International Journal of Agricultural Sciences
Volume 12 | Issue 2 | June, 2016 | 344-349 ■ e ISSN-0976-5670
DOI:10.15740/HAS/IJAS/12.2/344-349
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RESEARCH PAPER

Marketing efficiency of apple - A study in Kullu district of Himachal Pradesh

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Abstract : The present study analysed the efficiency of apple marketing in Kullu district of Himachal Pradesh. Kullu district was purposively selected for the study as apple is predominantly grown in this district. The sample drawn for the study comprised of 40 apple growers of Kullu and Nagar blocks; ten apple contractors, five village traders, five wholesalers and ten retailers operating in Bhuntar Mandi of Kullu block. The modified marketing efficiency analysis was used to analyse the efficiency of marketing channels of apple while the Garrett's ranking technique was used to rank the marketing constraints faced by apple growers. Among the three marketing channels prevailing in the study area, channel III (Producer – Retailer – Consumer) was the most efficient channel as it had the highest modified marketing efficiency index of 6.97. Majority (50 %) of the growers marketed apple through channel III which accounted for about 56 per cent of the total quantity sold by them. The price spread was the lowest (Rs. 122.35) in channel III; and accordingly, the producer's share in final consumer rupee was the highest (87.45 %). The total marketing cost incurred per box (20 kg of apple) by pre-harvest contractor, village trader, wholesaler and retailer was Rs. 88, Rs. 80, Rs. 43, and Rs. 72, respectively. Among the various marketing costs, packing was the major cost followed by transportation for pre-harvest contractor, village trader and retailer; while for the wholesaler, transportation was the major cost followed by storage. The major marketing constraint faced by apple growers was fluctuations in prices.

Key Words : Apple, Marketing efficiency, Marketing channel, Marketing cost, Marketing margin

View Point Article : Minhas, Sonia and Girish, M.R. (2016). Marketing efficiency of apple - A study in Kullu district of Himachal Pradesh. *Internat. J. agric. Sci.*, **12** (2) : 344-349, **DOI:10.15740/HAS/IJAS/12.2/344-349.**

Article History : Received : 18.03.2016**; Revised :** 08.04.2016**; Accepted :** 23.05.2016

INTRODUCTION

Apple (*Malus pumila*) production is commercial in nature as almost the entire harvest is sold. Therefore, the prospects of increased production depend upon the prospects of markets. As the productivity increased, it gave rise to several marketing problems; *viz*., shortage of trained graders, unavailability of good packaging material, lack of adequate storage and processing facilities, high cost of marketing, manipulation by middlemen, problems of untimely and inefficient mode of transportation, etc. (Azad *et al*., 1988). The intermediaries present in the marketing channels of apple, besides charging fees for performing their services, take considerable advantage by way of malpractices and manipulation of market prices so as to create a wide gap between the price paid by the ultimate consumer and the price received by the producer.

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Marketing of apple needs well organized efficient marketing system which envisages primarily raising profitability of growers and increasing consumer satisfaction at reasonable price. It can be improved by increasing operational and pricing efficiency. The organisations, *viz*., Himachal Pradesh Horticultural Produce Marketing and Processing Corporation Limited (HPMC), Himachal Pradesh State Co-operative Marketing and Consumers Federation Limited (HIMFED), National Agricultural Co-operative Marketing Federation of India Limited (NAFED) and Fruit Growers Association have been working to minimize post-harvest losses and to carry out efficient marketing. Several measures have been undertaken by the Government from time to time to revitalize the apple marketing system and it has undergone several changes during the past two and half decades. These interventions in the form of technological up-gradations, improved marketing organisations and market promotion have led to expansion of apple market in the country.

A major portion of apple produced is marketed as a fresh fruit. It is also preserved in the form of apple jam, squash, canned product, syrup, candy and wine in order to fetch high market price, enable consumption during off-season and also minimize loss during the main fruit season. The processing of apple in the form of canned, bottled, frozen and several other products as jam, jelly, squash and alcoholic beverages are in good demand for export.

The present study is an attempt to analyse the efficiency of apple marketing in Kullu district of Himachal Pradesh.

MATERIAL AND METHODS

Kullu district was purposively selected for the study as apple is predominantly grown in this district. Two blocks, namely, Kullu and Nagar were purposively selected as the apple crop is dominant in these blocks. Two villages, namely, Bardha and Tharman of Kullu block; and two more villages, namely, Dharmat and Jhakadi of Nagar block were purposively selected for the study. The lists of apple growers of Bardha and Tharman villages of Kullu block and Dharmat and Jhakadi villages of Nagar block were obtained from the Department of Horticulture, Kullu. From each village, 10 apple growers were randomly selected resulting in a total sample size of 40 apple growers.

In addition to the sample of 40 apple growers, a sample of ten apple contractors, five village traders, five wholesalers and ten retailers operating in Bhuntar Mandi of Kullu block were interviewed for tracking the movement of the produce and identifying the marketing channels for the commodity.

The primary data for the study was obtained from the sample farmers through personal interview method with the help of a pre-tested schedule. The help of Assistant Horticulture Officers of the Department of Horticulture, Kullu; HAREC (Hill Agricultural Research and Extension Centre) Bajaura; and local traders were availed in contacting the farmers as this instilled confidence in the minds of the farmers to provide reliable data. The data collected pertained to the agricultural year 2013-14.

Modified marketing efficiency analysis :

Marketing channel refers to the alternate routes of product flow from the producer to final consumer. Apple is marketed in the form of fresh fruits. The marketing channels prevailing in the study area were analysed.

Marketing cost is the cost incurred by the producer-seller / market intermediary in marketing of produce. Apple was packed in boxes and marketed; and accordingly, the cost and margins per box have been estimated.

The price spread was worked out by computing the difference between the prices received by the producers (P_F) and the prices paid by the consumers (P_C).

The producer's share in consumer's rupee is the price received by the farmer expressed as a percentage of the retail price (*i.e.*, the price paid by the consumer). If P_C is the retail price, the producer's share in the consumer's rupee (P_S) may be expressed as follows :

$$\mathbf{P_S = (P_F / P_C) \times 100}$$

Marketing efficiency is essentially the degree of market performance. It is the competence with which a market structure performs its designated function.The Modified measure of Marketing Efficiency (MME) is as follows :

$$\mathbf{MME = P_F / (MC + MM)}$$

where,

P_F= Prices received by the farmer

MC = Marketing costs

MM = Marketing margins

Garrett's ranking technique :

Garrett's ranking technique was used to rank the constraints in apple marketing based on their importance. The order of the merit given by the respondents was converted into per cent position using the formula.

$$\text{Per cent position} = 100 \times (R_{ij} - 0.50) / N_j$$

where,

R_{ij} = Rank given for i^{th} item by j^{th} individual

N_j = Number of items ranked by j^{th} individual

The per cent position of each rank was converted to scores by referring to the table given by Garrett and Woodworth (1969). Then, for each factor, the scores of individual respondents were summed up and divided by the total number of respondents for whom scores were gathered. The mean score for all the factors were ranked, following the decision criteria that higher the value, the more important is the order of preference by respondents.

RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented under following heads :

Marketing channels of apple :

Table 1 presents the marketing channels of apple in the study area. The three channels prevalent were as follows :

Channel I :

Producer → Pre-harvest contractor → Wholesaler → Retailer → Consumer

Channel II :

Producer → Village trader → Wholesaler → Retailer → Consumer

Channel III :

Producer → Retailer → Consumer

Majority (50 %) of the growers marketed apple through channel III which accounted for about 56 per cent of the total quantity sold by the apple growers. This channel was preferred as the growers realised relatively higher producer's share in consumer rupee. However,

Table 1 : Marketing channels of apple in Kullu district

Sr. No.	Marketing channel	No. of growers	Average quantity sold (no. of boxes)
1.	Channel I	10 (25.00)	3512 (13.41)
2.	Channel II	10 (25.00)	8129 (31.03)
3.	Channel III	20 (50.00)	14545 (55.54)
	Total	40 (100.00)	10168 (100)

Note: Figures in parentheses indicate percentages to the column total
Channel I: Producer → Pre-harvest contractor → Wholesaler → Retailer → Consumer
Channel II: Producer → Village trader → Wholesaler → Retailer → Consumer
Channel III: Producer → Retailer → Consumer

Table 2 : Activity-wise cost incurred in apple marketing by different market intermediaries **(per box)**

Sr. No.	Particulars	Pre-harvest contractor		Village trader		Wholesaler		Retailer	
		Total cost (Rs.)	% of total cost	Total cost (Rs.)	% of total cost	Total cost (Rs.)	% of total cost	Total cost (Rs.)	% of total cost
1.	Watch and ward	6.39	7.23	0.00	0.00	0.00	0.00	0.00	0.00
2.	Harvesting	4.00	4.52	0.00	0.00	0.00	0.00	0.00	0.00
3.	Grading	5.50	6.22	4.55	5.70	0.00	0.00	4.50	6.27
4.	Packing								
	Material cost	31.90	36.12	32.50	40.72	0.00	0.00	31.40	43.78
	Labour charge	10.00	11.32	13.22	16.56	0.00	0.00	11.56	16.12
5.	Loading	3.50	3.96	4.55	5.70	5.95	13.87	3.55	4.95
6.	Unloading	3.25	3.67	5.25	6.57	5.50	12.82	3.50	4.88
7.	Transportation cost	9.87	11.17	10.65	13.34	15.50	36.13	11.45	15.96
8.	Storage charge	6.47	7.32	0.00	0.00	6.89	16.06	0.00	0.00
9.	Market fee	2.50	2.83	2.50	3.13	2.50	5.82	2.50	3.48
10.	Spoilage	4.94	5.59	6.58	8.24	6.55	15.27	3.25	4.53
	Total cost	88.32	100.00	79.80	100.00	42.89	100.00	71.71	100.00

Note: 1 box = 20 kg

25 per cent of the apple growers marketed their produce through channel II, accounting for about 31 per cent of the total quantity sold; and another 25 per cent of them marketed through channel I which accounted for the remaining 13 per cent of the total quantity sold. The reasons for preferring pre-harvest contractors were to save time, money as well as labour required for harvest and post-harvest operations.

Bhat and Aara (2012) in their study on marketing efficiency of apple in Kashmir for the year 2010 also reported the presence of three marketing channels. They reported that the net returns realised by the grower was the highest and the price spread the lowest in channel III (Grower - Consumer).

Cost incurred in apple marketing by different market intermediaries :

Table 2 presents the cost incurred activity-wise in apple marketing by different market intermediaries. The total marketing cost incurred per box (20 kgs of apple) by pre-harvest contractor, village trader, wholesaler and retailer was Rs. 88, Rs. 80, Rs. 43, and Rs. 72, respectively. Chavan *et al*. (2009) in their study on marketing costs of apple in Parbhani market of Maharashtra state for the year 2005 reported that the cost per quintal of marketing apple was Rs. 291.10.

Among the various marketing costs, packing was the major cost followed by transportation for pre-harvest contractor, village trader and retailer while for the wholesaler, transportation was the major cost followed by storage. The packing activity involved use of both material and labour which contributed to the cost. Generally, the material used for packing involved wooden boxes, corrugated fibre board boxes, etc. The second major cost for these intermediaries was transportation cost as they had to move the produce to distant markets. Storage was another major cost for pre-harvest contractor and wholesaler as they were involved in storing

Table 3 : Marketing channel-wise price spread in apple marketing **(Rs. per box)**

Sr. No.	Particulars	Channel I	Channel II	Channel III
1.	**Producer**			
	Net price received	780.50	781.00	853.30
2.	**Village trader**			
	Purchase price	-	781.00	-
	Marketing cost	-	79.80	-
	Sale price	-	888.67	-
	Margin	-	27.87	-
3.	**Pre-harvest contractor**			
	Purchase price	780.50	-	-
	Marketing cost	88.32	-	-
	Sale price	898.50	-	-
	Margin	29.68	-	-
4.	**Wholesaler**			
	Purchase price	815.43	786.65	-
	Marketing cost	42.89	42.89	-
	Sale price	885.90	857.50	-
	Margin	27.58	27.96	-
5.	**Retailer**			
	Purchase price	875.45	875.50	853.30
	Marketing cost	71.71	71.71	71.71
	Sale price	985.50	984.50	975.65
	Margin	38.34	37.29	50.64
	Price spread	205.00	203.50	122.35
	Net marketing margin	95.6	93.12	50.64
	Producer's share in consumer's rupee (%)	79.19	79.32	87.45
	Modified marketing efficiency	2.61	2.71	6.97

Note: 1 box = 20 kg

the produce in cold storages. For the wholesaler, transportation was the major cost followed by storage. As mentioned earlier, the produce had to be shipped to distant markets and also it had to be stored during its transit.

Marketing channel-wise price spread and marketing margins in apple marketing :

Table 3 presents the marketing channel-wise price spread in apple marketing by various market intermediaries. The price spread was the highest (Rs. 205) in channel I followed by channel II (Rs. 203.50) and channel III (Rs. 122.35). This was due to the fact that the channels I and II consisted of three market intermediaries when compared to that of one intermediary in channel III. Accordingly, the producer's share in final consumer rupee was the highest (87.45 %) in channel III followed by 79.32 per cent and 79.19 per cent in channel II and channel I, respectively.

With regard to the marketing margins realised by various intermediaries involved in the marketing channel, the margin realised by the retailer was the highest (Rs. 38.34) per box (20 kg of apple), followed by pre-harvest contractor and wholesaler with margins of Rs. 29.68 and Rs. 27.58, respectively. This is obvious, as generally, the margins of retailers are relatively higher when compared to those of other intermediaries. Chavan *et al*. (2009) in their study on margins for intermediaries in apple marketing in Parbhani market of Maharashtra state for the year 2005 reported that the per quintal marketing margin of commission agent was Rs. 106.67 while that of retailer was Rs. 383.58.

The modified marketing efficiency was the highest (6.97) for channel III followed by channel II (2.71) and channel I (2.61).

Marketing constraints of apple growers :

Table 4 presents the marketing constraints faced by apple growers. Based on the Garrett's score, among the marketing constraints, the fluctuation in market prices was the major marketing constraint (Rank I).This is due to the fact that apple prices are highly fluctuating in nature. The next important marketing constraint was lack of cold storage infrastructure as there were no public cold storages in the study area. However, there were private cold storages owned by traders and the charges for the same were higher. The other important constraints were lack of Government support and lack of labelling / trade mark.

Bhat (2008) in his study on problems of apple marketing in Kashmir for the year 2006 reported that that 87 per cent of the growers did not follow the market oriented pre-harvest operations and technologies to improve the quality of produce. He reported that 65 per cent of the farmers informed that the commission agents had made the growers highly indebted by providing time-to-time and need-based financial support to growers, subject to the condition that produce must be marketed by the commission agent. Malik (2013) in his study on problems with regard to apple marketing in Kashmir valley for the year 2011 reported that price risk was faced both by growers and contractors, as market price fluctuates for apple crop.

Conclusion :

Among the three marketing channels prevailing in the study area, channel III (Producer – Retailer – Consumer) was the most efficient channel as it had the highest modified marketing efficiency index of 6.97. Majority (50 %) of the growers marketed apple through channel III which accounted for about 56 per cent of the total quantity sold by the apple growers. The price spread was the lowest (Rs. 122.35) in channel III; and accordingly, the producer's share in final consumer rupee was the highest (87.45 %). The total marketing cost incurred per box (20 kg of apple) by pre-harvest contractor, village trader, wholesaler and retailer was Rs. 88, Rs. 80, Rs. 43, and Rs. 72, respectively. Among the various marketing costs, packing was the major cost followed by transportation for pre-harvest contractor, village trader and retailer; while for the wholesaler, transportation was the major cost followed by storage. The major marketing constraint faced by apple growers was fluctuations in prices.

Table 4 : Marketing constraints faced by apple growers

Sr. No.	Marketing constraints	Mean score (n = 40)	Rank
1.	Fluctuation in market prices	75.63	I
2.	Lack of cold storage infrastructure	70.85	II
3.	Lack of Government support	45.75	III
4.	Lack of labelling / trade mark	35.13	IV

Though apple cultivation is remunerative, the crop experiences high price fluctuations which serve as a disincentive to the growers. Therefore, the Government may explore the possibility of safeguarding the interests of the growers through MIS. The market infrastructure in terms of cold storage may be created in the State by the Government in order to minimize the price risk and thereby strike a balance between demand and supply.

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