Original Research Article

Knowledge and Skill Assessment of Farmers regarding Cherry Cultivation Practices. The case of District baramulla of Jammu and Kashmir (UT), India

A B S T R A C T

Present ~~The~~ study is based on the data collected from horticulture zone Tangmarg of district Baramulla of Jammu and Kashmir (UT), which consists of 34 fruit growing villages out of which 06 villages were selected purposively having maximum area under cherry fruit cultivation. From the selected 06 villages, 120 cherry growers were selected through proportionate allocation method. The study shows that majority (46.66%) of the cherry growers were having medium level of knowledge regarding various cherry cultivation practices. It was also found that most (50 %) of the cherry growers had low skills, 43.33 per cent of the cherry growers were having medium skills and very less percentage (6.66%) of the cherry growers had high skills of cherry cultivation. It was observed that majority of the cherry growers had not taken any expert guidance regarding various operations necessary for cherry cultivation. So it is categorical that cherry growers were not cultivating cherry as per the recommended package of practices of cherry. So a demand based cost effective training programmes and strategies need to be customize, so that human resource can be put to an effective use for achieving enduring cherry production.

Keywords: Cherry fruit; cherry growers; knowledge; Assessment ;Training: skills;

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Introduction

Cherry fruit belongs to family Rosaceae and genus Prunus. Cherry is a stone fruit, among stone fruits it is the first fruit of summer season to blossom and produce fruits. Cherry contains myriad of nutrients and is the most widely appreciated fruit for its colour, taste and sweetness. Cherry is dried, pickled and processed in juice, jam and is mostly consumed as fresh fruit. There are many species of cherry namely sweet cherry, tart cherry, black cherry etc. grown in the world. Sweet cherry (*Prunus avium* L.) is grown in countries having temperate climate and grows best between 33^0N and 55^0S latitude where temperature and other factors are favorable for its growth. The indigenous range of Sweet cherry extends through Caspian Sea, some areas of Europe and many parts of Asia (Chadha, 2003).

Cherries are Chef's favourite as they can be used in making a variety of recipes, They make dishes more attractive, delicious and delectable. Per 100grams of raw sweet cherry contains 0.3g fat, 3mg sodium, 173mg of potassium, 12g carbohydrates,1.6g dietary fiber, 8g sugar and 1g of protein besides these vitamin C is present in moderate content (16%), while other vitamins and dietary minerals each supply less than 10% of the Daily Value (DV) per

serving, respectively. Compared to sweet cherries, raw sour cherries contain 50% more vitamin C per 100 g (12% DV) and about 20 times more vitamin A (8% DV), beta-Carotene in particular [Anonymous 2013]. Due to its sweet taste, attractive colour and high amount of antioxidents, consumers demand is increasing by leaps and bounds. However, in some cases due to its perishability and short shelf life period of 7-10 days it fails to reach the consumer at optimal quality.

The major cherry producing countries in the world are Turkey, USA, Iran, Italy, Spain, Russia, Chile, France, and Germany. The total area under cherry cultivation in world was (151,004 Ha) and production (2,185,881Mt) (Anonymous 2015). United States is the largest exporter of cherry in the world and accounts 29 per cent of total share of world export followed by Chile (16%). Michigan is the top cherry producing state of US and is called as cherry capital of world (Anonymous, 2012). The total area under cherry cultivation in Jammu and Kashmir state was (2816 hac) with a production of (10244 MTs) and Baramulla District has an area of (212 ha) with a production of 1285.62 MTs (Anonymous, 2017).

Keeping farmers upto date and develop their knowledge and skill, regular training programmes are required for the welfare of farming community. Training is a process of teaching, or developing in oneself or others, new skills, attitude and knowledge in the context of preparing/improving one's efficiency in an enterprise. Effective training requires a clear picture how the farmers need to use the skills after training in place of local practices. Training is one of the common methods to improve knowledge and develops skill to the trainees. Training provides pivotal role in human resources development and acts as an essential source to improve efficiency, induce motivation and create confidences among individual (James chawang). Training alone can bridge the enormous gap between the potential yield and the yield obtained by the farmers (Hanumanlal and Pawar, 1995). Training of farmers is conducted to equip them with the required competencies so that they can perform desirable tasks with a quality and profitable output (Halim and Ali, 1988). Training has assumed importance and urgency in the context of hybrid verities and mechanization in agriculture and allied sectors, it is imperative on the part of training organizers to identify the training needs of farmers and prioritize them with a suitable training module so that an appropriate training can be given to the right people, in a right form at an appropriate time which could help to improve the knowledge and skill of trainees for achieving the higher degrees of productivity and profitability (VV Prajapati, BK Patel). Therefore, training of the farmers is 'an intensive learning activity, to improve the knowledge, skills and attitude level of the practicing farmers as well as the availability of appropriate applicable information, the utilization of which will correct the problems [JO Okwu, AS Ejembi]. Farmer training is directed towards improving their job efficiency in farming. The kind of education we call as training is not for knowing more but behaving differently [MV Sajeevetal].

The present study was carried to analyze the Knowledge and skills of cherry growers in Baramulla district of Kashmir valley. The findings of the study may be extremely useful to

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various policy makers, training programme organizers and administrators to assess different needs of cherry growers of the union territory of Jammu and Kashmir and may be useful to the line departments, who are involved in conducting the training programmes from time to time and then disseminating the technologies through this programme to cater the farmer needs.

2. METHODOLOGY

2.1 Location of the Study

The present study was conducted in Horticulture Zone Tangmarg of District Baramulla of kashmir Valley. Tangmarg is situated on the southern side of district and on the foothills of world famous tourist resort Gulmarg. Total geographical area of district Baramulla was (4194 km) with a population of 1,115,523 and having 523 villages (census 2011). It is situated at 34.180o N Longitude and 74.352o Latitude. With an average elevation of 1592 meters (5225 feets).With reference to population and area Baramulla districtis the largest district in the entire valley of Kashmir. It is located on the banks of river Jhelum. The literacy level of the district was 67.2 per cent. And average density of the population was 304 persq. km [Anonymous 2018].

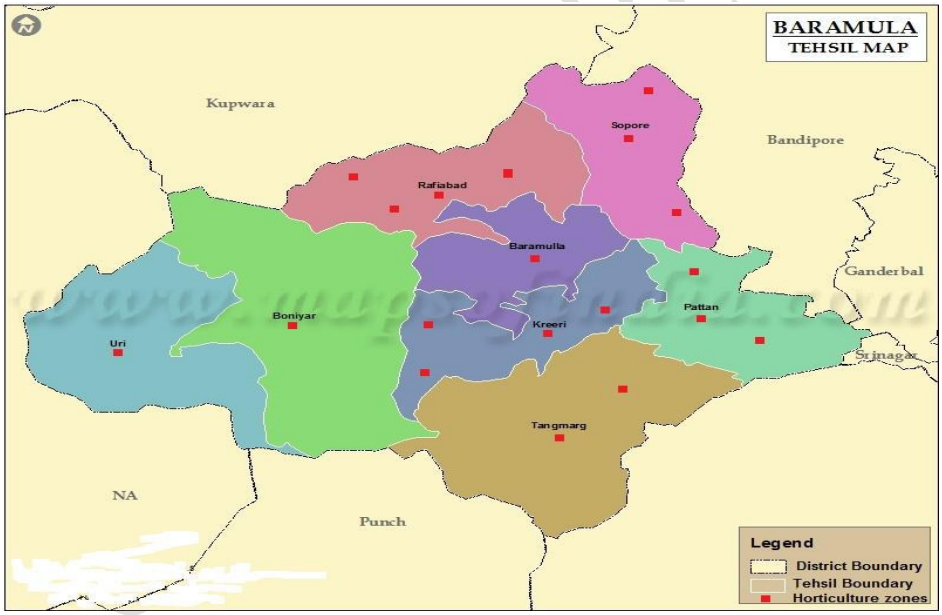

Figure 1. Map of Baramulla district showing study area (Tehsil)

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2.2 Sampling techniques

The sample of the present study was taken by selecting the respondents from the selected villages of the concerned horticultural zone to obtain the required information.

(I) Selection of horticulture zone District Baramulla comprises of 19 horticulture Zones, among them, Horticulture Zone Tangmarg was selected purposively for the study having maximum area under cherry fruit in the district.

(II)Selection of villages Horticulture Zone Tangmarg comprises of 64 villages out of them 34 villages were cultivating cherry, .Among these villages, only 06 villages were selected purposively having maximum area under cherry fruit cultivation.

(III)Selection of respondents With the help of horticultural extension functionaries and village representatives a list of 120 cherry growers was prepared from the selected 06 villages for the study purpose which were selected through proportionate random sampling method.

Table 1. List of selected villages and number of selected respondents

	Name of the village	**Total No. of cherry growers**	**No of Selected respondents**
01	Badipora	74	16
02	Werpora	106	22
03	Watelpoa	81	17
04	Hajhibal	84	18
05	Mulbanil	91	19
06	Ketipora	134	28
Total	570		120

By proportionate allocation method

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2.3 Designing of interview schedule

An interview schedule was prepared in consultation with the advisory committee members and horticultural extension functionaries. The recommended package of practices of Skuast Kashmir were incorporated in the schedule to know the knowledge level and skill of cherry growers The interview schedule was divide into part A and Part B in which knowledge level and skill of cherry growers were incorporated respectively.

2.4 Pre-testing of interview schedule

The interview schedule was pre- tested on non sampling area to detect the mistakes and shortfalls so as to achieve validity and reliability of the schedule.

2.5 Collection of data

The respondents from the sample area were personally interviewed by the author, and with the help of village representatives and extension functionaries data was collected from the respondents in an informal and friendly manner.

2.6 Statistical analysis

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The qualitative data was quantified by using various statistical tools and working out different scores in order to find out the knowledge level and skill of cherry growers

3. RESULTS AND DISCUSSION

Socio-personal and economic characteristics of the Cherry growers.

The characteristics of Cherry growers in terms of socio-personal, economic and psychological aspects are presented as :-

Table 2. Distribution of Cherry growers according to their socio- personal, economic and psychological characteristics. (N=120)

S.NO	Characteristics	Category	F	%age	Mean	S.D
01	Age	Young (<36 Years)	65	54.16	49.29	13.60
		Middle (36-63Years)	38	31.66		
		Old (>63 Years)	17	14.16		
02	Education	Upto middle school	65	57.17	-	-
		Middle to 10+2	32	26.67		
		Above 10+2	23	19.16		
03	Family size	Small (up to 4 members)	23	19.17	7.05	2.69
		Medium (5-10Members)	65	54.17		
		Large(>10 Members)	32	26.66		
04	Land Holding	Marginal (up to 1hec)	88	73.33	-	-
		Small (1.o1-2 hec)	24	20		
		Medium (2.o1-5)	8	6.66		
05	Annual income	Low (up to Rs100000)	78	65.00	180000	80000
		Medium (Rs 110000-240000)	24	20.00		
		High(Above 240000)	18	15.00		
06	Farming Experience	Low (up to 11)	81	67.50	19.2	7.94
		Medium (12-27)	21	17.50		

		High (>27)	18	15.00		
07	Source of Information	Low(Upto 10)	52	43.33	12.84	3.25
		Medium(11-16)	44	36.67		
		High(>16)	24	20.00		
08	Economic Motivation	Low (Upto 20)	46	38.33	22.5	3.25
		Medium (21-24)	57	47.50		
		High(>24)	17	14.17		
09	Risk Proneness	Low(Upto 14)	47	39.17	15.69	1.72
		Medium(15-18)	42	35.00		
		High(>18)	31	25.83		
10	Scientific Orientation	Low (upto26)	68	56.66	27.56	1.17
		Medium (27-30)	35	29.17		
		High (>30)	17	14.16		

F=Frequency, S.D=Standard Deviation

1: Age

The data in Table 2 reveals that 54.16 per cent of cherry growers were of young age (upto 36 years), followed by 31.66 per cent of middle age (36-63 years) and 14.16 per cent were of old age(above 63 years) .

Thus, majority (54.16%) of the cherry growers were of middle aged.

2: Education

Data in table 2 shows that out of the total cherry growers, 57.17 percent were educated upto middle, 26.67 percent were educated upto higher secondary level and 19.16 percent have education above higher secondary level.

Thus, it can be concluded that majority (57.17%) of the cherry growers had received education upto middle school.

3: Family size

Data in Table 2 reveals that 54.17 per cent of cherry growers had medium family size, followed by 26.66 per cent of large family size and 19.17 per cent belonged to small family size

Thu, higher percentage (54.17 %) of cherry growers belonged to medium family size.

4: land holding.

The data in Table 2 show that 73.33 per cent had marginal land holding (upto 1 hec), 20 per cent had small land holding (0.01-2 hec) and 6.66 per cent had medium land holding (2.01-5 hec).

Thus, higher percentage (73.33%) of cherry growers had marginal land holding.

5:Annual income

Data in Table 2 reveals that higher percentage 65.00 of cherry growers were having low annual income, followed by 20 per cent had medium annual income and minimum percentage (15%) belonged to high annual income group.

Thus, the higher percentage (65%) cherry growers were having low annual income,

6: Farming experience.

The data in Table 2 reveals that 67.50 per cent of the respondents had low level of farming experience (upto 11 years), followed by 17.5 per cent havingmedium level of farming experience (12-27 years) and 15.00 per cent had high level of farming experience(above 27 years).

Thus, it can be concluded that majority (67.50%) of cherry growers had low level of farming experience.

7: Source of information

The data in Table 2 reveals that 43.33 per cent of cherry growers had low source of information, followed by 36.67 per cent of cherry growers had medium level of source of information and only twenty per cent had high level of source of information.

Thus it can be concluded that near about fifty per cent of the cherry growers had low exposure to information.

8: Economic motivation

The data in Table 2 reveals that 47.50 per cent of the cherry growers had medium level of economic motivation, followed by 38.33 per cent of the cherry growers had low level of economic motivation, and a low percentage (14.17%) of the cherry growers had high level of economic motivation

Thus the majority (47.50%) of the cherry growers belonged to medium level of economic motivation

9: Risk Proneness

The data in Table 2 reveals that majority 39.17 percent of cherry growers had low level of risk proneness, followed by 35 per cent of the cherry growers had medium risk proneness and 25.83 percent of the cherry growers had high level of risk proneness.

Thus it can be concluded that majority (39.17%) of the cherry growers had low level of risk proneness.

10: Scientific orientation:

The data in Table 2 indicated that majority of the cherry growers (56.66%) possessed low level of scientific orientation, whereas 29.17 per cent had medium level of scientific orientation and 14.16 percent of the respondents had high level of scientific orientation.

Thus the majority (56.66%) of the cherry growers had low level of scientific orientation.

Table 3.Distribution of cherry growers according to their knowledge level about recommended Cherry cultivation practices:

(N=120)

S.NO	Area	Max Possible Score	Overall Score	Mean(x) Knowiedge Score	Knowledge Level			S.D
					Category	Frequency	%age	
01	Plant Production	40	1730	14.41	Low Medium High	33 67 20	27.5 55.8 16.66	2.87
02	Plant Protection	10	597	4.97	Low Medium High	41 73 6	34.16 60.83 5	1.15
03	Fertilizer Management	14	785	6.54	Low Medium High	42 66 10	35 55 10	1.60
04	Insect/Pest Management	10	332	2.74	Low Medium High	19 90 11	15.83 75 9.16	1.79
05	Disease Management	10	287	2.39	Low Medium High	30 82 8	25 68.33 6.66	1.80
06	Harvesting /Picking	10	874	7.26	Low Medium High	40 74 6	33.33 61.66 5	1.44

Data in Table 3, reveals that a majority of the respondents (55.8%) had medium level of knowledge, followed by 27.5 per cent having low level of knowledge and only 16.66 per cent of cherry growers were aware of the recommended fruit production practices.

Regarding plant protection measures, a majority (60.83%) of cherry growers possessed medium level of knowledge, followed by 34.16 per cent having low level of knowledge and only 5 per cent of cherry growers were aware of the plant protection measures.

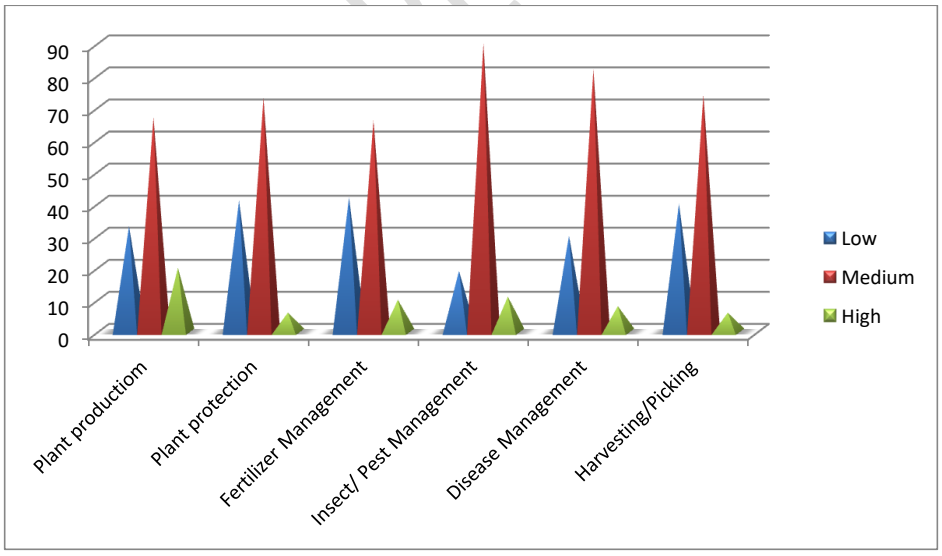
In case of fertilizer management, a majority (55%) of the cherry growers were having medium level of knowledge. while as, 35 per cent possessed low level of knowledge and only 10 per cent were having full knowledge about fertilizer management.

Regarding insect/pest management, a majority (75%) of the cherry growers were having medium level of knowledge, while 15.83 percent possessed low level of knowledge and only 9.16per cent possessed high level of knowledge about insect/pest management.

In case of disease management, a majority (68.33%) of the cherry growers possessed medium level of knowledge. while as, 25 percent were having low level of knowledge and only 6.66 per cent possessed high level of knowledge about disease management.

Regarding harvesting/picking, a majority (61.66%) of the cherry growers possessed medium level of knowledge, while 33.33 per cent had low level of knowledge and only 5.00 per cent were having high level of knowledge about harvesting/ picking.

Figure 2: Knowledge level of cherry growers about recommended Cherry cultivation practices:



Distribution of cherry growers according to their skill.

Table 4. Planning skill

S.No	Statement	Task performed	Not performed	Need Training	Not needed	Acquire Skill	Do not Acquire
1	Consultation with scientists/experts for planning	14 (11.66)	106 (88.33)	40 (33.33)	80 (66.66)	70 (58.33)	50 (41.66)
2	Selection of site	13 (10.83)	107 (89.16)	107 (89.16)	13 (10.83)	80 (66.66)	40 (33.33)
3	Soil Testing	17 (14.16)	103 (85.83)	105 (87.5)	15 (12.5)	90 (75)	30 (25)
4	Selection of Profitable varieties	56 (46.66)	64 (53.33)	50 (41.66)	70 (58.33)	90 (75)	30 (25)
5	Expert advice for layout	43 (35.83)	77 (64.16)	58 (48.33)	62 (51.66)	84 (70)	36 (30)
6	Pollination	35 (29.16)	85 (70.83)	76 (63.33)	44 (36.66)	92 (50.76)	28 (23.33)

Parenthesis indicates respective percentage.

Table 4 reveals that majority 88.33 percent of the cherry growers had not taken any guidance from experts for planning, 66.6 percent did not need any guidance from experts ,58.33 percent of cherry growers preferred to acquire guidance from experts on priority basis, while 41.66 percent of cherry growers did not prefer any guidance from experts,33.33 percent of the cherry growers were of the opinion that they need guidance from experts , while 11.6 percent of the cherry growers had taken guidance from experts before establishment of their orchards.

In case of site selection, 89.16 percent of cherry growers have developed their orchards without any proper site selection, and all of them require training for selection of a proper site and on priority basis 66.66 percent of cherry growers preferred to undergo training programme for such skills, while as 33.33 percent had not given any preference for any training, 10.83 percent of the cherry growers have established their orchards in a proper way, while 10.83 percent of cherry growers did not need training for site selection.

Regarding soil testing, 87.5 percent of cherry growers preferred to undergo training, prior to establishment of cherry orchards 85.83 percent had not done any soil testing, 75 percent of cherry growers preferred to undergo training on priority basis, while 25 percent did not need any training, of cherry growers had done soil testing prior to establishment of cherry orchards 14.16 percent had done soil testing in their orchards, while 12.5 percent of cherry growers did not preferred any training for soil testing .

Regarding selection of profitable varieties 75 per cent of cherry growers preferred training in selecting profitable varieties on priority basis, 58.33 percent of cherry growers were

of the opinion not to undergo training for such skill, 53.33 had not selected the recommended varieties for their orchards, 46.66 percent had selected the recommended varieties for their orchards, while 41.66 percent preferred to undergo training , while 25 percent of cherry growers were having the knowledge about the profitable varieties and preferred not to undergo any training.

Regarding layout planning, 70 percent of cherry growers were of the opinion to undergo training for this skill on priority basis, 64.16 percent had developed their orchards without any layout planning, 51.66 percent were having knowledge about the layout planning and preferred not to undergo any training for such skill, 48.33 percent of cherry growers preferred to undergo training, while 35.83 percent of cherry growers had planned the layout of their cherry orchards, while 30 percent had not preferred any training.

Regarding pollination 70.83 percent cherry growers have not maintained the proper pollinizer ratio and have faced the pollination problem in their orchards and,63.33 percent of cherry growers preferred training, while 50.76 percent of cherry growers preferred to undergo training for such skill on priority basis, 36.66 percent were having the proper knowledge of pollination and refused to undergo in any training programme for such skill, 29.16 per cent of cherry growers had maintained the polllinizer ratio in cherry orchards, while 23.33 percent did not prefer any training programme.

Table 5. Management skill (???)

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(N=120)

S.No	Statement	Task performed	Not performed	Need Training	Not need	Acquire Skill	Do not Acquire
1	Nutritional Management	52 (43.33)	68 (56.66)	109 (90.83)	11 (9.16)	95 (79.16)	25 (20.83)
2	Insect/Pest and Disease Management	23 (19.16)	97 (80.83)	107 (89.16)	13 (10.83)	102 (85)	18 (15)
3	Irrigation Management	53 (44.16)	67 (55.83)	72 (60)	48 (40)	88 (73.33)	32 (26.66)
4	Weed Management	23 (19.16)	97 (80.83)	50 (41.66)	70 (58.33)	62 (51.66)	58 (48.33)
5	Stress Management	42 (35)	78 (65)	90 (75)	30 (25)	77 (64.16)	43 (35.83)

6	Physiological Disorder Management	54 (35)	66 (55)	97 (80.83)	23 (19.16)	88 (73.33)	32 (26.66)

Parenthesis indicate respective percentage.

Table 5 reveals that 90.83 per cent of cherry growers were of the opinion that they need training for nutrient management of their cherry orchards,79.16 per cent of cherry growers preferred to acquire training on nutrient management on priority basis, 56.66 per cent of cherry growers had not managed nutrients properly. while as, 43.33per cent of the cherry growers had managed the nutrients for better health of plants in their orchards, 20.83 per cent of cherry growers had not preferred any training programme, while 9.16 per cent of cherry growers did not need any training for such .

Regarding management of insect/ pests and diseases, 89.16 of cherry growers need training for this skill, 85 per cent of cherry growers preferred to undergo training for such skill on priority basis, 80.83 per cent of cherry growers had not managed pest and diseases in their orchards. while as, 19.16 per cent of cherry growers had managed the insect/pests and diseases occurring in their orchards, 15 per cent of cherry growers did not prefer any training. While as, 10.83 per cent of cherry growers refused to undergo training for management of insect/ pests and diseases, among these while rest

Regarding management of irrigation , 73.33 per cent of cherry growers reported that need training for irrigation management on priority basis, 60 per cent of cherry growers need training for this skill, while 55.83 per cent of cherry growers had not maintained the irrigation facilities in their orchards, while as 44.16 per cent of cherry growers had acquired this skill, 40 per cent of cherry growers refused to undergo training for this skill, while 26.66 per cent of cherry growers did not prefer any training.

Regarding management of weeds, 80.83 per cent of cherry growers had not managed weeds in their orchards,58.33per cent of cherry growers refused to undergo training for this skill. while as, 51.66 per cent of cherry growers preferred to undergo training for weed management on priority basis, while 48.33 of cherry growers had not preferred any training for such skill, 41.66 per cent of cherry growers need training for weed management. while as, 19.16per cent of cherry growers had managed the weeds in their orchards.

Regarding management of stress, 75 per cent of cherry growers reported that they need training for stress management in their orchards, 65 per cent of cherry growers had not managed any stress in their orchards, 64.16 per cent of cherry growers preferred to undergo training for stress management on priority basis, while 35.83 per cent of cherry growers had not preferred any training for such skill.35per cent of cherry growers had managed different types of stresses in their orchards , while 25 per cent of cherry growers refused to undergo training for this skill,

Regarding management of physiological disorders,, 80.83 per cent of cherry growers revealed that they need training for protection of their orchards from various physiological disorders,73.33 per cent of cherry growers preferred to undergo training for such skill on priority basis, while 55 per cent of cherry growers had not managed these physiological disorders

in their orchards, 35 per cent of cherry growers had protected their orchards from various physiological disorders , 26.66 per cent of cherry growers had not prefer any training for such skill, while 19.16 per cent of cherry growers refused to undergo training for such skill.

Table 6. Practical Skill

(N=120)

S.No	Statement	Task performed	Not performed	Need Training	Not need	Acquire Skill	Do not Acquire
1	Fruit tree Propagation	90 (75)	30 (25)	110 (91.66)	10 (8.33)	80 (66.66)	40 (33.33)
2	Training/Pruning	40 (33.33)	80 (66.66)	116 (96.66)	4 (3.33)	98 (81.66)	22 (18.33)
3	Orchard Management	23 (19.16)	97 (80.83)	77 (64.16)	43 (35.83)	70 (58.33)	50 (41.66)
4	Wind breaks	28 (23.33)	92 (76.66)	78 (65)	42 (35)	96 (80)	24 (20)
5	Intercultural Operations	48 (40)	72 (60)	52 (43.33)	68 (56.66)	63 (52.5)	57 (47.5)
6	Fruit protection	40 (33.33)	80 (66.66)	109 (90.83)	11 (9.16)	98 (81.66)	22 (18.33)
7	Rodent Control	57 (47.5)	63 (52.5)	105 (87.5)	15 (12.5)	100 (83.33)	20 (16.66)
8	Handling of Spray equipments	71 (59.16)	49 (40.83)	75 (62.5)	45 (37.5)	62 (51.66)	58 (48.33)
9	Proper weighing of chemicals for spray	35 (29.16)	85 (70.83)	92 (76.66)	28 (23.33)	83 (69.16)	37 (30.83)
10	Grading and packing of fruits	80 (66.66)	20 (16.66)	45 (37.5)	75 (62.5)	56 (46.66)	64 (53.33)
11	Post Harvest Handling	110 (91.66)	10 (8.33)	61 (50.83)	59 (49.16)	100 (83.33)	20 (16.6)
12	Marketing Skills	80 (66.66)	40 (33.33)	63 (52.5)	57 (47.5)	70 (58.33)	50 (41.66)

Parenthesis indicate respective percentage.

Table 6 reveals that 91.66 per cent of the cherry growers were of the opinion that they need training from experts for propagation , 75 per cent of the cherry growers had taken guidance from experts for Cherry tree propagation before establishment of their orchards, 66.66 per cent of cherry growers preferred to acquire training from experts on priority basis, while 33.33 per cent of cherry growers did not prefer any training programme, while 8.33 percent did not need any training from experts.

Regarding training/pruning of cherry orchards, 96.66 percent of cherry growers reported that they need guidance for training/ pruning, 81.66 percent of cherry growers preferred to undergo training for such skills on priority basis, while as 66.66 percent of cherry growers had not received any guidance from experts for such skill, 33.33 percent of the cherry growers had performed training and pruning in their orchards properly, while 18.33 percent had not preferred any training. while as, 3.33 per cent of cherry growers refused to receive any guidance for training/ pruning of cherry orchards.

Regarding orchard management, 80.83 percent of cherry growers reported that they have not managed their orchards, 64.16 per cent of cherry growers need training for orchard management, 58.33 percent of cherry growers need training on priority basis, while as 41.66 per cent have not preferred any training for orchard management, 35.83 percent of cherry growers did not need any training for such skill, 19.16 per cent of cherry growers had managed their orchards properly,

Regarding wind breaks, 80 per cent of cherry growers preferred to acquire training on priority basis for planting of wind breaks around their orchards , 76.66 per cent of cherry growers had not planted wind breaks around their orchards, 65 per cent of cherry growers were of the opinion that they need training for such skill, while as 35per cent of cherry growers did not need any training for such skill, 23.33 percent of cherry growers had planted wind breaks on the borders of their orchards , 20 percent of cherry growers had not preferred any training on priority basis for such skill.

Regarding intercultural operations, 60 per cent of cherry growers reported that they have not undergone any training for intercultural operations for the orchards, 56.66 per cent of cherry growers refused to undergo training for such skill, while 52.5 per cent of cherry growers were of the opinion, that they need training for such skill on priority basis, while as, 47.5 per cent of did not prefer any training on priority basis, while as, 43.332 percent of cherry growers need training for such.

Regarding fruit protection, 90.83 percent of cherry growers preferred to undergo trainings for fruit protection ,81.666 of cherry growers reported that they need training for fruit protection on priority basis, 66.66 had not protected their fruits while as, 33.33 percent of cherry growers had protected their fruits properly and 18.33 per cent of cherry growers did not need any training for fruit protection ,, while as 9.16 per cent of cherry growers refused to undergo any training for such skill, while

Comment [P10]: Use data value upto two decimal points……check carefully in whole manuscript

Regarding rodent control, 87.5 per cent of cherry growers reported that they prefer to undergo training for rodent control, 83.33 per cent of cherry growers preferred to undergo training on priority basis for such skill, 52.5 per cent of cherry growers had not controlled rodents in their orchards, while as 47.5 per cent of cherry growers had controlled rodents in their orchards. 16.66 per cent of cherry growers refused to undergo any training on priority basis for such skill, while as 12.5 per cent of cherry growers did not need any training for such skill.

Regarding handling of spray equipments, 62.5 percent of cherry growers desired that they need training for such skill, while as 59.16 per cent of cherry growers were handling these spray equipments properly, 51.66 per cent of cherry growers were of the opinion that they need training for such skill on priority basis. while as, 48.33 per cent of cherry growers had not preferred. 40.83 per cent of them were not handling spray equipments properly, 37.5 per cent of cherry growers did not need any training for such skill.

Regarding proper weighing of chemicals for spray, 76.66 per cent of cherry growers reported that they need training, 70.83 per cent of cherry growers had not properly weighed the chemicals for spraying, 69.16 per cent of cherry growers preferred to undergo training for such skill on priority basis. while as, 30.83 per cent of cherry growers had not preferred any training for such skill. 29.16 per cent of cherry growers were properly weighing the chemicals for spray. while as, 23.33 percent of cherry growers did not need any training for such skill.

Regarding Grading and packaging of fruits, 66.66 per cent of cherry growers were grading and packing the fruits in a proper way, 62.5 per cent refused to undergo any training for grading and packing of cherry fruits, 53.33 per cent of cherry growers did not prefer any training for such skill, while as 46.66 per cent of cherry growers were of the opinion that they need training for such skill on priority basis, 37.5 per cent of cherry growers desired need training for such skill. while as, 16.66 per cent of cherry growers had not graded and packed the fruits properly

Regarding post harvest handling of cherry fruits, 91.66 per cent of cherry growers were having this skill, 83.33 of cherry growers preferred training for such skill on priority basis, 50.83 percent of cherry growers need training, while as 49.16 per cent did not need any training for post harvest handling of cherry fruits , while as 16.66 percent had not preferred any training .Further it was reported that only 8.33 percent of cherry growers were not having post harvest handling skill.

Regarding Marketing skill, 66.66 per cent of cherry growers had marketing skill, 58.33 percent of cherry growers preferred to undergo training for such skill on priority basis, 52.5 per cent of cherry growers need training for marketing skills, while 47.5 percent refused to undergo any training for such skill and 41.66 per cent did not prefer to undergo any training for such skill, while as one third (33.33 percent) of cherry growers do not possess such skill.

Table 7. Overall skill of cherry growers

(N=120)

S.No	Category (Score)	Frequency	%age

01	Low(Upto 30)	60	50
02	Medium(30 - 46)	52	43.33
03	High(> 46)	8	6.66
Mean+-S.D		37.8±8.17	

The data from Table 7 highlighted that 50 percent of cherry growers had low skills on cherry cultivation, 43.33 per cent of the cherry growers were having medium skills and minimum percentage (6.66%) of the cherry growers had high skills of cherry cultivation.

Figure 3. Overall skill of cherry growers.

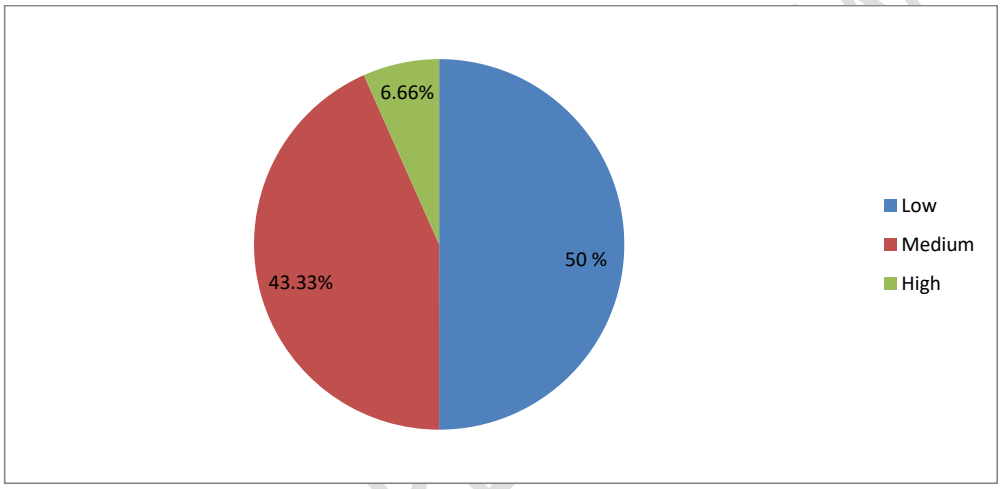

Table 8. Correlation between the socio-personal, economic and psychological Characteristics of the Cherry growers with their skills.

S.No	Characteristics	Co-relation coefficient (r)	P value
1	Age	0.196*	0.032
2	Education	-0.246	0.007
3	Family size	0.021	0.819
4	Land holding	0.066	0.475
5	Annual income	0.159	0.084
6	Experience	0.252**	0.009
7	Source of information	-0.196*	0.031
8	Economic motivation	-0.364	-0.401
9	Risk proneness	0.101	0.274

10	Scientific orientation	-0.201*	0.035

* Significant at 0.05 level of significance

** Significant at 0.01 level of significance Table 8 depicts the co-relation coefficient values indicating the relationship of personal socio - economic attributes of the cherry growers with their skills. Age, farming experience and Source of information of Cherry growers had significant relation with their skills at 0.05 and 0.01 level of significance. The result also depict that the level of education, Land holding, family size, annual income Economic motivation, Risk proneness and Scientific orientation, did not establish significant relation with their Skills.

Comment [P11]: Check paragraph setting elaborate the findings of table supporting previous work.

Conclusion and recommendations

Cherry production including its value chain is an important economic pursuit and source of livelihood to large number of people of Jammu & Kashmir. The state in recent years has paid a lot of attention to the development process of cherry industry. However, there exists wide and marked gap in the productivity of cherry as compared to major cherry producing countries of the world. Cherry growers should give much emphasis on consultation with scientists, Horticulture extension functionaries prior to establishment of new cherry orchards for site selection, layout, soil testing, selection of varieties etc as majority of the cherry growers lack planning skills. Demand driven training programmes, various front line demonstrations and on farm trails should be conducted by visiting in the farmers field instead of lectures oral presentations and farmers should be encouraged to learning by doing. To bridge the gap between the farmers and extension agents, farmer to extension ratio should be lowered so that farmers can be updated by conducting the required training programmes and disseminating the technology for better productivity and profitability. Much emphasis should be paid on training and pruning techniques, integrated insect/pest and disease management, nutrient management etc while planning and designing training programmes for farmers.

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Comment [P12]: Add more references,, follow journals guidelines

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