Assessment of Information Needs of Apple Growers in District Baramulla of Jammu and Kashmir (UT), India

Abstract

Nowadays it is a prerequisite to know the information needs of farmers and to provide information according to their needs. Along with land, labour and capital, Information is perceived as a critical factor of production in farming. Information regarding various aspects of crop production and protection can empower farmers to mitigate losses. Apple among various horticultural crops holds great promise for the economy and livelihood of farmers living in the UT of Jammu and Kashmir. The area under apple cultivation has increased but the production and productivity have not increased to a satisfactory level. There is an urgent need to identify the information needs of farmers. The present study was undertaken to find out the information needs of apple growers in the northern district (Baramulla) of J & K (UT) having the maximum area and production of apple fruit in the UT. The study adopted a descriptive research design and the sample size of 300 apple growers was selected through a proportionate random sampling method from purposively selected 15 horticultural zones of district Baramulla, having maximum area and production of apple fruit in the district. Data was collected personally by the researcher through a well-structured interview schedule. The most prioritized areas of information needs expressed by the apple growers were disease management, training/pruning, govt. schemes and subsidies, innovative techniques (HDP) and pest management. The overall information needs behaviour of apple growers was medium (45.00%) with mean information needs of 62.48. Explanatory variables land holding, source of information and scientific orientation have a positive and significant relationship with the information needs of apple growers. A pertinent information dissemination strategy can be developed on the basis of their information needs behaviour. The study will act as an eye-opener for policy makers to formulate relevant policies and design programmes to enhance the production and productivity of apple

Keywords: Apple, behaviour, Growers; Information, needs,

Introduction

The year 2021 was declared as the international year of fruits and vegetables by the United Nations (UN) General assembly aims to raise awareness of the nutritional and health benefits of fruits and vegetables and their contribution to balanced diet and healthy lifestyle (Anonymous 2021). Among fruits Apple (*Malus Domestics*) is commercially the most important temperate fruit and occupies the third (3rd) position in the world in terms of production after Banana and Watermelon (Anonymous, 2023 a).

China and India share the first two ranks in fruit production with 262 and 107.24 million tons respectively. Union Territory of Jammu and Kashmir is known to be the hub of apple production as it enjoys the share of 70.54 per cent contribution in apple produce in India with a production of 1.71 million tons. Apple the backbone of the economy of the union territory proudly represents the fruit industry of Kashmir, representing 98.00 per cent of the total fruit production of the Kashmir valley. Himachal Pradesh, Uttarakhand and Arunachal Pradesh are other major apple producing states of India with production of 643.85 thousand tons, 64.88 thousand tons and 7.34 thousand tons respectively (Anonymous 2023b). The two important states/UTs namely, J&K (UT) and Himachal Pradesh account for 97 per cent of the total

production and about 87 per cent of the total area under apple cultivation in India. In terms of productivity, J&K (UT) has achieved the highest productivity (13 t/ha) followed by Himachal Pradesh (5-6 t/ha) and Uttarakhand (2.16 t/ha). Apple is the principal fruit crop of Jammu and Kashmir and accounts for 51 per cent of total area of 2.72 lakh hectare under all temperate fruits grown in the UT. J&K (UT) enjoys the share of 70.54% contribution in apple produce in India, while as Himachal Pradesh, Uttarakhand, and Arunachal Pradesh share 26.42 per cent, 2.66 per cent, 0.39 per cent respectively (Bhat et al 2020).Kashmir the paradise on earth is known for its diversity in temperate fruits like apple which is famous throughout the world. Apple industry in Kashmir is the largest employment generator employing 3.5 million people by providing 400 man-days of work/year/ha and contributing about 10.00 per cent to its UTs GDP District Baramulla is the largest producer of apple In Jammu and Kashmir (UT). About 3.6 lakh hectares of land is under apple cultivation in Jammu and Kashmir, from past few years the area under apple cultivation has increased but the production and productivity has not increased to a satisfactory level, because a wide gap exists between the available technologies and the information possessed by the farmers, there is an urgent need to identify their agriculture information needs. Information need is defined as data or a set of data required by an individual to perform a task or make an appropriate decision when confronted with a problem at a particular time. Acording to Kemp (1976), "information has been described as the fifth need of mankind ranked after air, water, food and shelter". Ansari and sunetha (2014) reported that "Access to accurate, timely and reliable information plays a crucial role in the adoption of appropriate agriculture technology". Among horticultural crops, apple is prone to various diseases and pests and from past few years the incidence has increased. To resilient such circumstances and to increase production and productivity of apple there is need to provide relevant, updated information to farmers with the current trends and techniques. With this in mind the current study was designed to look into the information needs of apple growers in district Baramulla of Jammu and kashmir.

Materials and methods

The study was conducted purposively in district baramulla of jammu and Kashmir having highest area and production of apple in UT of Jammu and Kashmir. District baramulla has 19 horticultural zones , among them 15 horticultural zones were selected which are characterized by vast area and production of apple and other fruits in the district. A total of 300 apple growers were selected through proportionate random sampling. A well structured interview schedule was developed, pretested in non sampled area of about 20 farmers, to remove the ambiguities, shortfalls and to make clear and practicable to the respondents. The data collected was coded, classified, tabulated in SPSS software and different statistical operations like frequency, percentage, mean, standard deviation and correlation coefficient were used for meaningful findings and drawing conclusions.The information needs were measured using the five continuum likert scale ranging from very important (5 score) to not important (1 score). To measure the information needs of apple growers, Information need index and standardized information need index (SINI) developed by Kabir et al., (2014) was used.

INI= InVIx5+ InIx4+ InMIx3+ InSIx2+ InNIx1 where,

INI= Information need index

InVI= Number of respondents with very Important information needs

InI= Number of respondents with Important information needs

InMI= Number of respondents with Moderately Important information needs

InSI= Number of respondents with Slightly Important information needs

InNI= Number of respondents with Not Important information needs

Standardized information need index (SINI)= $\frac{\text{Computed information need index X 100}}{\text{Possible highest information need index}}$

Based on Standardized information need index, needs were ranked and highest value was arranged in descending order**.**

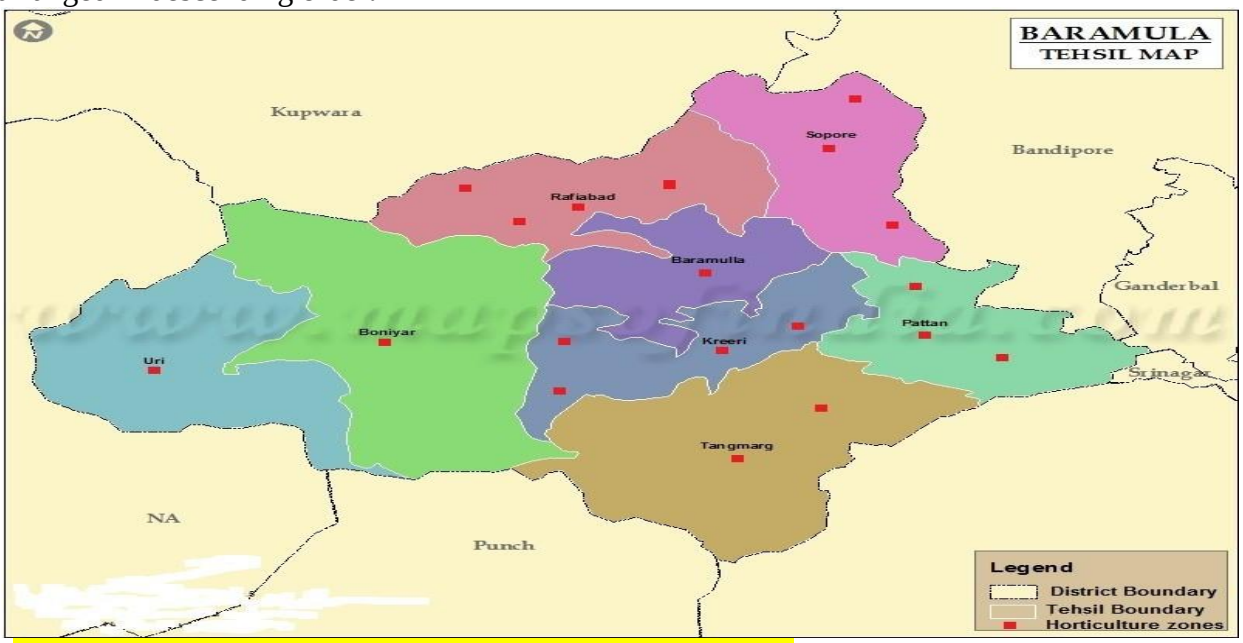

Fig1- Map of district Baramulla with horticultural zones.

The score obtained by respondents from all statements of information needs were added so as to get the overall score. Then the respondents were grouped into three categories on the basis of mean and standard deviation. The minimum and maximum scores were 40 and 80 respectively.

Table 1: Categorization of respondents on the basis of mean and standard deviation

Category	**Score**
Low	Below Mean - S.D
Medium	Between Mean $\pm$ S.D
High	Above Mean + S.D

Results and discussion

The results in Table 2 revealed that the major areas of information needs expressed by apple growers were, disease management ranked Ist with highest SINI value 96.66. Information related to training and pruning ranked IInd in the rank order with the next highest SINI value 95.66, government scheme and subsidies related information ranked IIIrd with SINI value 95.13, information related to high density plantation (HDP) ranked IVth with SINI value 95.06, pest management related information ranked Vth with SINI value 94.73, information related to spray schedule ranked VIth with SINI value 94.13. These information needs were followed by credit facilities with SINI value 92.20, fertilizer management (92.00), soil health (87.06), grading (85.86), formulation/ concentration techniques (82.46), exotic apple varieties (80.06), Marketing (73.26), price and source of inputs (68.26), weather related information (70.53), storage (67.40),

harvesting (57.26) and layout (54.00). On the other hand, packaging (48.26), value addition (47.45) and site selection (31.20) were the least preferred information needs of apple growers. The results are in line with the findings of Shah *et al.* (2017) who revealed in their study on "soil and water testing, integrated disease management, training and pruning, integrated pest management each of them got rank I in seeking information and training.

Further perusal of the data in the table 3 and Fig. 2 reveals that majority (45.00%) of the apple growers were having medium information needs, followed by high (40.33%) and only 14.67 per cent were having low information needs with mean information need of 62.48.

It indicated that apple growers have given more emphasis on disease management as apple is prone to various diseases and pests. Infestation of pests/pathogens is the main issue occurring in apple cultivation on which major part of income is spent by the growers. Also the study reveals that farmers were conscious related to information on training/pruning, formulation/concentration techniques, various government schemes and subsidies as government of UT of Jammu and Kashmir has recently introduced a holistic project for agricultural and horticultural development (HADP) under which various projects were sanctioned to support the handholding of farmers, but farmers were lacking information regarding holistic agricultural development programme (HADP). Furthermore, farmers articulated high information needs related to fertilizer management, soil health, exotic apple varieties and marketing of produce.

Table-2: Information needs of apple growers **N=300**

Information required regarding	SINI	Rank
Govt. Schemes and subsidies	95.13	III
Credit facilities	92.20	VII
Innovative techniques (HDP)	95.26	IV
Site selection	31.20	XXI
Layout	54.00	XVIII
Soil health	87.06	IX
Exotic apple varieties	80.06	XII
Training/Pruning	95.66	II
Price and source of inputs	68.26	XIV
Disease management	96.66	I
Pest management	94.73	V
Fertilizer management	92.00	VIII
Spray schedule	94.13	VI
Formulation/Concentration techniques	82.46	XI
Weather	70.53	XV
Harvesting	57.26	XVII
Grading	85.86	X
Packaging	48.26	XIX
Marketing	73.26	XIII
Storage	67.40	XVI
Value addition	47.45	XX

Table- 3: Overall Information needs of apple growers.

N=300

Category (Score)	Frequency (%age)	Mean	S.D
Low (Up to 59)	44 (14.67)	62.48	2.97
Medium (60-65)	135 (45.00)		
High (>65)	121 (40.33)		
Total	300 (100)		

The results are in conformity with the findings of Chauhan (2011) The results also depict that the apple growers were information hungry related to pest management, training/pruning, pesticide schedule, innovative techniques and formulation concentration techniques because these practices act as foundation for cultivation of apple and major loss to apple growers occurs due to insect/pest and disease infestation on which huge amount is spent throughout the cropping season, any deficit in these practices will affect their production, quality and ultimately loss of economy. Also it was observed that information related to marketing, storage and value addition was prioritized because from past few years apple growers have faced a huge loss due to sluggish marketing. The over all information need behavior of apple growers was medium to high which could be due to low education level or non availability of technical guidance from horticulture extension functionaries, low social participitation and low information seeking behaviour.

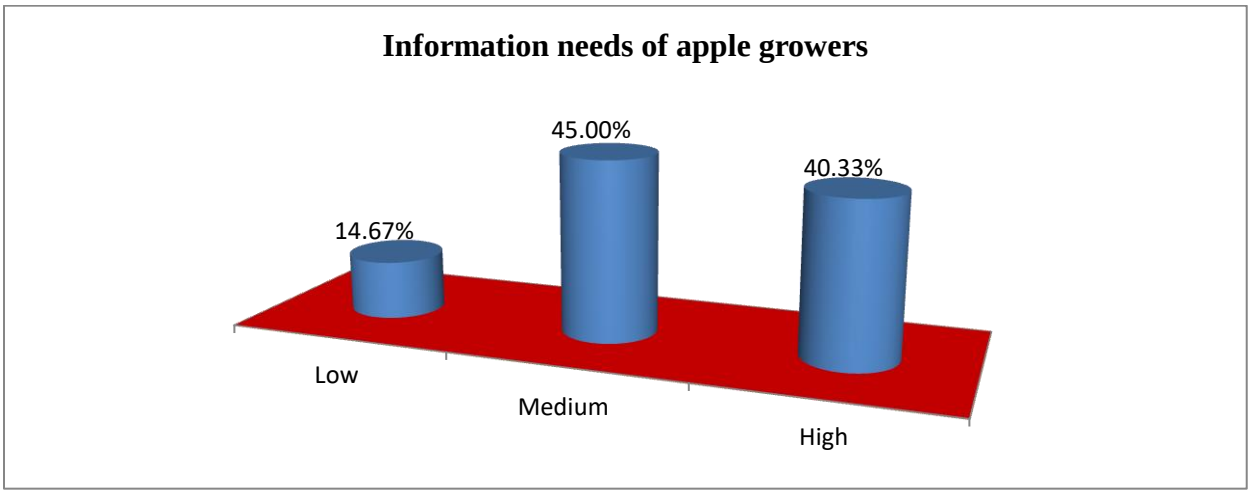

Fig-2: Overall information needs of apple growers

Table-4: Correlation between personal and socio economic characteristics of apple growers with information needs.

N=300

Characteristics	Correlation coefficient
Age	0.244
Education	-0.138*
Family size	0.078

Land holding	0.452*
Annual income	0.020
Farming Experience	-0.323*
Source of information	0.330**
Trainings Received	-0.432*
Scientific orientation	0.244*

*Significant at 0.05 level of significance
**Significant at 0.05 level of significance

Table 4 reveals that information need of apple growers had non significant correlation with Age,, family size and annual income it shows that there were almost similar needs of the apple growers with different age groups, family members and income categories . It was also found that education, farming experience and trainings received has negative and significant relationship with information needs. This could be due that experienced and educated farmers have more knowledge and can access to different sources of information regarding various apple cultivation practices, same results were depicted by (Barokoti and Ansari 2019). Further it was found that land holding, source of information and scientific orientation has positive and significant relation with information needs. The farmers who have more area under apple want to minimize the risk factor by having more information regarding new trends and techniques.

Conclusion

Apple the back bone of economy in Kashmir is prone to various diseases and pests and is adversely affected by the climatic change which has increased the incidence of various diseases and pests, as farmers lack information related to various aspects of apple production, there is an urgent need to make the apple growers aware of various aspects of apple production and protection. The present study has highlighted the apple production, protection and post harvesting needs of apple growers and thus, need to formulate specific strategies and programmes to improve.

The results of the study clearly highlighted that apple growers had expressed plant protection measures, new trends and techniques, Government schemes and subsidies and post harvesting techniques including marketing, storage and value addition as the important areas of information needs. Results of the research study suggested that information needs of apple growers were influenced by different independent variables. Regarding relationship of explanatory variables with information needs it was found that land holding, source of information and scientific orientation has positive and significant relationship with information needs of apple growers. Thus it can be concluded that extension functionaries of horticultural department can make a significant contribution by identifying the information needs of apple growers and built a positive enabling framework to adopt new scientific techniques by plugging the technical or information gaps through conduct of awareness /training programmes at periodic intervals so as to keep them upto date and make them self reliant to tackle any issue related to apple cultivation.

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Dawood Yousuf conceived and designed the study, developed the questionnaire, analysed the data and wrote the manuscript.

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