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Evaluation of Extension Contact of Apple Growers for Recommended Apple Production Technology

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ABSTRACT

Innovative techniques and technologies are being developed at different research stations for the enhancement of apple production. But due to poor extension contact with credible agencies, the same technology has not been fully utilised by the growers at their farms. The study was conducted in three districts of Kashmir division selected purposively with multistage sampling; having maximum area under apple cultivation. The study used focus group discussions, key informant interviews, and a household survey. The majority of the apple growers from district Shopian (55.44%) and district Baramulla (48.67%) were having medium level of extension contact with different extension agencies in contrast to district Budgam, where majority of the apple growers were having low level of extension contact. However, majority of the apple growers from district Shopian (61.39%) contacted private agencies for consultation, while high level of contact (48.81% of apple growers) with private agencies was found among the apple growers of district Budgam.

INTRODUCTION

Horticulture has emerged as a fast-growing sector in Jammu & Kashmir and offers wide range of opportunities to farmers. It has proved its credibility in improving income of farmers through increased productivity, employment generation, strengthening exports, thereby enhancing food security (Ahmad et al., 2021). It plays a pivotal role in the economy of the union territory of Jammu and Kashmir. Owing to its favourable agro-climatic conditions, temperate horticulture is fast expanding in the territory and is characterised by increasing dominance of apple cultivation (Bhat et al., 2021). Apple farming is an important activity and profession of farmer communities in the Himalayan states of India (Basannagari and Kala, 2013). It is commercially the most important temperate fruit and occupies 4th position in the world in terms of production after banana, orange and grapes (Shah et al., 2017). More than half of the population is engaged in the cultivation of apple directly or indirectly in the territory (Bhat and Choure, 2014). India annually exports apple worth of Rs. 400 million (Nearly US $10 million), out of which Rs. 200 million comes from the apples of Jammu and Kashmir, that provides job opportunity to 1.2 million people directly or indirectly. The area under apple cultivation in Jammu and Kashmir has estimated to be the second largest in the world and second largest producer in Asia, thereby making it the largest contributor to the state Gross Domestic Product (GDP) (Shah et al., 2020). J&K has the highest average yield and accounts 67 percent of total apple production and 50 percent of its export in the country, hence a substantial foreign exchange earner and important for economic growth (Parrey and Hakeem, 2015). The low productivity of apple is probably due to lack of information about different aspects of apple cultivation. Achieving food and nutritional security in the state of Jammu and Kashmir is possible only by making use of new technologies in the farmer's field. Increase in production and quality food is hardly possible unless need based effective techniques in production system are adopted by the farmers (Shah et al., 2017). In the present scenario farmers

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require diverse range of information to support their farm enterprises and require access to timely, reliable and relevant information that can support the complexity within which their farm enterprises operate (Gupta and Shinde, 2013).

There are different sources through which information about recommended cultivation practices could be delivered to farmers such as classroom sessions, hands-on-training, field demonstrations, mass media channels or through the extension officers (Birner et al., 2009). However it was reported that access to information on agriculture vis-a-vis apple cultivation in India is low and nationally representative survey (NSSO, 2013) found that only 41 per cent of farmers had access to any source of information for agriculture. The highest accessed sources of information by the growers are progressive farmers, followed by radio, television, newspapers, and the internet and only six percent of farmers had access to state appointed extension agents (Krishnaa and Naik, 2020). The reason for such less access of farmers with the state appointed extension officers is due to low extension agent to farmer ratio. It was reported that one extension officer served 1162 operational holdings in India, however the recommended ratio is 1:750 (Nandi and Nedumaran, 2019). To increase the production as well as productivity of the fruit in apple producing regions of the country and to enhance the food security of the farmers; apple growers need to utilize all the available resources to get updated about different technologies and innovations that will help to boost productivity of fruit. Maintaining trust among the farming community requires induction of professionally qualified personnel and their regular trainings (Slathia et al., 2012). For effective research and extension activities, public-private partnerships can be one of the best modes of strengthening linkages among various stakeholders (Chander and Rathod, 2020). keeping in view the importance and need an evaluation of extension contact in recommended apple production technology was taken up.

METHODOLOGY

The present study was conducted in the union territory of Jammu and Kashmir-the northern most region of India. Three districts from Kashmir valley namely Shopian, Budgam and Baramulla were selected purposively. A multistage sampling procedure was adopted for the selection of districts, horticultural zones, villages and sample apple growers. From the selected districts, three horticultural zones from each district having maximum area under apple cultivation were selected purposively. From each horticultural zone, one village was selected having maximum area under apple cultivation. A list of apple growers (orchardists) of selected villages was obtained from concerned Horticultural Development Offices and a sample of different apple growers (orchardists) having marginal, small, medium and large land holdings, were selected proportionately from selected villages. Thus, a total of 300 apple growers (orchardists) were selected purposively from nine (9) selected villages by using the following formula:

$$n_i = \frac{N_i}{N} n$$

Where, n_i = Number of sampled apple growers in each village, n = Total number of apple growers selected for the present study (300), N = Total number of apple growers in sampled villages, N_1 = Total number of apple growers in i^{th} village.

The structured interview schedule was prepared which included relevant questions for seeking information about different extension agencies. The interview schedule was pretested in a non-sampled area for its practicability and relevancy. The data was collected by administering the pretested interview schedule to the apple growers. The apple growers were personally interviewed by the investigator and the qualitative data was converted into quantitative data by giving scores. The scores obtained by each apple grower in respect of a particular characteristic under the study were worked out. The apple growers were thus, classified logically into different categories on the basis of scores obtained by them.

RESULTS AND DISCUSSION

The data presented in the Table 1 reveals that in district Shopian, a majority (55.44%) of the apple growers had medium level of extension contact, followed by 34.65 per cent of the apple growers having high level of extension contact and only 09.90 percent of the apple growers had low level of extension contact. In district Budgam, a majority (44.18%) of the apple growers had low level of extension contact. In case of district Baramulla, 48.67 per cent of the apple growers had medium level of extension contact. The results clearly indicate that in district Shopian and district Baramulla majority of the apple growers had medium level of extension contact. While, in district Budgam, majority of the apple growers had low level of extension contact which clearly reflected big extension gap in district Budgam. However, in case of overall extension contact of apple growers from all the three districts, it was revealed, that (48.00%) of the apple growers had medium level of extension contact. So, it was clear from the data that majority of the apple growers had medium level of extension contact. The medium level of extension contact of apple growers in district Shopian and district Baramulla might be due to the fact, that apple growers in these districts were more innovative, have good

Table 1. Distribution of apple growers according to their extension contact

Extension Contact	District			Overall (N=300)
	Shopian (n_1=101)	Budgam (n_2=86)	Baramulla (n_3=113)	
Low	10 (09.90)	38 (44.18)	31 (27.43)	79 (26.33)
Medium	56 (55.44)	33 (38.37)	55 (48.67)	144 (48.00)
High	35 (34.65)	15 (17.44)	27 (23.89)	77 (25.67)
Mean ± S.D	6.87 ± 3.34	4.47±2.91	5.50±2.97	5.61±3.07
Observed range	0-32	0-11	0-13	0-32

Figures within parenthesis indicate respective percentage

Table 2. Distribution of apple growers according to their extension contact

Extension Contact		District			Overall (N=300)
		Shopian (n_1=101)	Budgam (n_2=86)	Baramulla (n_3=113)	
Line Department (DoH)	Low	04 (03.96)	25 (29.07)	15 (13.27)	44 (14.67)
	Medium	47 (46.53)	55 (63.95)	54 (47.49)	156 (52.00)
	High	50 (49.51)	06 (06.98)	44 (38.94)	100 (33.33)
	Mean ± S.D	2.03 ± 1.35	2.4±1.66	2.07±1.2	2.16±1.40
	Observed range	0-3	0-5	0-4	0-5
Scientists (SKUAST-K, KVK'S)	Low	05 (04. 95)	21 (24.42)	20 (17.70)	46 (15.33)
	Medium	47 (46.54)	60 (69.77)	40 (35.40)	147 (49.00)
	High	49 (48.51)	05 (05.81)	53 (46.90)	107 (35.67)
	Mean ± S.D	2.84 ± 1.89	3.36±2.17	2.30±1.57	2.83±1.88
	Observed range	0-6	0-8	0-6	0-8
Private Agencies	Low	62 (61.39)	12 (13.95)	51 (45.13)	125 (41.67)
	Medium	32 (31.68)	32 (37.21)	47 (41.60)	111 (37.00)
	High	07 (06.93)	42 (48.81)	15 (13.27)	64 (21.33)
	Mean ± S.D	2.00 ± 1.08	3.48±2.77	2.22±1.22	2.57±1.69
	Observed range	0-5	0-9	0-4	0-9

Figures within parenthesis indicate respective percentage

educational status and economic condition. Low level of extension contact in district Budgam indicated big extension gap. The possible reasons could be, conducting of such activities by the concerned departments either less frequently or with less popularity. The lack of interest on the part of the apple growers could also be the reason for the present findings.

Further perusal of the data from the Table 2 it was observed, that in district Shopian, 49.51 per cent of apple growers had high level of contact with the officers/officials of department of horticulture, In district Budgam, a majority (63.95%) of apple growers had medium level of contact with the officers/officials of horticulture department. While as, in district Baramulla, 47.49 per cent of apple growers had medium level of contact with the officers/ officials of horticulture department. It indicates that among all the three districts, the apple growers of district Shopian were having high contact with the horticulture department, followed by district Baramulla and district Budgam. However, in case of overall extension contact of apple growers from all the three districts with the officers/officials of horticulture department, it was observed, that 52.00 per cent of the apple growers had medium level of extension contact with the officers/officials of horticulture department. The possible reason for high level of extension contact with the officials of horticulture department in district Shopian could be the reason of high innovative proneness, high economic motivation, high scientific orientation and high risk orientation of apple growers and vice versa for district Baramulla and district Budgam. In case of extension contact of apple growers with the scientists of KVK's/ SKUAST Kashmir, in district Shopian, 48.51 per cent of apple growers had high level of contact with the Scientists. In district Budgam, 69.77 per cent of apple growers had medium level of contact with the Scientists, while as, in district Baramulla, 46.90 per cent of apple growers had high level of contact with the Scientists. So, it was evident from the data, that majority of the apple growers from district Shopian had high level of contact with the scientists of KVK's/SKUAST Kashmir, however, in case of overall extension contact 49.00 per cent had medium level of extension contact with the scientists of KVK's/SKUAST Kashmir. The possible reason for high level of contact with the scientists of KVK'S and SKUAST Kashmir, in district Shopian and district Baramulla could be due to the fact that they provide recommended technology and solution to the problems, when consulted, they also encourage for adoption of new technologies apart from their availability.

From Table 2 it is also reported, that in case of district Shopian, a majority (61.39 %) of apple growers had low level of contact with the personnel of private agencies. In district Budgam, 48.84 per cent of apple growers had high level of contact with the personnel of private agencies, While as, in case of district Baramulla, 45.13 per cent of apple growers had low level of contact with the personnel of private agencies. However, in case of overall extension contact of apple growers from all the three districts with the personnel of private agencies, it was observed, that 41.67% percent of the apple growers had low level of extension contact with the personnel of private agencies. The possible reason for low level of contact with the private agencies in district Shopian and district Baramulla could be due to the fact that, they mostly get information from the officials of horticulture department and scientists of KVK's and SKUAST Kashmir and do not probably rely on the unauthorised private agencies. These findings are in line with Kulhade (2007); Patel and Choudhary (2013).

CONCLUSION

It can be concluded that majority of the apple growers were having medium level of extension contact with different extension functionaries. The government sponsored extension agencies need to involve young and energetic brainpower and should be nurtured into the field by involving different schemes and projects for apple growers. More efforts are necessary by these agencies to update the knowledge of apple growers about recommended apple production technology and to motivate the growers for their proper use to obtain higher yields. Extension agencies need to adopt pragmatic approach for demonstration of potentially improved technologies at farmer's field. Different methods need to be employed while disseminating the farm advisory services to the apple growers.

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