

Thematic Areas for Training Needs of Cherry Growers- A Study in Baramulla District of Kashmir Valley

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Authors' contributions

This work was carried out in collaboration among all authors. Authors DY, MAD and SHB designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors KRD and KAS helped in developing the interview schedule owing to the technical expertise of the subject. Authors SM, NUIW and MAD managed the analyses of the study. Authors UR and Habibullah managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

The study was conducted in horticulture zone Tangmarg of district Baramulla of Jammu and Kashmir. Horticulture Zone Tangmarg comprises of 65 villages out of which 35 villages were under cherry cultivation, from 35 villages 06 villages were selected purposively on the basis of maximum area under cherry cultivation. From the selected 06 villages 120 cherry growers were selected through proportionate allocation method. It has been observed that the skills of cherry growers regarding expert guidance planning, layout planning, soil testing pest and disease management, nutritional management training and pruning etc. were low and as such majority (46.67%) of the cherry growers have high training needs. Integrated disease management receiving highest score was the most prioritized thematic area for training need followed by Soil testing, training and pruning techniques, integrated pest management etc. The training need for marketing technique, processing and value addition packing and grading was given lowest priority by the cherry growers. It was concluded that need based cost effective training programmes and strategies need to be tailored, so that human resource be put to effective use for achieving sustainable cherry production.

Keywords: Cherry; cherry growers; knowledge level; skills; thematic areas; training needs; training need assessment.

1. INTRODUCTION

Sweet (*Prunus avium* L.) and sour (syn. tart, *P. cerasus* L.) Cherry ripen first amongst the stone fruits followed by apricot, peach and plum. Because sweet cherry is first on the fresh market, it is in high demand in the late spring and early summer. Sweet cherry cultivars with red fruit color dominate the market while cultivars of yellow, white, or blush color are in less demand. Sour cherries have smaller fruit size and are less firm than sweet cherries. The vast majority of the sour cherries are processed; however, sour cherries with higher sugar content are becoming more common on the fresh fruit market in recent decades [1].

Cherries are Chef's favourite as they can be used in a variety of recipes, making the dishes more attractive and delectable. Cherry extracts are often added to beverages and processed foods to impart flavor. Raw sweet cherries are 82% water, 16% carbohydrates, 1% protein, and negligible in fat. As raw fruit, sweet cherries provide little nutrient content per 100 g serving, as only dietary fiber and vitamin C are present in moderate content, 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 [2].

Consumers demand for sweet cherry has increased due to its sweet taste, attractive colour and high amount of antioxidants. However, the

fruit being highly perishable with a limited shelf life of 7-10 days and in some cases the produce fails to reach the consumer at optimal quality. Spring frost, fruit drop, loss of colour, firmness, flavour, and desiccation are the main problems faced by cherry growers. This may be due to low adoption of recommended package of practices by the cherry growers, growing of local/early blooming varieties, imbalanced use of fertilizer dose, non-adoption of recommended spray schedule, improper picking, handling and packaging practices. For achieving the target in any enterprise, the target group needs to be highly trained and skillful. Training is a process of new skills, attitude and knowledge in the context of preparing/improving ones productivity in an enterprise. Effective training requires a clear picture how the trainees or farmers will need to use the skills after training in place of local practices. Training of the farmers is essential to induce motivation, create confidence and inculcate efficiency in an individual [3]. Training of the farmers is also inevitable for imparting new knowledge and updating the skills of farmers. Training of farmers had assumed further importance and urgency in the context of the high yielding varieties and improved practices in agriculture and allied fields. In order to make any training meaningful and effective, it is imperative on the part of the training organizers to identify the training needs of the farmers based on which suitable training modules can be developed so that the appropriate training is given to the right people, in the right form, at the right time so that higher degree of productivity and profitability can be achieved [4]. Therefore, training of the farmers is 'an intensive learning activity, assisted

by competent trainers to understand and practice the skills required in a deficit situation in 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 [5]. 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 [6].

The present study conducted by the researcher attempted to analyze the Knowledge level, skills and training needs of cherry growers in district Baramulla of Jammu and Kashmir. The results of the present investigation may be extremely useful to policy makers, planners and administrators to assess the present level of knowledge and needs of different cherry growers of the valley. The results of the study may be useful to the extension workers, who are involved in the process of planning the training programme and then disseminating the technologies through this programme to cater the farmer needs. The effective training strategies of Cherry Cultivation will improve the skills of growers to increase their income through production. The findings will enable to design a training schedule in order of rank priority of the areas, that the problems of the cherry growers

can be solved through need-based trainings to augment the horticulture development.

2. METHODOLOGY

2.1 Location of the Study

The present study was conducted in Horticulture Zone/Tehsil Tangmarg in District Baramulla of Jammu and Kashmir state. This tehsil is situated on the southern side of district and on the foot hills of world famous tourist resort Gulmarg. Total geographical area of district Baramulla was (4190km²) with a population of 1,015,503 and having 524 villages (census 2011). It is situated at 34.1980° N Longitude and 74.3636° Latitude. It has an average elevation of 1593 meters (5226 feet). Baramulla district is the largest district in the entire valley both with reference to population and area. It spreads from Srinagar district and Ganderbal district in the east to the line of control in the west and from Kupwara district in the north and Bandipora district in the northwest to Poonch district in the south and Budgam district in the southwest. Baramulla district is located on the banks of river Jhelum. The literacy level of the district was 66.9 per cent. And average density of the population was 305 per sq. km [7].



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

2.2 Sampling Techniques

The sample of the present study was drawn through following three stages of sampling method to obtain the required information. These were:

- i) Selection of Horticulture zone
- ii) Selection of villages
- iii) Selection of respondents.

i) Selection of horticulture zone: District Baramulla comprises of 19 horticulture Zones, among them only one Horticulture Zone, i.e Horticulture Zone Tangmarg was selected purposively for the study having maximum area and production under cherry fruit in the district.

ii) Selection of villages: The list of villages under cherry fruit cultivation was obtained from the office of Horticulture Zone Tangmarg. It comprises of 65 villages, out of which 35 villages are under cherry cultivation. Among these villages, only 06 villages were selected purposively on the basis of having maximum area under cherry fruit cultivation namely Hajibal, Mulbangil, Budipora, Warpora, Katipora, Budipora and Watalpora.

iii) Selection of respondents: The list of cherry growers of the selected villages was prepared in consultation with village heads and field extension functionaries of the horticulture department .For the study purpose, the cherry growers were selected through proportionate random sampling method from each selected village. Thus a total of 120 cherry growers were selected for the study.

2.3 Designing of Interview Schedule

An interview schedule based on objectives, variables and available literature on the topic was prepared. The cultivation practices developed by the Agriculture University (SKUAST - K) were incorporated in the schedule so as to know on which practice the farmer needs to have training .The interview schedule was prepared in English language. While preparing the interview schedule, due care was taken to avoid questions with dual meaning and contradicting statements. The language used for the questions was simple for easy understanding of the respondents.

2.4 Pre-Testing of Interview Schedule

Before finalization of the interview schedule, it was pre-tested to detect the mistakes and short

falls and to achieve clarity and practicability of the schedule by selecting ten respondents who were not included in the sample. The prepared interview schedule was examined and necessary modifications were made in light of ambiguities, difficulties and experience in data collection.

2.5 Procedure of Data Collection

The author personally interviewed the respondents included in the sample .The help of village leaders and horticulture extension functionaries was sought for establishing the rapport with the cherry growers. The imperative end objectives of the study were clearly explained to the cherry growers. The respondents were assured, that the information furnished by them would be kept confidential and would be used for the research study only. The interview was conducted in a friendly and informal manner.

2.6 Weighted Score

In this study, the farmer's responses were collected in a 3– point continuum scale as Very Important (VI), Important (I) and Not Important (NI) by assigning scores 3, 2 and 1 respectively. The results were calculated as weighted score for each of the thrust area identified for the training.

Weighted score (WS) =

$$\frac{(\text{No. of VI} \times 3) + (\text{No. of I} \times 2) + (\text{No. of NI} \times 1)}{\text{Total No. of VI} + \text{I} + \text{NI}}$$

Where,

VI = Very Important, I = Important and NI = Not Important [8].

2.7 Compilation of Data

The qualitative data was quantified by using various statistical tools and working out different scores in order to find out the nature of association between dependent and independent variables.

3. RESULTS AND DISCUSSION

It is observed from Table 2, that in respect of fruit production, a majority of the respondents (55.8%) had medium level of knowledge, while as, 27.5 per cent possessed low level of knowledge and only 16.66 per cent had high

level of knowledge about the recommended fruit production practices.

In case of plant protection, a majority (60.83%) of cherry growers possessed medium level of knowledge, while 34.16 per cent possessed low level of knowledge and only 5 per cent had high level of knowledge about the plant protection measures.

Regarding fertilizer management, a majority (55%) of the cherry growers possessed medium level of knowledge. while as, 35 per cent possessed low level of knowledge and only 10 per cent had high level of knowledge about fertilizer management.

In case of insect/pest management, a majority (75%) of the cherry growers possessed medium

level of knowledge, while 15.83 percent possessed low level of knowledge and only 9.16 per cent had high level of knowledge about insect/pest management.

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

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

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

S.No	Name of the village	Total No. of cherry growers	No of Selected respondents
01	Warpora	105	22
02	Budipora	75	16
03	Watalpora	80	17
04	Katipora	135	28
05	Mulbangil	90	19
06	Hajibal	85	18
Total		570	120

By proportionate allocation method

Table 2. Distribution of cherry growers according to knowledge level about recommended cherry cultivation practices (N=120)

S.NO	Area	Max Possible Score	Overall Score	Mean(x) Knowledge Score	Knowledge level			S.D
					Category	Frequency	%age	
01	Fruit Production	40	1731	14.42	Low	33	27.5	2.87
					Medium	67	55.8	
					High	20	16.66	
02	Plant Protection	10	598	4.98	Low	41	34.16	1.15
					Medium	73	60.83	
					High	6	5.00	
03	Fertilizer Management	14	784	6.53	Low	42	35.00	1.60
					Medium	66	55.00	
					High	10	10.00	
04	Insect/Pest Management	10	330	2.75	Low	19	15.83	1.79
					Medium	90	75.00	
					High	11	9.16	
05	Disease Management	10	286	2.38	Low	30	25.00	1.80
					Medium	82	68.33	
					High	8	6.66	
06	Harvesting /Picking	10	873	7.27	Low	40	33.33	1.44
					Medium	74	61.66	
					High	6	5.00	

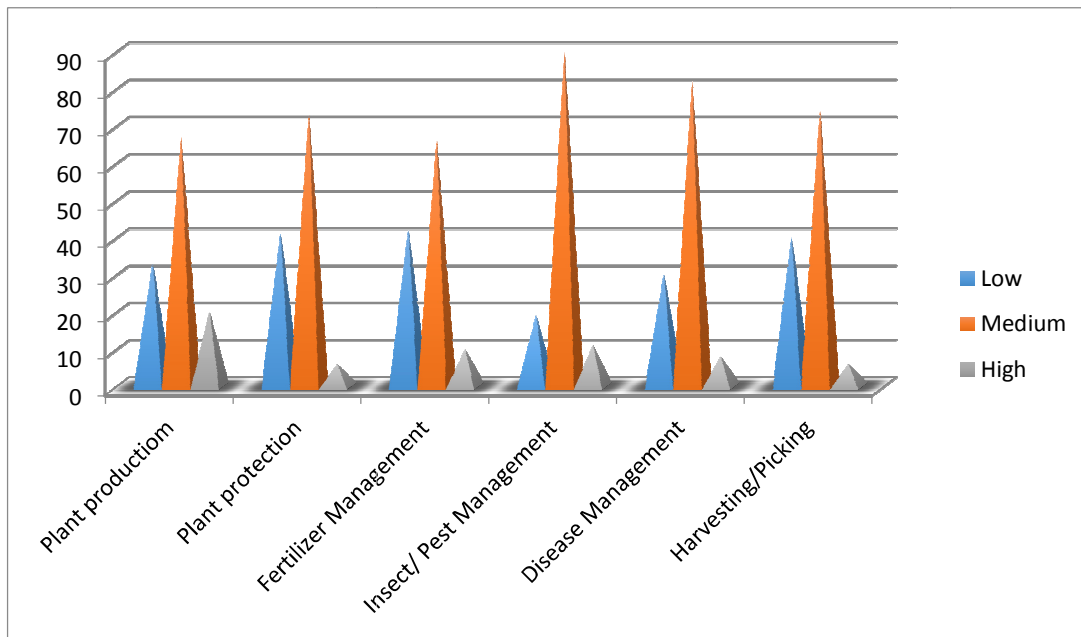


Fig. 2. Distribution of cherry growers according to their knowledge level about recommended cherry cultivation practices

Table 3. Distribution of cherry growers according to their level of training needs (N=120)

S.no	Category (Score)	Frequency	%age
01	Low (Upto 18)	25	20.83
02	Medium (19 - 22)	39	32.50
03	High (> 22)	56	46.67
	Mean ± S.D	20.30 ± 2.17	

Thus it can be concluded, that majority of the cherry growers were having medium level of knowledge in the components of production technology i.e. Fruit production (55.8%), plant protection (60.83%), fertilizer management (55%), insect/pest management (75%), disease management (68.33%) and harvesting/picking (61.66%), except processing and value addition component of cherry cultivation, where majority of cherry growers had low level of knowledge. So, it is explicit that cherry growers were not cultivating cherry in accordance with the recommended practices. The possible reason could be low level of education and some of the practices which are difficult and complex are moderately known to cherry growers. The possible reason for low knowledge in processing and value addition of cherry cultivation may be selling of their produce to money lenders, lack of resources, inadequate market access, lack of coordination with processing units and non-availability of fruit processing units in nearby areas. These

findings are in agreement with the findings of Wani [9].

The data from Table 3 highlights, that 46.67 percent of cherry growers were having high level of training needs on cherry cultivation, followed by 32.50 per cent of the cherry growers having medium level of training needs and only 20.83 per cent of the cherry growers had low level of training needs.

Thus it can be concluded that majority of the cherry growers want to undergo trainings for different cultivation practices of cherry.

Table 4 reveals, that among the thematic areas for training needs, integrated disease management stands at rank I on the basis of weighted score (1.77), followed by soil testing at rank II having weightage score (1.76), training and pruning techniques having rank III with weightage score (1.74), integrated pest management at rank IV having weightage score

(1.31), integrated nutrient management having rank V with weightage score (1.30).The thematic areas in respect of soil fertility management and pollination each stand at rank VI with weightage score (1.26) each. Rodent control at rank VII having weightage score (1.13), orchard sanitation having rank VIII with weightage score (0.96), orchard layout stand at rank IX having weightage score (0.55), picking / harvesting having rank X with weightage score (0.46), site selection for cherry cultivation stands at rank XI

having weightage score (0.4), rejuvenation of old unproductive orchards at rank XII, with weightage score (0.34), selection of variety at rank XIII having weightage score (0.3), selection of saplings having rank XIV with weightage score (0.25), packing / grading stand at rank XV having weightage score (0.17), processing and value addition at rank XVI with weightage score (0.15), marketing techniques at rank XVII having weightage score (0.10).

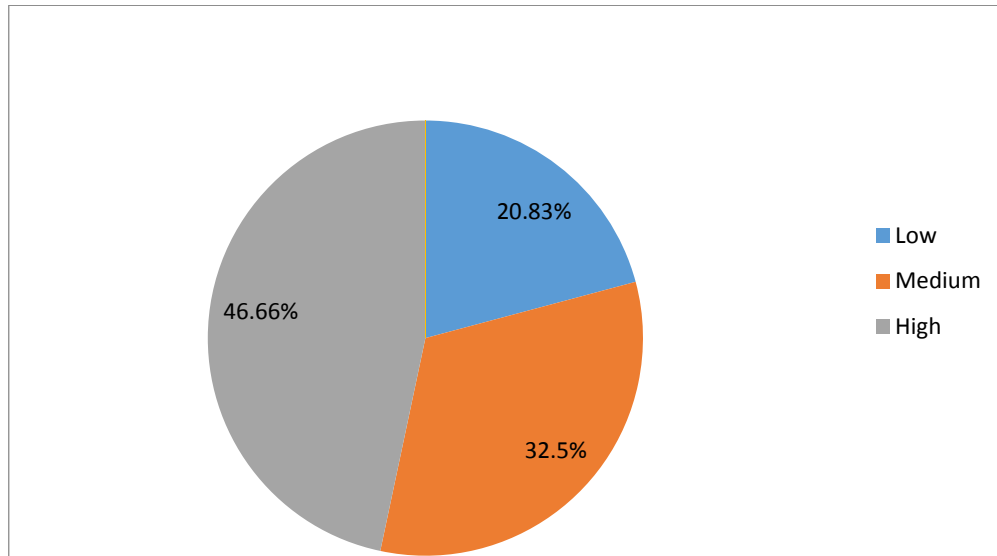


Fig. 3. Distribution of cherry growers according to their level of training needs

Table 4. Distribution of cherry growers according to thematic areas for training needs (N=120)

S.NO	AREA	MN	N	NN	WT .S	Rank
1	Site selection for cherry Cultivation	8	32	80	0.40	XI
2	Orchard layout	18	30	72	0.55	IX
3	Soil testing	98	16	6	1.76	II
4	Selection of variety	8	20	92	0.30	XIII
5	Selection of saplings	6	18	94	0.25	XIV
6	Training and pruning techniques	95	19	6	1.74	III
7	Orchard sanitation	28	60	32	0.96	VIII
8	Rejuvenation of old/unproductive orchards	10	21	89	0.34	XII
9	Integrated nutrient management	48	60	12	1.30	V
10	Integrated pest management	55	48	17	1.31	IV
11	Integrated disease management	93	27	0	1.77	I
12	Soil fertility management	43	66	11	1.26	VI
13	Pollination	47	58	15	1.26	VI
14	Rodent control	39	58	23	1.13	VII
15	Picking/Harvesting	14	28	78	0.46	X
16	Packing/Grading	5	11	104	0.17	XV
17	Processing and value addition	0	18	102	0.15	XVI
18	Marketing techniques	0	13	107	0.10	XVII

MN= Most needed, N= Needed, NN= Not needed, WT. S= weightage score

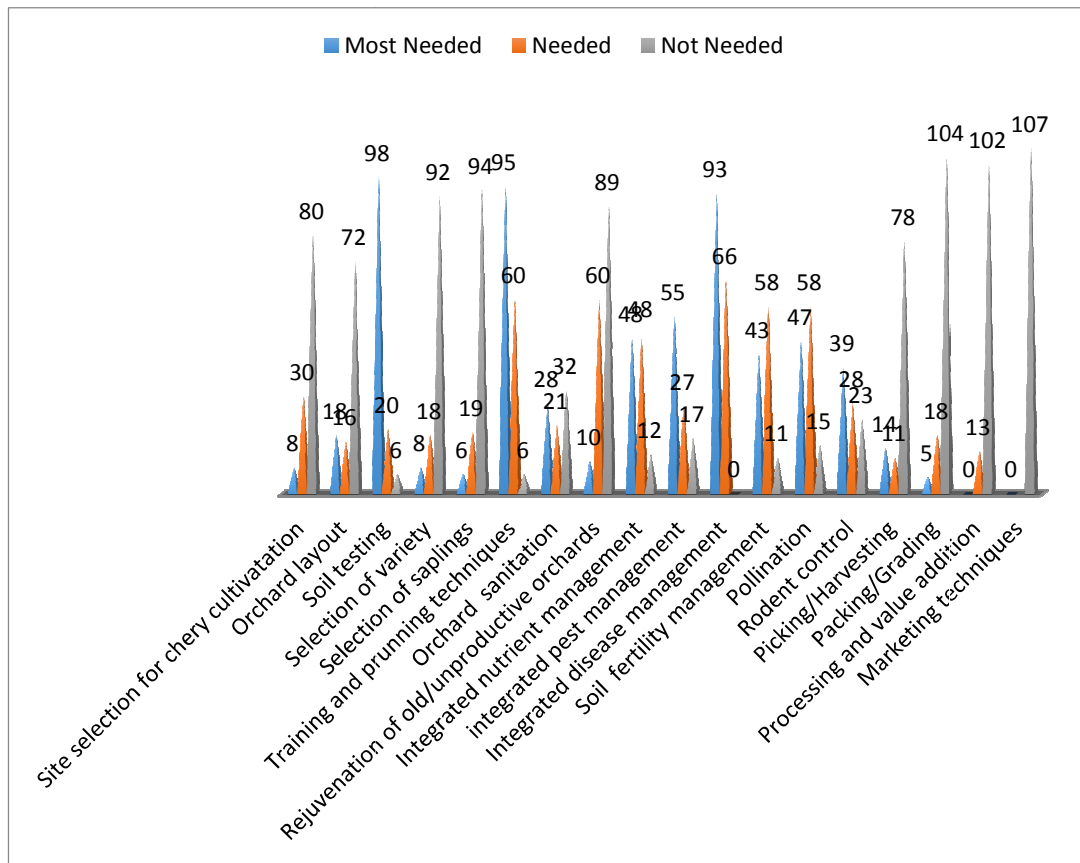


Fig. 4. Distribution of cherry growers according to thematic areas for Training needs

Cherry growers had delineated different thematic areas wherein they need training on priority basis. Thus, it clearly indicates that integrated disease management, soil testing, training and pruning stand on the top among the thematic areas which got maximum weightage score as per the response of the cherry growers. The findings were in conformity with those of [6,8]. Thus, more priority is given to these areas by the cherry growers which require more trainings. Whereas, marketing techniques, processing / value addition and packing / grading stand on the last among thematic areas and it clearly indicates that cherry growers are not willing to undergo in such trainings.

4. CONCLUSION

Special training should be given to cherry growers about the raising and management of quality planting material or they should prefer to use planting material from the registered nurseries. Much emphasis should be paid on training and pruning techniques, integrated pest

and disease management, nutrient management, while planning and designing training programmes for farmers. Need based training programmes and demonstrations should be conducted on the farmers’ field instead of lectures and should be encouraged to learning by doing. Farmer to extension ratio should be lowered so that extension functionaries could reach to maximum farmers and could reduce the gap from technology dissemination to adoption. Trainings should be conducted on group basis rather than on individual basis so that more and more farmers could be included in training programmes.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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