

## **Original Research Article**

### **An analysis of socio-personal characteristics of apple growers and their attitude towards apple cultivation in district Shopian of J&K**

**Abstract:** The present study was conducted in district Shopian of Jammu and Kashmir in 2014 with sample size of 180 respondents. The district Shopian was purposively selected, because of the potential for the development of horticulture, mainly because 90% of the district was under apple cultivation. The data were collected from three different altitudes viz- low, medium and high altitudes. Different socio-personal characteristics viz- age, experience, education, family education, family type, family size, innovative proneness were studied from different altitudes. Attitude of the apple growers was also studied and it has been revealed that most of the apple growers from all three altitudes were having neutral attitude towards apple cultivation.

**Keywords:** Altitude, apple cultivation, attitude, socio-personal characteristics.

#### **Introduction:**

Agricultural as well as horticultural sector is considered as one of the effective factors in economic development of India. Achieving food and nutritional security is possible only by making use of new technologies in farm land. Today in most parts of the world, due to limited land and water resources,

increase in production and quality food is hardly possible unless ~~need-need~~-based effective techniques in production system are adopted by the farmers. In the state of Jammu and Kashmir, Kashmir valley is endowed with congenial agro-climatic conditions for a wide range of horticultural crops. The growth in area and production of horticultural crops like peach, pear, plum, and apple, is quite impressive. Jammu and Kashmir is rightly known as an apple state of India, contributing 4,200 million to the state GDP (Anonymous, 2013).

Apple is one of the most widely cultivated tree fruits. The apple is the fourth widely produced fruit in the world after banana, orange and grapes. India is ranked as the sixth largest world's apple producing country and second largest country in area (Deodhare *et al.*, 2006). As far as apple production is considered, it accounts for 51% of total area of 2.72 lakh hectares under all temperate fruits grown in this state. The annual apple production in the state is 13.73 lakh metric tonnes (Anonymous, 2009). Average yield of apple cultivars per unit area of state is highest in the country ranging between 10-12 tonnes/ha, still the yield is poor as compared to 20-30 tonnes/ha grown in horticulturally advanced countries of the world. Climate and other agro-ecological factors of Kashmir are ideally suited to the cultivation of many varieties. However, it has been found that the socio-economic characters of the farmers greatly affect the farming community and hence production and productivity. Raut (2006) conducted a study in Nagpur district of Maharashtra and indicated that more than

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half of the orange growers (53.33%) were middle aged, followed by old (30.00%) and young age (16.67%) group. Gotyal (2007) inferred that 42.50% of the grape growers belonged to old age category, followed by middle age (39.00%) and young age (18.50%) group. Patil (2008) conducted a study on constraints analysis of grape exporting farmers of Nasik and Sangli districts in Maharashtra state and revealed that grape growers had been spread in all the three age groups, viz.; young age (36.00%), middle age (34.00%) and old age (30.00%) category. Hinge (2009) in his study stated that more than 60.00% of wine grape growers belonged to middle age category. Whereas, 23.12 and 15.00% belonged to old age and young age categories, respectively. Kiran (2003) in a study on technological gap and constraints in adoption of recommended practices of mango growers reported that nearly half (49.00%) of the respondents had medium experience in mango cultivation while remaining 26.00% and 25.00% of the respondents had low and high experience in the mango cultivation respectively. On an average the respondents had 19.28 years of experience in mango cultivation. Ramanna *et al.* (2000) revealed that 70.00% of the farmers had medium level extension agency contact and 30.00% of the farmers had high level extension agency contact. Lakshmisha (2000) in his study on impact of cashew demonstrators on knowledge, adoption and yield levels of farmers in Dakshina Kannada district revealed that 50% of the cashew growers had medium social participation, 35% of the cashew growers had high social

participation and only 15% of cashew growers had low social participation. Borkar *et al.* (2000) conducted a study on characteristics of farmers influencing their knowledge about use of biofertilizers and observed that [the](#) majority (58.67%) of the farmers had knowledge about the use of biofertilizers to a moderate level, followed by 22.67% of them ~~had~~ [having](#) high level of knowledge and 18.66 per cent of them ~~had~~ [with](#) low level of knowledge. Palaniswamy and Sriram (2001) in their study found that [the](#) majority of the farmers (84.35%) had medium level of extension agency contact, followed by 5.45 and 10.20% of the farmers with low and high level of extension agency contact, respectively. Babanna (2002) in his study on arecanut growers in Shimoga district reported that 32.5% of the arecanut growers had high social participation followed by 40% of the growers having medium level and only 27.5 per cent of the growers had low social participation level. Bhople and Borkar (2002) in their study on ~~biofertilizers~~ farmer attitude and adoption [for biofertilizers](#) observed that [the](#) majority of the farmers (84.00%) belonged to moderate level of knowledge about different kinds of bio-fertilizers and their associated practices, about one tenth of them were adequately equipped with the knowledge about biofertilizers and appeared in high knowledge category. Vedamurthy (2002) in his study on the management of areca gardens and marketing pattern preferred by the arecanut farmers of Shimoga district in Karnataka reported that equal per cent (28.66%) of the arecanut growers are large and small arecanut farmers, 24% of the respondents

are medium land holding farmers and 18.66% of the farmers are marginal land holders. Sunilkumar (2004) revealed that 40.83% of the farmers belonged to medium extension contact category, followed by 30.00 and 29.16% ~~who~~ belonging to high and low categories of extension contact, in Belgaum district of Karnataka state, respectively. Govinda and Narayana (2006) inferred that considerable percentage of Thompson Seedless grape growers (46.00%) belonged to medium innovative proneness category. While, a little more than 50.00 per cent of Bangalore Blue grape growers (52.00%) belonged to high innovative proneness category. Saleemet *al.* (2010) reported that the actual yield of fruit produced at the farmers' fields is considerably less than that of potential fruityield-of-the fruit. One of the major factors causing this huge yield gap was the lack of knowledge, skill and attitude of fruit growers regarding the modern production technology. This deficiency on the part of the fruit growers can be overcome by comprehensive training and extension program for farmers concerning modern fruit production techniques. Ejolleet *al.* (2010) stated training needs of farmers as skill, knowledge and attitude an individual requires in order to overcome the problems as well as to avoid creating problem situation. It is clear that training of the farmers is an essential resource, which will direct knowledge and skill towards crop production.

#### **Research Methodology:**

The present study was conducted in 2014 in the state of Jammu and Kashmir comprising extreme sector of Himalaya's

and occupies a central geographical location in the Asian continent. A multistage sampling procedure was adopted for the selection of districts, tehsils, villages and sample respondents. Kashmir valley consists of 10 districts namely Anantnag, Kulgam, Pulwama, Shopian, Srinagar, Bandipora, Baramulla, Budgam, Ganderbal and Kupwara. District Shopian was purposively selected because of the potential for the development of horticulture, mainly because 90% ~~area~~ of the district cultivated land surface was under apple plantation and prevailing agro climatic situations were very good for cultivation of horticultural crops especially fruit crops and apple, in particular. The study was conducted in three altitudes viz. high altitude, mid altitude and low altitude in the form of strata, which were purposively selected. Each strata consisted of three villages which were randomly selected. Accordingly a sample size of twenty farmers from each village was selected randomly, thus making a sample size of sixty respondents from each strata. A sample size of 180 respondents from all the three strata~~s~~ was included in the study based on the total respondents engaged with apple cultivation. The mean and standard deviation of all~~the~~ respondents~~2~~ were computed for classifying them in different categories. The socio-personal characters were measured by using different scales:

#### **1. Age**

It refers to the chronological age of the respondent at the time of investigation. The age of the respondents was

recorded as mentioned by them in completed years. It was measured by direct questioning of the respondents.

## 2. Education

It refers to the qualifications of the respondent which have been acquired through formal schooling. It was measured using socio-economic scale (SES) developed by Trevedi (1963) and the scoring pattern followed by him to measure the education was used:

S. No.	Elements	Score
1.	Illiterate	(0)
2.	Can read only	(1)
3.	Can read and write	(2)
4.	Primary	(3)
5.	Middle	(4)
6.	Matric	(5)
7.	Graduate	(6)
8.	Post Graduate	(7)

Figures within parenthesis indicate score.

## 3. Family education

It is operationally defined for the present study as the formal education received by the members of the respondent's family (above 6 years of age). It was measured by the scale developed by Singh and Narwal (1974). The scoring pattern used by them was followed:

S. No.	Elements	Score
1.	Illiterate	(0)
2.	Can read only	(1)
3.	Can read and write	(2)
4.	Primary	(3)
5.	Middle	(4)
6.	Matric	(5)

7.	Graduate	(6)
8.	Post Graduate	(7)

Figures within parenthesis indicate score.

The scores of individual family members were added up, to obtain the total educational score of the family and the same ~~as~~ divided by the number of family members in order to arrive at family education scores (FES). ~~W~~Which is shown as under:

$$FES = \frac{\text{Total Education Score of Family}}{\text{No. of family members above 6 yrs of age}}$$

#### 4. Family type

It refers to the type of family farmers belongs to nuclear, joint or extended.

#### 5. Family Size

Refers to the total number of family members of the farmer:

S. No.	Category	Members
1.	Small	< 5 members
2.	Medium	5 – 10 members
3.	Large	> 10 members

#### 6. Land Holding

It refers to the number of acres of land used for cultivation by the respondents at the time of interview. The socio-economic scale (SES) rural scale developed by Trevedi (1963) was used to measure the size of holdings as indicated below:

S. No.	Elements	Score
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1.	No holding.	(0)
2.	Less than 1 acre.	(1)
3.	Upto 5 acres.	(2)
4.	6-10 acres.	(3)
5.	11-15 acres.	(4)
6.	16-20 acres.	(5)
7.	More than 20 acres.	(6)

Figures within parenthesis indicate score.

#### 7. Social Participation-

Social Participation refers to collective activities that individuals may be involved in, as part of their everyday lives. The socio-economic scale (SES) developed by Trevedi (1963) was used to measure the social participation as indicated below:

S. No.	Elements	Score
1.	Member of No organization.	(0)
2.	Member of One organization.	(1)
3.	Member of > One organization.	(2)
4.	Organization office holder.	(3)
5.	Wide public leader.	(4)

Figures within parenthesis indicate score

#### 8. Media Exposure-

This variable is operationalized as the exposure of an individual respondent to different mass media channels such as Newspaper, Farm magazine, Radio, Television and his degree of utilization with them. The procedure suggested by Singh (1983) was followed for measuring media exposure of the respondents.

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S.No.	Media	Daily (3)	Often (2)	Rarely (1)	Never (0)
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1.	Reading newspaper				
2.	Reading farm magazine.				
3.	Listening to radio				
4.	Viewing TV				

#### 9. Innovative Proneness.

It refers to the behaviour pattern of an individual who has interest and desire to seek changes in farming techniques and ready to introduce such changes into his operations when practical and feasible. The innovative proneness was measured by using the self-rating scale developed by Moulikand Rao (1965). The scale consisted of three items and each item has three parts with varying degree of innovative proneness. The responses were checked by simply reading of the statements on whether least like or most like, particular statement of change proneness. The most like statements were awarded a score of 2 and the least like as 1. In this way, most like scores were multiplied by their corresponding scale values and least like statements by their corresponding scale values. Innovative proneness for each individual was calculated by using the formula:

$$\text{Innovative proneness} = \frac{\text{Sum of ratios of most like statements}}{\text{Sum of ratios of least like statements}}$$

#### 10. Extension Contact.

Frequency of contact of a respondent with any personnel of the various extension agencies to get information. It was measured by the procedure suggested by Singh (1983).

#### 11. Experience in Horticulture.

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It refers [to](#) the number of years; the respondent is engaged in apple cultivation at the time of investigation. The experience in apple cultivation of the respondents was recorded as mentioned by them in completed years. It was measured by direct questioning to the respondents.

## **12. Attitude Towards apple Cultivation**

Degree of positive and negative effect of respondent associated with apple cultivation. Attitude is a person's perspective towards a specified target and way of saying and doing things. It is a tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour. Attitude of farmers was measured on three point continuum.

### **Result and discussion:**

#### **1. Age**

The data presented in the table 1 reveals that in low altitude, 35% of the apple growers were middle aged in the age group of 29-56 years, followed by 33.44%, who were old (above 56 years) and 31.66% of the apple growers were young, who belonged to the age group of 18 to 28 years. It indicates that in the lower altitude, majority of the apple growers (35%) were middle aged, in the age group of 29-56 years. While in mid altitude, 41.66% of apple growers were middle aged, in the age group of 29-56, followed by young (30%) belonging to the age group of 18-28 years and 28.44% of the old aged apple growers (above 56 years). It indicates that in the mid altitude, majority of the apple growers (41.66%) were middle aged in

the age group of 29-56. In case of high altitude, the data reveals that 50% of the apple growers were middle aged in the age group of 29-56 years, followed by 26.6%, who were oldaged above 56 years and 23.44% of the apple growers were young in the age group of 18 to 28 years. So it is evident that majority of the apple growers (50%) were middle aged in the age group of 29-56 years as shown in (Fig 1).

## **2. Experience**

The data presented in the table 2 reveals that in low altitude, the majority 43.44% of the apple growers were having low experience (upto 10 years) regarding apple cultivation, followed by 31.6%, who had high experience greater than 31 years and 25% of the apple growers were having medium experience in the range of 11-30 years. It indicates that in the low altitude, the majority of the apple growers (43.44%) were having low experience regarding apple cultivation. While in case of mid altitude 40% of the apple growers were having low experience upto 10 years of apple cultivation, followed by 3%, who had medium level of experience in the range of 11-30 years and 25% of the apple growers, were having high experience more than 31 years. It indicates that in the mid altitude, majority of the apple growers (40%) were having low experience regarding apple cultivation. In high altitude 43.33% of the apple growers were having low experience upto 10 years regarding apple cultivation, followed by 38.34%, who had medium experience in the range of 11-30 years and 18.33 per cent of the apple growers were having high experience more

than 31 years in apple cultivation. It indicates that in all the three altitudes, the majority of the apple growers were having low experience regarding apple cultivation as shown in Fig 2.

### **3. Education**

The data presented in the table 3 reveals that in low altitude the majority of the apple growers 21.66% were illiterate, followed by 16.66% of apple growers, who had their education up to matric and graduate, 15% of apple growers, had their education up to twelfth, 13.33% of apple growers, had their education up to primary, 10% of the apple growers, had their education up to middle, and 6.66% of the apple growers were above graduate. In mid altitude majority of the apple growers 31.66% were illiterate, followed by 16.66% of the apple growers, had their education up to middle, 13.33% of apple growers, had their education up to twelfth and graduate 11.66% of apple growers, had their education up to primary and matric, and 1.66% of the apple growers were above graduate. In case of high altitude majority of the apple growers 40% were illiterate, followed by 20% of the apple growers, who had their education up to middle, 16.66% of apple growers, had their education up to matric, 15% of apple growers, had their education up to twelfth, 08.33% of apple growers, who had their education up to primary, however none of the apple growers was graduate as shown in Fig 3.

### **4. Family Education**

It is evident from the data presented in the table 4 that in low altitude majority of the apple growers 40% were having

high level of family education, followed by 31.66% of apple growers, who were having medium level of family education and 28.44% of the apple growers were having low level of family education. Where as in case of mid altitude, majority of the apple growers 41.66% were having medium level of family education, followed by 33.44% of apple growers, who were having low level of family education and 25% of the apple growers were having high level of family education. In high altitude majority 40% of the apple growers were having low level of family education, followed by 36.66% of apple growers, who were having medium level of family education and 23.44% of the apple growers were having high level of family education as shown in Fig 4.

#### **5. Family type**

The data presented in the table 5 reveals that in low altitude, ~~maximum~~ the most 61.66% of the apple growers belonged to nuclear family, followed by 28.44% of the apple growers, who belonged to joint family and minimum of 10% of the apple growers belonged to extended family. While as in case of mid altitude, 41.66% of the apple growers belonged to nuclear family, followed by 40% of the apple growers, who belonged to joint family and 11% of the apple growers belonged to extended family. In case of high altitude, 50% of the apple growers belonged to joint family, followed by 26.66% of the apple growers, who belonged to extended family and least 23.44% of the apple growers belonged to nuclear family.

## 6. Family size

It is evident from the data presented in the table 6 that in low altitude, ~~maximum~~ the most 60% of the apple growers were having small family size, upto 5 members, followed by 30% of the apple growers, who were having medium family size of five- to ten members and minimum of 10% of the apple growers were having large family size, of more than ten members. In mid altitude, the most ~~maximum~~ 38.44% of the apple growers were having small family size, upto 5 members, followed by 35% of the apple growers, who were having medium family size, of five to ten members and minimum of 26.66% of the apple growers were having large family size, with family members above ten. In contrast to high altitude, the most ~~maximum~~ 63.44% of the apple growers were having medium family size, of 5-10 members, followed by 21.66% of the apple growers, who were having small family size, upto five members, and minimum of 15% of the apple growers were having large family size, of more than ten members.

## 7. Land holding

The data presented in the table 7 reveals that in low altitude, 36.66% of the apple growers were marginal farmers having their land holdings below one hectare, followed by 33.44% of the apple growers, who were in small category, having their land holdings above one hectare but less than two hectares, while as 30% of the apple growers belonged to medium category, having their land holdings above two hectares but less than four hectares. In case of mid altitude,

45% of the apple growers belonged to marginal category having their land holdings below one hectare, followed by 36.66% of the apple growers, who belonged to small category, having their land holdings above one hectare but less than two hectares, while as minimum of 18.44% of the apple growers belonged to medium category, having their land holdings above two hectares but less than four hectares. While as in case of high altitude, 56.66% of the apple growers were of marginal category having their land holdings below one hectare, followed by 28.33% of the apple growers, who belonged to small family, having their land holdings above one hectare but less than two hectares, while as minimum of 15% of the apple growers belonged to medium family, having their land holdings above two hectares but less than four hectares.

#### **8. Social participation**

The data presented in the table 8 reveals that in low altitude, 81.66% of the apple growers were members of no organization (social as well as cooperative), followed by 18.44% of the apple growers, who were member of one organization only. In case of mid altitude, 86.66% of the apple growers were members of no organization, followed by 13.44% of the apple growers, who were member of one organization. In case of high altitude, maximum of 96.66% of the apple growers were members of no organization, followed by 3.44% of the apple growers, who were member of one organization.

#### **9. Media exposure**



The data presented in the table 9 reveals that in low altitude, 60% of the apple growers were having high level of media exposure, followed by 26.66% of the apple growers, who were having medium level of media exposure, and 13.44% of the apple growers, and were having low level of media exposure. In case of mid altitude, 36.66% of the apple growers were having medium level of media exposure, followed by 33.44% of the apple growers, who were having low level of media exposure, and 30% of the apple growers, and were having high level of media exposure. In case of high altitude, 41.66% of the apple growers were having low level of media exposure, followed by 35% of the apple growers, who were having medium level of media exposure, and 23.44% of the apple growers, and were having high level of media exposure.

#### **10. Innovative proneness**

It is evident from the data presented in the table 10 that in low altitude, 38.33% of the apple growers were having medium level of innovation proneness, followed by 33.33% of the apple growers, who were having low level of innovation proneness and 28.44% of the apple growers were having high level of innovation proneness. While in mid altitude, 40% of the apple growers were having low level of innovation proneness, followed by 38.44% of the apple growers, who were having medium level of innovation proneness and 21.66% of the apple growers were having high level of innovation proneness. In case of high altitude, 65% of the apple growers were having low level of innovation proneness, followed by

28.44% of the apple growers, who were having medium level of innovation proneness and 96.66% of the apple growers were having high level of innovation proneness as shown in Fig.5.

#### **11. Extension contact**

The data presented in the table 11 reveals that in low altitude, 60% of the apple growers were having low extension contact, followed by 25% of the apple growers, who were having high extension contact and 15% of the apple growers were having medium extension contact. Where ~~as~~ in case of mid altitude, 68.44% of the apple growers were having low extension contact, followed by 16.66% of the apple growers, who were having medium extension contact and 15% of the apple growers were having high extension contact. In case of high altitude, 75% of the apple growers were having low extension contact, followed by 18.44% of the apple growers, who were having medium extension contact and 6.66% of the apple growers were having high extension contact. It indicates that in all three altitude areas farmers were having low level of extension contact which is indicative of big extension gap (no extension).

#### **II. Attitude of farmers towards apple cultivation**

The data presented in table 12 reveals that in lower altitude 50% of apple growers had neutral attitude towards apple cultivation, followed by 35% of the apple growers, who had favourable attitude towards apple cultivation and 15% had less favourable attitude towards apple cultivation In case of middle altitude 41.66% of apple growers had neutral attitude

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towards apple cultivation, followed by 30% of the apple growers, who had **less favourable** attitude towards apple cultivation and 28.44% had favourable attitude towards apple cultivation. In case of upper altitude 40% of apple growers had neutral attitude towards apple cultivation, followed by 33.44% of the apple growers, who had **less favourable (unfavourable)** attitude towards apple cultivation and 26.66% had favourable attitude towards apple cultivation. It indicates that in all three altitudes ~~i.e. lower altitude, middle altitude and higher altitude,~~ **the** majority of the farmers were having neutral attitude towards apple cultivation.

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**Table - 1 Distribution of apple growers according to their age, (N=180)**

Age group	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Young(18-28)	19	31.66	18	30	14	23.44
Middle(29-56)	21	35	25	41.66	30	50
Old(>56)	20	33.44	17	28.44	16	26.66
Mean $\pm$ S.D	42.49 $\pm$ 13.90		44.81 $\pm$ 16.08		48.08 $\pm$ 15.98	
Observed range	18-72		22-75		18-90	

(Mean indicates mean age of respondents.)

**Table - 2 Distribution of apple growers according to their experience, (N=180)**

Experience	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Low (Upto 10 years)	26	43.44	24	40	26	43.44
Medium (11-30 years)	15	25	21	35	23	38.33
High(>30)	19	31.66	15	25	11	18.33

Mean $\pm$ S.D	20.1 $\pm$ 10.13	21.30 $\pm$ 11.07	22.68 $\pm$ 10.79
Observed range	07-40	05-44	04-50

**Table - 3 Distribution of apple growers according to their education, (N=180)**

Education	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Illiterate	13	21.66	19	31.66	24	40
Primary	08	13.33	07	11.66	05	8.33
Middle	06	10	10	16.66	12	20
Matric	10	16.66	07	11.66	10	16.66
10+2	09	15	08	13.33	09	15
Graduate	10	16.66	08	13.33	00	00
Above graduate	04	6.66	01	1.66	00	00

**Table - 4 Distribution of apple growers according to their family education, (N=180)**

Family education	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Low	17	28.44	20	33.44	24	40
Medium	19	31.66	25	41.66	22	36.66
High	24	40	15	25	14	23.44
Mean $\pm$ S.D	2.52 $\pm$ 1.02		2.25 $\pm$ 0.87		1.95 $\pm$ 0.94	
Observed range	0.42-5.28		0.4-3.62		0.2-3.85	

(Mean indicates mean education score of respondents).

**Table - 5 Distribution of apple growers according to their family type, (N=180)**

Family type	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Nuclear	37	61.66	25	41.66	14	23.44

Joint	17	28.44	24	40	30	50
Extended	06	10	11	18.44	16	26.66

**Table - 6 Distribution of apple growers according to their family size, (N=180)**

Family size	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Small (Upto 5 members)	36	60	23	38.44	13	21.66
Medium (5-10 members)	18	30	21	35	38	63.44
Large ( More than 10 Members)	06	10	16	26.66	09	15

**Table - 7 Distribution of apple growers according to their land holding, (N=180)**

Land holding	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Marginal (Less than 1 ha)	22	36.66	27	45	34	56.66
Small (1-2 ha)	20	33.44	22	36.66	17	28.33
Medium (2-4 ha)	18	30	11	18.44	09	15

**Table - 8: Distribution of apple growers according to their social participation, (N=180)**

Social Participation	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Member of no organization	49	81.66	52	86.66	58	96.66
Member of one organization	11	18.44	08	13.44	02	3.44
Member of more than one organization	00	00	00	00	00	00
Organization office bearer	00	00	00	00	00	00
Wide Public Leader	00	00	00	00	00	00

**Table - 9 Distribution of apple growers according to their media exposure, (N=180)**

Extent of Media exposure	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Low	8	13.44	20	33.44	25	41.66
Medium	16	26.66	22	36.66	21	35
High	36	60.00	18	30	14	23.44
Mean $\pm$ S.D	8.36 $\pm$ 3.04		6.91 $\pm$ 3.62		6.13 $\pm$ 3.04	
Observed range	01-12		0-12		0-12	

(Mean of scores of all the respondents)

**Table - 10 Distribution of apple growers according to their innovative proneness, (N=180)**

Extent of Innovative Proneness	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Low	20	33.33	24	40	39	65
Medium	23	38.33	23	38.44	17	28.44
High	17	28.44	13	21.66	04	6.66
Mean $\pm$ S.D	8.06 $\pm$ 4.76		7.48 $\pm$ 4.27		4.56 $\pm$ 4.01	
Observed range	0.4-16		0.6-16		0.4-16	

(Mean of scores of all the respondents)

**Table - 11 Distribution of apple growers according to their extension contact, (N=180)**

Level of Extension contact	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Low	36	60.00	41	68.44	45	75
Medium	09	15.00	10	16.66	11	18.44
High	15	25.00	09	15.00	04	6.66
Mean $\pm$ S.D	7.11 $\pm$ 5.08		6.41 $\pm$ 5.51		5.15 $\pm$ 4.86	
Observed range	0-16		0-16		0-16	

(Mean of scores of all the respondents)

**Table - 12: Attitude of farmers towards apple cultivation, (N=180)**

Category	Altitude					
	Low $n_1=60$		Mid $n_2=60$		High $n_3=60$	
	No.	%	No.	%	No.	%
Favourable	21	35	17	28.33	16	26.66
Neutral	30	50	25	41.66	24	40
Less favourable	09	15	18	30	20	33.33
Mean±S.D	39.85±21.76		39.41±19.55		38.36±17.36	

(Mean of scores of all the respondents)

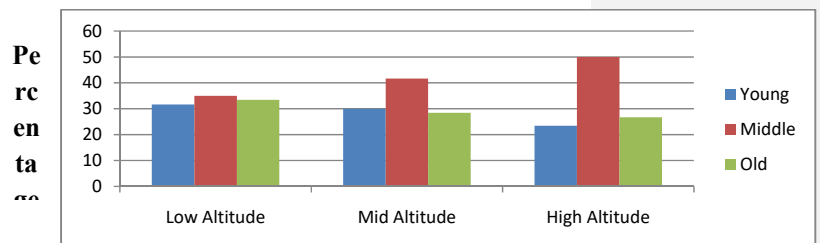


Fig 1 : Comparison of age of farmers in selected altitudes in the study area.

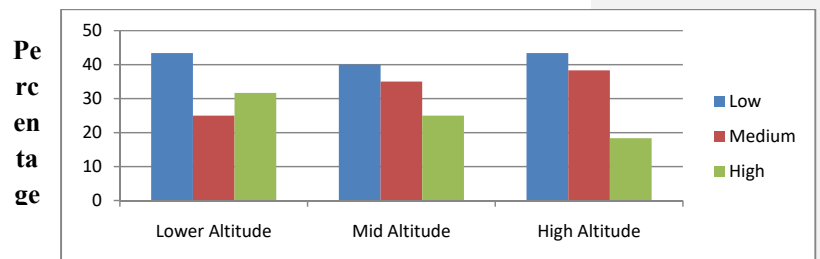


Fig. 2 : Experience of the farmers in apple cultivation in selected altitudes in the study area.

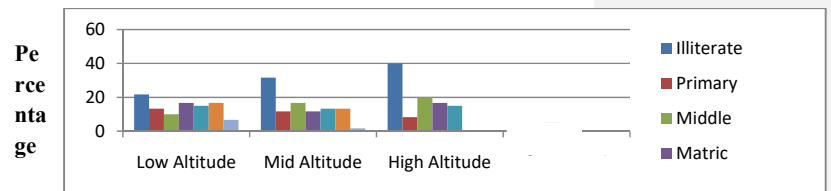


Fig. 3: Education of the farmers

Comment [u6]: The legend with the color is incomplete

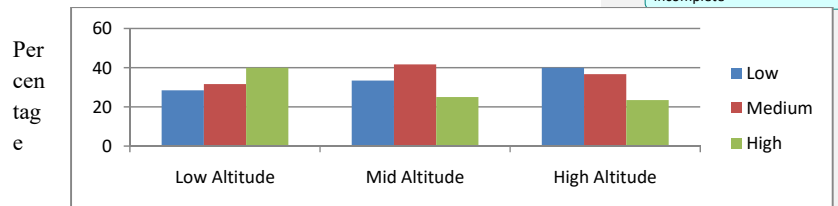


Fig. 4: Family education of apple growers in selected altitudes in the study area.

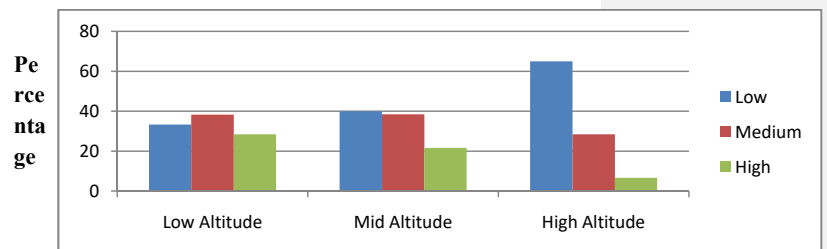


Fig. 5: Innovative Proneness of apple growers in the selected altitudes in the study area.

### Conclusion:

Apple production is considered the principle fruit crop of Jammu and Kashmir which also provides supplementary source of income, as some of the farmers are associated with



different establishments such as Government employees, business men etc. It is the backbone of the district economy and state as well. As most of the apple growers are middle aged with lesslow experience in apple cultivation and low educational background, so most of them are willing to take up improved practices if properly guided according to the improved packages of practices. The main purpose of this study, therefore, was to analyse the various socio-personal variables like age, experience, education level, family education status, family type, family size, land holding and socio-psychological variables like social participation, media exposure, innovation proneness and attitude of farmers towards apple cultivation. It was seen that the majority of the apple growers were having neutral, followed by favourable and less favourable (unfavourable) attitude towards apple cultivation. The neutral attitude of the apple growers was because of the fact that there is huge extension gap (no extension) that results in low returns from apple cultivation.

**References:**

- Anonymous, 2009. Temperate fruits: Package of practices. Shalimar offset press, 01 p.
- Anonymous, 2013. Ministry of Agriculture Government of Jammu and Kashmir. Greater Kashmir -The local English daily 12 November.
- Babanna, T. 2002. Information source consultancy and training needs of farmers in arecanut cultivation under

- Tungabhadra command area in Shimoga district. M.Sc. (Agriculture) thesis submitted to University of Agricultural Science, Bangalore (India).
- Bhople, R.S. and Borker. R.D. 2002. Biofertilizers farmer attitude and adoption. . *Agricultural Extension Reviews***14**: 21-22
- Borker. M.M., Chothe. G.D. and Lanjewar. A. D. 2000. Characteristics of farmers influencing their knowledge about use of biofertilizers. *Maharashtra Journal of Extension Education***19**: 130-131.
- Deodhar, S.Y., Landes, M and Krissoff, B. 2006. Prospects for Indian Emerging Apple Market: *USA Development of Agriculture* **3**: 12.
- Ejolle, E.E., Benedict, C.P. and Claude, B.J. 2010. Assessment of training needs of rubber farmers in the South-west region of Cameroon. *African Journal of Agricultural Research* **5**(17): 2326-2331.
- Gotyal, S.H. 2007. Backward and forward linkages of grape production in Karnataka. Ph.D. thesis submitted to University of Agricultural Science, Dharwad.
- Govindagowda, V. and Narayanagowda, K. 2006. Profile of Thompson Seedless and Bangalore Blue grape growers. *Mysore Journal of Agricultural Sciences***40** (3): 424-429.
- Hinge, R.B. 2009. A study on diffusion and adoption of wine grape production technology in Maharastra. M.Sc.

- (Agric) thesis submitted to University of Agricultural Sciences, Dharwad, Karnataka (India).
- Kiran, S.T. 2003. A study on technological gap and constraints in adoption of recommended practices of mango growers. M.Sc. (Agriculture) thesis submitted to Dr. BalasahebSawant Konkan KrishiVidyapeeth. Dapoli, Maharashtra (India).
- Lakshmisha. 2000. Impact of cashew demonstration on knowledge and adoption and yield levels of farmers in Dakshina Kannada district. M.Sc. (Agriculture) thesis submitted to University of Agricultural Sciences, Bangalore (India).
- Moulik, T.K. and Rao, C.S.S. 1965. Self-rating scale for farmers. In: Measurement in Extension Research Instrument, New Delhi (India).
- Palaniswamy, A. and Sriram, N. 2001. Modernization characteristics of sugarcane growers. *Journal of Extension Education***11**(4): 2906-2915.
- Ramanna, K.N., Chandrakandan, K. and Karthikeyan, C. 2000. Motivation factors and constraints of hybrid sunflower seed growers. *Journal of Extension Education***11**(3): 2840 – 2844.
- Raut, P.N. 2006. Production constraints of orange cultivation in Nagpur district of Maharashtra. *Asian Journal Extension Education***25**(1&2): 1-4.
- Saleem, A.T. and Ahmad, M. 2010. Identification and prioritization of competencies possessed by mango

- growers in district Faisalabad. *Pakistan Journal Agricultural Science* 47(4): 421-424.
- Singh, S.R. 1983. A study of technological gap in adoption of plant protection practices. Ph.D. thesis submitted to Department of Extension Education, Haryana Agricultural University, Hisar (India).
- Singh, Y.P. and Narwal, R S. 1974 .Audience analysis for using written words community development and Panchayati Raj, NICD, Hyderabad Digest 6(1): 22-28
- Sunilkumar, G.M. 2004. A study on farmers knowledge and adoption of production and post- harvest technology in tomato crop of Belgaum district in Karnataka. M.Sc. (Agriculture) thesis submitted to University of Agricultural Sciences, Dharwad (India).
- Trevedi, G. 1963. Measurement and analysis of socio-economic status of rural families. A study in CD block. Kanjhawala, Delhi State. Ph.D. thesis submitted to IARI, New Delhi.
- Vedamurthy, H.J. 2002 A study on the management of areca gardens and marketing pattern preferred by the arecanut farmers of Shimoga district in Karnataka. M.Sc. (Agriculture) thesis submitted to University of Agricultural Sciences, Dharwad (India).