources.

Table 9 showed response about provided training of private tobacco companies. The responses of tobacco growers recorded in Table 9 that 47.40%, 46.70% and 46.70% tobacco growers reported that seed sowing, seed bed preparation, and curing process respectively training were excellent. While 51.90%, 48.10% and 47.40% tobacco growers informed that training regarding fertilizers application, pesticides application, and harvesting methods respectively were satisfy. Similarly, 51.10% tobacco growers indicated that training regarding field preparation were fair. Meanwhile, 51.10% tobacco growers reported that training regarding transportation were poor.

Table 9. Distribution of Tobacco growers by response toward training provided by Private Tobacco companies

Training Area	Poor		Fair		Satisfy		Good		Excellent	
	F	%	F	%	F	%	F	%	F	%
Seed bed preparation	--	--	69	51.10	--	--	2	1.50	63	46.70
Seed sowing	--	--	--	--	--	--	1	0.70	64	47.40
Transplantation	69	51.10	--	--	--	--	4	2.90	61	45.20
Field preparation	2	1.50	69	51.10	--	--	2	1.50	62	45.90
Fertilizer Application	--	--	2	1.40	70	51.90	2	1.50	61	45.20
Pesticide Application	--	--	--	--	65	48.10	--	--	--	--
Irrigation Methods	--	--	2	1.50	3	2.20	--	--	61	45.20
Harvesting	--	--	71	52.60	64	47.40	2	1.50	62	45.90
Curing process	--	--	2	1.50	--	--	70	51.90	63	46.70

Source: Field Survey, 2016

Table 10. Relative ranking of Tobacco growers by response toward training provided by Private Tobacco companies (n=135).

Training Area	weighted score	Mean	S.D	Ranked Order
Harvesting	652	3.40	1.502	1st
Curing process	599	4.44	.581	2nd
Fertilizer Application	527	3.90	1.031	3rd
Seed bed preparation	461	3.41	1.518	4th
Field preparation	458	3.39	1.512	5th
Transplantation	390	2.88	1.989	6th
Seed sowing	324	2.40	2.501	7th
Irrigation Methods	318	2.36	2.460	8th
Pesticide Application	195	2.40	2.501	9th

Source: Field Survey, 2016

Table 10 indicates statistical analysis of response tobacco growers about training provided by private tobacco companies. The response tobacco growers were categorized into poor, fair, satisfies, good and excellent (total 5 parameters). The average values 4.44, 3.41, 3.40 and 3.90 (out of total 5) indicated amide of good and excellent, near to good, between satisfy and good, and near to good about curing process, seed bed preparation, harvesting and fertilizer application respectively response of tobacco growers. Moreover, tobacco growers reported that other trainings such as transportation, seed sowing, irrigation methods, and pesticides application were fair and satisfy.

Table 11. Response of Tobacco growers toward motivation (n=135)

Motivation Methods	Yes		No	
	F	%	F	%
Giving Bike	--	--	135	100
Giving Mobile	--	--	135	100
Giving Spray pump	102	75.60	33	24.40
Giving cash	64	47.40	71	52.60
Giving tractor	--	--	135	100

Source: Field survey, 2016

Table 11 reported motivation tools for tobacco growers. Certainly, the extension workers applied various techniques to motivate growers toward tobacco cultivation. Results of Table 11 indicated that 75.60% and 47.40% tobacco growers enclosed that extension workers provide them spray pump and cash for tobacco cultivation.

4. Conclusion and recommendations

It is concluded from the present study that tobacco companies perform significant role in promotion of tobacco crop. Although, tobacco growers were small size landholder, but they are considered commercial growers. Moreover, these growers were limited knowledge about innovative techniques. Therefore, they reported that seed quality, plant leaf, size, and cluster improved after facilitation of tobacco companies'. Additionally, extension agent of tobacco companies' applied almost all extension methods (Individual contact methods, group contact methods, and mass contact methods) to provide recommended information to growers. Certainly, the private tobacco companies provide training to tobacco growers related different aspects like seed bed preparation, seed sowing, fertilizers application, field preparation, pesticides application, irrigation methods, harvesting, curing process, and transplantation. It is because that these inform and practice appropriate technologies. Similarly, tobacco companies provide rewards to growers such as giving bike, sprays machines and cash to motivate growers toward tobacco cultivation.

It is suggested that concern tobacco companies, organizations and institutions should initiate specific programs for tobacco growers on base of their issues. Moreover, the concern companies, organizations and institutions had better to operate existing programs by latest extension methods like information communication technologies (ICT).

References

1. Arshed, A, W., Ch, M, K., Iqbal, M., & Hussain, A. (2012). Effectiveness of Extension Education Methods used by Rafhan Maize Products for Information Dissemination to Maize growers of Central Punjab, Pakistan. *Pak. J. Food Sci*. 22(1): 36-39.

2. Bhatti, M. (1992). Marketing of Tobacco in Swabi District. M. Sc (Hons) Thesis. Department of Agricultural Economics, NWFP Agricultural University Peshawar, Pakistan.

3. Government of Khyber Pakhtunkhwa. (2014). Development Statistic of Khyber Pakhtunkhwa 2014. http://kpbos.gov.pk/files/1399368724.pdf .

4. Hussain, A., Khattak. N., & Muhammad, N. (2010). Impact of Major Farm Inputs on Tobacco Productivity in Pakistan: An Econometric Analysis (1960-2006). *Sarhad J. Agric*. 26(1): 93-96.

5. Israr, M., Faraz, M., Jan, D., Ahmad, N., & Ahmad, S. (2016). Farming Community Perceptions about Climate Change in Khyber Pakhtunkhwa Pakistan. *World Journal of Agricultural Research*, 4(3): 70-76.

6. Jamil, A, M., Khan, N., Khan, F., & Zakria, M. (2015). Effectiveness of Agricultural Extension Services in Dissemination of Information to the

Farming Community of District Bhimber, Azad Jammu and Kashmir. *Pakistan Journal of Agricultural Research*, 28(2): 210-216.

7. Khatam, A., Muhammad, S., Siddiqui, N, B., Hassan, Y, Z, M., Ashraf, I., Khan, Z, M., & Kuharoo, A. (2015). *Pakistan Journal of Agricultural Research*, 26(3): 245-253.

8. Mohammad, T. (1975). Marketing of Tobacco in NWFP. Board of Economic Inquiry NWFP, University of Peshawar. Pp: 29-38.

9. Rahman, L, Q., Sajjad, M., Khan, N., Shah, S., & Nazir, M. (2011). Costs and Net Returns of Tobacco Production in District Swabi (Khyber Pakhtunkhwa) Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3(8):160-171.

10. Saddozai, N, K., Nasrullah, M., & Khan, P, N. (2015). Stochastic Frontier Production Analysis of Tobacco Growers in District Mardan. *Pakistan. Pakistan J. Agric. Res*, 28(4): 346-353.