

## Role of Agricultural Extension Agents in Enhancing Tomato Production in District Peshawar

Tariq Kamal<sup>1\*</sup> Khalid Nawab<sup>1</sup> Waheed ullah<sup>2</sup> Muhammad Usman Khan<sup>1</sup>

1.Department of Agricultural Extension Education and Communication, Faculty of Rural Social Sciences, The University of Agriculture Peshawar, Pakistan

2.Department of Water Management, Faculty of Crop Production Sciences

The University of Agriculture Peshawar, Pakistan

Email Address: tariqkamal10@gmail.com

### Abstract

The research study was conducted in three selected villages of district Peshawar in order to investigate the role of Agricultural Extension Agents in enhancing tomato productivity. Three villages namely Nahaqi, Khazana and Mairo were selected for this study on the basis of accessibility and availability of tomato growers. A detailed interview schedule was developed for data collection and after collection of data paired T-test was used for studying the difference of productivity. The results of the study shows that majority of the respondents were among the age group of 31-40 years with 33.75%. Education ratio was high as 72.5% while none educated were 27.5%. The ratio of owner-cum tenant was 32.5% which was the second dominant group. Major problems faced by respondents were insect/pest attack which ratio was 36.25% followed by seed problem which was reported by 27.5% of the respondents. The frequency of Agricultural Extension Agents' visits to farmers once in month was reported by 46.25% of respondents. However, 37.5% respondents paid visit to Agricultural Extension Office once in a month which is not satisfactory. Eighty percent of the respondents attended trainings. Seventy percent of respondents reported that different methods regarding tomato crop were delivered to the farmers. The increase in production was reported by 68.75% while no change was observed by 23.75%. The Paired T-test statistics shows that 10.39% increase was there due to the activities of extension agents and department. It is concluded that the role of Agric. Extension Agents was obviously good and can not be neglected, in this study effective role of Agricultural Extension Agent is positively correlated with adoption and production of tomato. Hence on the basis of observed value it was recommended that these activities should be continued and each category farmers should be involved in order to increase their production. These activities should be launched in other parts of the province by Agricultural Extension department.

**Keywords:** Agriculture, Agric. Extension Agents, Tomato Production and District Peshawar

### Introduction

Pakistan is an agrarian country; more than 70% population is dependent upon the profession of agriculture which is considered the backbone for the economic development and growth of Pakistan. Being the dominant sector of economy, presently agriculture share 20 percent to GDP (Gross Domestic Product), employs 45 percent of country's labor force and contributes largely to export earnings. It also contributes to growth providing raw material for the industries. Therefore, agriculture is bound to have a substantial impact on the growth of overall GDP (GoP, 2011).

In spite of favorable climate, good soil conditions, and availability of irrigation water, the crop yield in Pakistan is far below than the yield obtained in advanced agricultural countries. The unrealized potential increase in crop production in Pakistan may be attributed to the fact that farmers are not adopting a full package of crop production technology and still follow traditional methods. It is imperative to deliver appropriate technology to the farmers and motivate them to adopt it. It is therefore essential for national planners and extension educators to know what technology the growers are using and what sources of information are used. This base-line information is essential to strategic planning for improvement of crop production. There is a need and justification to redefine the role and functions of agricultural extension in Pakistan. Farmers do not often make visits to the research stations; however, the farmers obtained the required knowledge from different sources such as mass media, fertilizer and pesticide/insecticide agencies. Farmers in Pakistan are more contacted by the private agencies such as fertilizer companies for adoption of innovation ( Mirani, *et al.*, 2008). Peshawar, the capital of Khyber Pakhtunkhwa is being known as "Frontier City" standing right at the arrival of the world famous, Khyber Pass. It holds the key to the gateway of the sub-continent. A mention city of Peshawar is found in the history written as far back as 400 A.D. The district lies between 33°, 44 and 34°, 15 North latitudes and 71°, 22 and 71°, 42 East longitudes. The total area of the district is 1,257 square kilometers. The district is almost a prolific plain. The central part of the district consists of fine alluvial deposits. The cultivated area consist of a rich, light and penetrable soil, composed of a pretty even mixture of clay and sand, which is good for cultivation of wheat, maize, sugarcane, tobacco and important vegetables like potato and tomato. The district is divided by into areas i.e. rural and urban. There are both Kacha and Pacca houses in rural and urban areas of the

district. The population of the district is increasing day by day. The rural population of the district is 1036 thousands constituting 51.3% of the total population so urban population is about 48.7%. The mean maximum temperature then rises to over 40°C, while the mean minimum is over 25°C, July to September are the monsoon months. The mean maximum and minimum temperature for January, the coldest month, has been recorded as low as 18.35°C and 4.00°C respectively. The main sources of irrigation in the district are canals and tube wells (Marwat, 2005).

Many crops are grown in Peshawar Valley i.e cereal, oil, seed, sugar crops and cash crops, fruits, vegetables are the daily domestic use especially Tomato is the need of every recipe. Tomato (*Lycopersicon esculentum* Mill.) belongs to the family Solanaceae and the genus *Lycoersicon*. It is one of the important and widely used vegetables and ranks only second after potato in terms of consumption in the world. Tomato has reached to its present form through continued cultivation and selection from some wild forms, the identification of which is obscure, some people claim it to be due cherry tomato while others suggest another wild form that grows in Peru and in the west of south America among agricultural products, onion, tomato and chilies are most common vegetables in Pakistan and other South Asian countries. These vegetables are co-cooked with other vegetables and meat in addition to be consumed as salad. Therefore, the demand of these vegetables is relatively inelastic in Pakistan (Lohano and Mari, 2005).

In Pakistan production of tomato crop from 2005 to 2010 was raised from 468.1 to 476.8 tonnes which is still below from consumption line. According to Ministry of Food, Agricultural and Livestock in 2005-2010 tomato production was raised from 64.6 to 77.9 tonnes in Punjab, in Khyber Pakhtunkhwa production was decreased from 161.6 to 119.3 tonnes, In Baluchistan production was also decreased from 193.6 to 179.2, while in Sindh production was raised from 48.3 to 100.4. Heavy rain fall with hailing, decrease in area under tomato cultivation, diseases etc. are the main causes for decrease in production (GoP, 2010).

### Objectives

1. To assess the role of agricultural extension agents regarding tomato production in the study area.
2. To identify the linkages of respondents with agricultural extension agents in the selected area.
3. To formulate the suggestions and recommendation for policy makers.

### MATERIALS AND METHODS

The universe of the Study was district Peshawar is the representative district from Khyber Pakhtunkhwa regarding tomato crops therefore the study was conducted in the three villages namely Nahaqi, Khazana and Mairo were selected randomly to achieve the set objectives. A sample size of 80 respondents was selected at the rate of 10 % from the area with simple random sampling techniques. Devoid financial support and lacking of time provoked me for this sample selection. Interview schedule was designed in the light of the study objectives. Before launching the actual survey the schedule was pre-tested in the field. Necessary changes were made in the schedule after pre-testing. To collect the primary data sample respondents were visited and interviews were conducted in their fields and houses. All the sampled respondents were visited personally in order to avoid any type of noise and biasness in primary data. After the collection of data through the questionnaire the primary data was analyzed through SPSS and MS Excel. Data was presented in average and percentage form, and for the comparison of the data before and after the intervention, a paired sample *t- test* was used.

### Paired sample t-test

Paired t-test is defined as

$$t = \frac{(x_1 - x_2) - d_0}{\sqrt{(s_1^2/n_1) + s_2^2/n_2}}$$

Where

- $X_1$  = Mean of Sample 1
- $X_2$  = Mean of sample 2
- $d_0$  = Difference between two population mean
- $S_1^2$  = variance of Sample 1
- $S_2^2$  = variance of Sample 2
- $N_1$  = No. of respondents in sample 1
- $N_2$  = No. of Respondents in sample 2
- $N_2$  = No. of respondents in sample 2

## Results and Discussion

### Age wise Distribution

Table 2 shows the age wise distribution of the sample respondents in the study area, which shows that the dominant age group among all the age groups in the study area is the age group of people whose age is between 31 and 40 years. In which the share of each village is as 31.43 % of the respondents in this age group were from nahaqi village followed by 32 % from khazana village and at last 40% were from mairo village. The second dominant age group observed was the age group of the people with 41 to 50 years of age in which 28.57 % were from nahaqi followed by 32 % of the sampled respondents which were from khazana village and at last 15 % of the sampled respondents of this age group were from mairo village. Other age values for various age groups observed were as 6.25% of the sampled respondents were belonging to age group of 60 years and above. The other two age groups numbers were 14.29 % and 22.5% for 51 to 60 and 20 to 30 years of ages respectively. The table states that majority of the sampled respondents are from the age group of 31 to 40 years which reveals that people of this age group are willing to take interest in various activities which help them boost their productivity as compare to other age groups. Furthermore the age group of the sampled respondents between 41 to 50 years is in close relation (Muhammad et al, 2011) who stated in their study of micro credit impact on productivity that the age group of people of 41 to 50 was 27% which is very close to observed value.

**Table 2 Age wise distribution of the sample Respondents**

Villages	Age of the sample respondents										
	20 to 30		31 to 40		41 to 50		51 to 60		60 and above		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
Nahaqi	8	22.86	11	31.43	10	28.57	5	14.29	1	2.86	35
Khazana	4	16	8	32	8	32	3	12	2	8	25
Mairo	6	30	8	40	3	15	1	5	2	10	20
Total	18	22.5	27	33.75	21	26.25	9	11.25	5	6.25	80

Source: Field Survey, 2013

### Educational Status

Table 3 shows the educational status of the sampled respondents in the study area which shows that majority of the sample respondents were literate and a small amount of the sample respondents were illiterate. It is evident from the data shown in the Table 3 that among the respondents 72.5 % of the respondents were educated and 27.5 % were uneducated. The high educational ratio was due to as the study area is almost urban area where the trend of education is high as compare to rural areas. Among the literate respondents the dominant group of people was educated up to Middle level which was 39.66% of the respondents who were educated, in this group the share of each village was as 47.83 % of the sample respondents were from nahaqi, 42.11% were belonging to khazana and at last 25% were from mairo. The second dominant group of educated respondents was of those people who were educated upto primary level in which 39.13% were from nahaqi followed by 31.58% from khazana and 31.25% were from mairo. Rest of the respondents which were educated were belonging to the group of people who were educated upto High level which share was 12.07% of all the educated sample respondents followed by 15.52% whose education level was other than stated above. The high educational ratio is good for contacting farmers and it is easy to convince those regarding new technologies and innovations as compared to those with less or no education. Furthermore, the educational ratio observed for sample respondent who were educated upto High level is also reported by (Jaffar et al, 2006) whose reported value for the same group was in a similar study was 10.8% which is in close relation with the above stated value.

**Table 3 Educational Status of the sample respondents**

Villages	Literacy Status				If Literate then							
	Illiterate		Literate		Primary		Middle		High		Others	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Nahaqi	12	34.29	23	65.71	9	39.13	11	47.83	2	8.70	1	4.35
Khazana	6	24	19	76	6	31.58	8	42.11	3	15.79	2	10.53
Mairo	4	20	16	80	5	31.25	4	25	2	12.5	5	31.25
Total	22	27.5	58	72.5	20	34.48	23	39.66	7	12.07	8	13.79

Source: Field Survey, 2013

### Tenure Status

Table 4 shows the tenure status of the sampled respondents of the study area which show that most of the respondents were tenants whose share toward all the respondents is 48.75 % in which 42.86% of the sampled

respondents are those who belong to nahaqi area, after that 44% of samples respondents belong to khazana and at last 65 % were from mairo village of the study area. The second dominant group was of the owner cum-tenant which were 32.5% of the total sampled respondents in which each village proportion was as 37.14 % were of nahaqi area after this the next share was of the khazana village which was 36% of the total observed value, at last 20% of the owner cum-tenant were from mairo village. The other group was owner cultivator which was those farmers who have their own land for cultivation of tomato crop. The table shows that majority of the respondents were in the category of tenant. The observed value of owner cum-tenant which is 32.5% is in close matching with (Siddique and Mirani, 2012) who stated this value for owner cum-tenant as 30% in a similar study of agriculture productivity. As earlier stated in table of occupation that majority of respondents are farmers and other categories were those involved in other activities which reflect that their behavior toward farming was lower as compare to tenant which are greater in number in selected region for study.

**Table 4 Tenural Status of the sample respondents in study area**

Villages	Tenural Status						Total
	Owner cultivator		Owner cum-tenant		Tenant		
	No.	%	No.	%	No.	%	
Nahaqi	7	20	13	37.14	15	42.86	35
Khazana	5	20	9	36	11	44	25
Mairo	3	15	4	20	13	65	20
Total	15	18.75	26	32.5	39	48.75	80

Source: Field Survey, 2013

**Major Problems faced by Tomato Growers**

Table 5 shows the details of the problems faced by tomato growers. The response of the majority of the sampled respondents/farmers in answering this question was almost same but the difference observed was only in order to find out their problems. In Pakistan these problems are faced by majority of the farmers which are almost the same as in this case observed. The table shows that most of the farmers were affected and their production was lower due to the attack of insect and pest which cause major loss to the production and quality of tomato. This problem was faced by almost 36.25 % of the total sampled respondents in which the share of nahaqi village was 28.57 % followed by those with the same problem from khazana village were 36% and at last farmers suffered by this problem from mairo area were 50%. The second problem faced by the sampled respondents was non availability of good quality of seed at proper time and proper quantity. This problem is also a common problem in the country where almost everywhere the same problem will be reported by the farmers. Those farmers who reported non availability of seed were 31.43% from nahaqi area, from khazana village this ratio was 20% and from mairo this proportion was 30%. Other problems faced by farmers in the study area includes lack of fertilizer availability which was stated by 17.5% of the respondents, lack of credit sources for timely purchase of main inputs was also reported by 11.25% of the sampled respondents. At last a small proportion of the sampled respondents also stated that they have problem with proper marketing the reason for stating this problem at such low scale was the result of low sale rates which results of bad quality and effected tomato due to above mentioned problems otherwise due to easy accessibility of the provincial market all of the farmers were satisfied from the rates offered to them. The main reason and problems are always observed by various researchers as (Rola *et al.*, 1993) also stated in such studied in India and Indonesia where these problems were faced specially the seed and fertilizer at the time of sowing of the crops.

**Table 5 Problems Faced by Tomato Growers**

Villages	Major problems faced by Tomato farmers										Total
	Lack of Credit		Improper Marketing		Non availability of seed		Insect/Pest attacks		Lack of fertilizers		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Nahaqi	4	11.43	3	8.57	11	31.43	10	28.57	7	20.00	35
Khazana	3	12	2	3	5	20	9	36	6	24	25
Mairo	2	10	1	4	6	30	10	50	1	5	20
Total	9	11.25	6	7.5	22	27.5	29	36.25	14	17.5	80

Source: Field Survey, 2013

**Frequency of Visits paid by Extension Agents to farmers**

Table 6 shows the frequencies of visits paid by extension agents to farmers' field. It is clear from the table that majority of the farmers/sample respondents stated that the extension agents pay visit once in month to their fields, reasons for paying one visit in month is due to work load as the extension agent have to visit other villages also in his premises. The sampled respondents who stated regarding one visit per month of the extension agent were

in different proportion from different selected villages of the study area. This ratio for nahaqi was 42.86% while from khazana this ratio was 52% followed by the respondents of the mairo village which were 45% stating the above mentioned statement. The second dominant group of the respondent was those who stated that the extension agent pay visit each week was 20%. This group of the people was almost those respondents with large land holdings and they were the contact farmers of the extension agents for dealing all the farmers. In this group the share of each selected village for study was as 20% of the respondents with the above mentioned statement were from nahaqi village followed by 16% from khazana and at last 25% were from mairo village. The other frequency of the visits of the Agric. Extension agents reported by the sample respondents was as 5% of the respondents told that Agric. Extension agents visit them three time in a month. Other group was those who argued that the Agric. Extension office staff visits them twice in month this ratio was 11.25%. the frequency of visits of the extension agents in case of no visit by the extension agents to the farmers and weekly visits is also reported by (Ali et al, 2011) who stated that 34% of the respondents know their extension agent and 20% have no idea about their visits.

**Table 6 Frequency of visits of extension staff to farmers**

Villages	Frequency of visits of Agric. Extension Agents to farmers										Total
	Weekly		Once in month		Twice in Month		Thrice in Month		No visit		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Nahaqi	7	20.00	15	42.86	4	11.43	2	5.71	7	20.00	35
Khazana	4	16.00	13	52.00	3	12.00	1	4.00	4	16.00	25
Mairo	5	25.00	9	45.00	2	10.00	1	5.00	3	15.00	20
Total	16	20	37	46.25	9	11.25	4	5	14	17.5	80

Source: Field Survey, 2013

**Frequency of visits paid by the farmers to extension office**

Table 7 shows the frequency of visits paid by farmers to the extension office of the area regarding acquiring new information, new seed variety or reporting their problems. The table shows that majority of the sampled respondents from the selected villages were those farmers who paid one visit per month to the extension office of their area in which the sample respondents from each village were as the share of nahaqi village was 37.14% followed by khazana village where this proportion was 40% and at last the respondents from mairo village were 35%. The second dominant group of the farmers was those who did not pay any visit to the extension office their area. In this category the share of each village was as 28.57% of the sampled respondents were from nahaqi village, 32% were from khazana and at the end the share of mairo village was 45%. These were those farmers whose answer for this question was that they had never reported any problem to their local extension agents or paid any visit to extension office. The next category is of those farmers who paid weekly visit and this ratio toward whole sample size was 10%, those who paid visit three times in a month were 6.25 and at last with two visits per month were 12.5%. the same statistics were shown by (Ali et al, 2011) who stated in a relevant study that majority of the farmers visited the extension office for reporting their problem while in his case the second dominant group was also of those farmers who never reported any problem or acquired any information from extension office.

**Table 7 Frequency of visits Paid by farmers to Extension Office**

Villages	Frequency of visits of farmers to Agri. Extension Office										Total
	Weekly		Once in month		Twice in Month		Thrice in Month		No visit		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Nahaqi	5	14.29	13	37.14	6	17.14	1	2.86	10	28.57	35
Khazana	2	8.00	10	40.00	3	12.00	2	8.00	8	32.00	25
Mairo	1	5.00	7	35.00	1	5.00	2	10.00	9	45.00	20
Total	8	10	30	37.5	10	12.5	5	6.25	27	33.75	80

Source: Field Survey, 2013

**Training**

Table 8 shows different types of training deliver by extension department to the farmers of the selected areas for study and at result the impact of training on their productivity and their level of learning. The table shows that how much of the respondents got trainings and what types of trainings they got. The statistics of this question asked show that 80% of the tomato growers got necessary trainings in which 77.14 % were from nahaqi village, followed by 80% from khazana village and at last 85% were from mairo village. Those who were not involved in the training were 20% of the whole sample size from the selected villages in which the share of each village was

as 22.86% were nahaqi village followed by 20% from khazana and at last only 15% were from mairo. Those who selected training were further interviewed regarding what type of training they have received. As in second part of the table the statistics shows that majority of the farmers got trainings on sowing methods which were 45.31% in which village participation was as from nahaqi this ratio was 48.15%, from khazana village this was 45% and from mairo this was 41.18%. The second dominant group was those who got training on control of weeds and soil management of tomato which were 26.56% of the total sample size who attained trainings in this class the ratio was as from nahaqi the participant were 25.93% from khazana this value was 20% and from mairo this value was 35.29%. Some of the farmers also got trainings on irrigation methods and insect/pest control which were 17.19% and 10.94% respectively. The purpose of the training was to improve their productivity as in similar study stated by (Sidduqe and Mirani, 2012) that due to provision of training the production of wheat crop was improved by 26% of the sample respondents.

**Table 8 Trainings and their types received by respondents**

Villages	Training Received				If Yes Then what you have learned								Total
	Yes		No		Sowing methods		Weeds control		irrigation methods		Insect/pest Control		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Nahaqi	27	77.14	8	22.86	13	48.15	7	25.93	5	18.52	2	7.41	35
Khazana	20	80.00	5	20.00	9	45.00	4	20.00	3	15.00	4	20.00	25
Mairo	17	85.00	3	15.00	7	41.18	6	35.29	3	17.65	1	5.88	20
Total	64	80	16	20	29	45.31	17	26.56	11	17.19	7	10.94	80

Source: Field Survey, 2013

### Methods of Training

Table 9 shows the detail of how the trainings were delivered to the farmers in the selected villages of the study area. The table shows that two sort of methods namely individual contact and group contact were adopted for conducting trainings. The table shows clearly that majority of the farmers stated that the trainings arrangement were group contact, in which a large number of people were involved and the teaching method was simple so everyone of the participant was able to get the desired information. Fifty one point twenty five percent of the respondents stated that group contact method of training was adopted in which the share of the respondents from each village was as 57.14% of the sampled respondents were from nahaqi, 36% of the respondents were from khazana and 60% of the sampled respondents were from mairo. The individual contact method used for training among the selected study is by Agric. Extension department which was stated by 48.75% of the sampled respondents. In this class the proportion of each village was as 42.86% were from nahaqi rest of the respondents were from khazana and mairo which were 64% and 40% respectively. As the results shows that vastly used method of conducting training was group contact through which a large number of participant can be addressed this method of training is also reported by (Abbas et al, 2005) the best method of conducting training.

**Table 9 Methods of Conducting Trainings**

Villages	Methods of conducting trainings				Total
	Individual contact		Group Contact		
	No.	%	No.	%	
Nahaqi	15	42.86	20	57.14	35
Khazana	16	64	9	36	25
Mairo	8	40	12	60	20
Total	39	48.75	41	51.25	80

Source: Field Survey, 2013

### Effect of training on productivity

Table 10 shows the effect of training on tomato productivity in the study area. The table shows that majority of the sample respondents stated that their tomato productivity was increased due to the activities launched by Agric. Extension department in the area. Majority of the sampled respondents which were 68.75% of all the sample size who stated that their tomato productivity was increased due to trainings and other activities launched by Agric. Extension department in the study area. In this proportion the share of each village was as 68.57% were from nahaqi area where those from khazana were 72% and at the end the share of mairo village was 65%. The second group was of those sampled respondents who stated that the productivity was remain the same after attending the trainings the reason stated by them was as the innovations and technologies transferred to them via trainings and other activities were already known to them, no such new idea were there. In this group the share

of each village was as from nahaqi this ratio was 22.86% followed by 24% from khazana and the share of mairo was 25%. The last group of the people was those who stated that their productivity was decreased due to the methods and technologies transferred to them. Reason of decreasing productivity was due to their lack of interest in these activities which as a result reduced their production. The result of activities launched by agricultural extension department made positive change on the productivity of tomato in most of the respondent's opinion. The result is in close matching with (Bashir *et al.*, 2010) who also stated in similar study that the activities of private sector as well as government sector bring positive impact on crop productivity.

**Table 10 Effect of Training on Productivity**

Villages	Effect of Training on Productivity						Total
	Increased		No change		Reduced		
	No.	%	No.	%	No.	%	
Nahaqi	24	68.57	8	22.86	3	8.57	35
Khazana	18	72	6	24	1	4	25
Mairo	13	65	5	25	2	10	20
Total	55	68.75	19	23.75	6	7.5	80

Source: Field Survey, 2013

#### Effect of Agricultural Extension Agent Activities in Tomato Productivity

Table 11 shows the effect of agricultural extension agents on tomato productivity in selected villages for the study. Where the analysis were conducted using standard Paired T-test by SPSS Software package, comparison of the production of those respondents who attended the activities launched by Agric. Extension agents to those who did not attend the activities were made at .05% level of significance. The test statistics shows that at the rate of 10% sample size the result is highly significant which indicates that due to activities of agricultural extension agent's positive change was observed in tomato production. The result are in close agreement with (Bashir *et al.*, 2010) who stated in similar study that due to micro credit the production of the respondents wheat crop was increased by 13 %.

**Table 11 Effect of Agriculture Extension Agents on Tomato Productivity**

Crop	Average Yield (kg/kanals)				T-value	Significance
	With Training	With Out Training	Difference			
Tomato	1104.7	1009.9	103 (10.39% kg/Kanals)		23.73	0.000*

Source: Field Survey, 2013

\*level of significance at 05%

#### Conclusions

The proposed study was conducted in order to find the role of extension agents in enhancing tomato productivity in district Peshawar; hence the study was conducted in selected villages of district Peshawar where visits were made to tomato growers in order to gather relevant data. The detail analysis was made and secondary data was used. The following conclusions were made on the basis of the study findings.

- Education ratio and taking up of tomato technology are interdependent. Higher the rate of education will encourage the rate of adoption of new innovations and technology which at result will increase production.
- Majority of the tomato growers faced certain problems like lack of credits, improper marketing, non-availability of seed, insect pest attacks and lack of fertilizers.
- The role of extension agents was obviously good and cannot be over neglected, in this study effective role of extension agent is positively correlated with adoption and production of tomato.
- The tomato productivity was increased considerably due to the extension agent activities in the study area. The statistics of the analysis show that the increase in productivity was 10.39%.

#### Recommendations

- The agricultural extension agents should carry on their activities in order to increase the production of various vegetables and crops.
- All categories of farmers should be involved equally in the process of learning of innovations and new techniques.
- The government should insure the availability of various necessary inputs at proper time with reasonable costs.

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