# Production and Marketing of Apple Fruit Crop- a Study Premise to Shimla District of Himachal Pradesh, India

**Piyush Mehta[1*], Rajesh Kumar Thakur[2] and Sachin Chauhan[1]**

[1]Department of Business Management, Dr Y. S. Parmar University of Horticulture and Forestry, Nauni Solan, Himachal Pradesh (173 230), India
[2]School of Agribusiness Management, C. S. K. Himachal Pradesh Krishi Vishvavidyalaya, Palampur, Himachal Pradesh (176 062), India

## Abstract

The climate of dry temperate region of Himachal Pradesh is suitable for growing the wide range of temperate fruits such as apple, pear, plum, apricot and peach. The market structure of temperate fruits is going through a lot of changes in terms to build marketing links in terms to fetch lucrative market. Moreover, it also considers the high transportation cost, lack of storage facilities, non availability of better means of transportation and exploitation by middle men. The study has focused on management practices adopted by farmers in reference to manage the production and marketing activities of apple fruit crop. It has identified the marketing channel through which the apple fruit growers may safely dispose of their produce, which infact other temperate fruit growers can also gain benefits from the same.

## 1. Introduction

India contributes nearly 12.5% of the world fruit production and 74.9 mt of fresh fruits are produced in India annually (National Horticulture Database, 2010-12) (Kumar, 2010). Temperate fruits like apple, pear, peach, plum and cherry are grown in Himachal Pradesh, J&K, Uttrakhand and other north eastern states of India (Atteri, 2004). The state of Himachal Pradesh being primarily a temperate hilly state is known for the production of commercial temperate fruits crops (Kashirsagar, 2006) that includes apple, peach, plum, apricot, walnut, strawberry and cherry etc. among these apple is grown at the largest area and most preferred among the fruit growers in the state (Kumar et al., 2007). Apple, the most dominant fruit of this region, contributes around 57% of the total area under tree crops (Randev, 2005) and more than 88% of the total quantum of horticultural production (Kanwar and Nadda, 1984). Temperate fruits occupy around 110000 ha of total area in the state (Crisosto, 2006). With an annual production of 10 lakhs metric tonnes of temperate fruits, apple alone occupies nearly 67% area and contributes 82% of total fruit production (Gupta and Naik, 2009). Temperate fruit plays an important role in boosting the economy of the farmers in the state (Gangwar et al., 2008). Though, the production unit area[-1] of these fruit crops is still quite low in India as compared to international standards. One of the reason behind their low production is the lack of the scientific knowledge of growing temperate fruit crops (Chadha and Awasthi, 2001).

Himachal Pradesh is gifted with a variety of agro-climatic conditions, which make it suitable for growing a large variety of fruits, and has a total geographical area of 55673 km[2]. The total area under horticultural crops in Himachal Pradesh is around 211295 hectares, which constitutes about 32% of total cultivated plants (Table 1) and has a total fruit production of around 1027821 metric tonnes (Chadha, 1995).

Apple being the significant fruit crop of the state, the large emphasis has been given on this fruit. But now the state government is emphasizing to the fruit diversification for reducing the associated market risks. Recently, the emphasis has somewhat shifted to other fruit crops like peach, plum, kiwi and cherry. As these are also being grown in substantial quantum. The cultivation of these fruit crop is a long term proposition. Hence, requires a long term planning both on

production as well as on marketing efforts. The production of temperate fruit crops other than apple has also increased in the last few years.

The other widely grown temperate fruit varieties in the state include apricot and plum. Apricot and plum is grown in mid-hills to high hills having variable climatic condition (Negi et al., 1997). Varieties which are suitable for mid-hills are not suitable for high hills or dry temperate region (Salaria and Salaria, 2010). Hence, the present study was undertaken with the objectives to study the key components of production; management practices adopted by the farmers during production and marketing and the marketing activities undertaken by growers for apple crop and related marketing problem faced by them.

## 2. Material and Methods

The study was conducted at the hub of apple fruit grown area of the state i.e. Shimla district of Himachal Pradesh. The study was restricted to the referred area only. A sample size of around 360 farmers was drawn amongst the wide apple fruit growing farmers. But only 100 farmers have managed to give the appropriate responses in accordance to the structured questionnaire.

The related data was collected from the farmers with the help of formally structured questionnaire. The questionnaire was divided into two parts. Part-A was designated to seek the information on demographical variables such as name, contact no., age, educational qualification, income, production and marketing of temperate fruits. Whereas, Part-B was consisted of questions related to management practices adopted by farmers for managing the production and marketing related activities of apple crop. Various other related secondary data were also referred for the study from varied sources of available research articles, websites, journals, books, etc. The data were analyzed using simple % analysis and mean.

## 3. Results and Discussion

The study has taken various parameters to analyze the farmers' perception regarding the marketing activities undertaken for apple crop. But in order to understand the detailed view of the

study, some related aspects pertained to crop has also been briefed in Table 2.

The respondents had around 500 bearing plants of apples in study area, i.e. 16% of total respondents. Followed by 15% of the respondents who had bearing plants of apple between 101-150 and 151-200 bearing plants. Most of the respondents in study area had less number of non-bearing plants because 68% of the respondents had 1-50 non-bearing plants. Which shows that in study area, non-bearing plants of apple were less as compare to bearing plants. Thereby indicating a low rate of new plantation of apple plants (Table 2).

The average cost box[-1] observed on packaging material was ₹ 75.10, ₹ 73.94 on transportation and ₹ 27.94 on grading and packaging (Table 3). The study indicated that there has been a constant decrease in production cost plant[-1] with increase in number of plants (Table 4), resulting falling in (1-100 plants) range bear highest input cost plant[-1] (₹ 287.21), followed by (101-200 plants) i.e. (₹ 276.62), (201-300 plants) i.e. (₹ 284.26), (301-400 plants) i.e. (₹ 281.38) and (401-500 plants) i.e. (₹ 265.04). Further, it was found that respondents having plants above 500 bear lowest input cost plant[-1] (₹ 262.95). Thereby, indicating a declined trend between number of plants and average production cost of apple crop.

The Marketing system adopted for apple crop, by the farmers was observed to be quite simple. Largely, the marketing has been initiated in the post harvesting of apple. Following tables show case the details of marketing channels, marketing related problems and suggestive recommendation by the growers to improvise the marketing practices. The marketing channel for apple crop followed by the farmers indicated (Table 5) that almost 78% of growers perceived commission agent as the viable source of channelizing their apple produce in the market. Whereas, 9% of growers perceived pre-harvest contractors as one of the better option for marketing of their produce and only 5% perceived local buyers as to be the only choice for channelizing their produce in the market (Chart 1).

Though, study also observed many marketing problems being faced by the apple growers. But largely among all, Marketing Intelligence Information related problem was responded to

Table 1: Area and production of temperate fruits in Himachal Pradesh, India

| Fruits | Area under fruits (ha) | | | Production of fruits (MT) | | | Productivity of fruits (MT ha^{-1}) | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2008-2009 | 2009-2010 | 2010-2011 | 2008-2009 | 2009-2010 | 2010-2011 | 2008-2009 | 2009-2010 | 2010-2011 |
| Apple | 97438 | 99564 | 510161 | 280105 | 892112 | 101485 | 2.9 | 9.0 | 0.2 |
| Plum | 8420 | 8456 | 9591 | 10413 | 13717 | 8477 | 1.2 | 1.6 | 0.9 |
| Peach | 5170 | 5195 | 9935 | 5162 | 9527 | 5182 | 1.0 | 1.8 | 0.5 |
| Apricot | 3392 | 3444 | 3224 | 2200 | 3341 | 3483 | 0.6 | 1.0 | 1.1 |
| Pear | 7405 | 7382 | 15450 | 17381 | 32075 | 7370 | 2.3 | 4.3 | 0.5 |

Source: National Horticulture Board Database, 2011; MT: Metric tonnes

Table 2: Bearing and non-bearing plants of apple at Shimla, Himachal Pradesh, India

| Sl. no. | No. of plants | Bearing plants | | Non-bearing plants | |
|---|---|---|---|---|---|
| | | No. of respondents | Avg. bearing | No. of respondents | Avg. non-bearing |
| 1. | 0 | 0 | 0 | 15 | 0 |
| 2. | 1-50 | 1 | 40 | 68 | 28.08 |
| 3. | 51-100 | 10 | 88 | 11 | 84 |
| 4. | 101-150 | 15 | 135.6 | 2 | 150 |
| 5. | 151-200 | 15 | 180 | 1 | 200 |
| 6. | 201- 250 | 13 | 239.2 | 0 | 0 |
| 7. | 251-300 | 6 | 300 | 1 | 300 |
| 8. | 301-350 | 13 | 336.9 | 0 | 0 |
| 9. | 351- 400 | 7 | 392.8 | 1 | 380 |
| 10. | 401-450 | 2 | 435 | 0 | 0 |
| 11. | 451-500 | 2 | 490 | 0 | 0 |
| 12. | Above 500 | 16 | 641.8 | 1 | 775 |
| Total | | 100 | 298.44 | 100 | 47.56 |

Source: Primary probe

Table 3: Average cost on packaging material, transportation and grading and packaging of apple crop in study area

| Sl. No. | Packaging material | Transportation | Grading and packaging |
|---|---|---|---|
| 1. | ₹ 75.10 (Avg. cost box$^{-1}$ =TC÷Number of respondents =7510÷100) | ₹ 73.94 (Avg. cost box$^{-1}$ =TC÷Number of respondents= 7394÷100) | ₹ 27.26 (Avg. cost box$^{-1}$ =TC÷Number of respondents= 2726÷100) |

TC=Total cost; Source: Primary probe

Table 4: Annual production cost incurred by apple growers

| Sl. No. | Plants (Bearing+ non-bearing) | No. of respondents | Avg. no. of plants | Avg. input cost (₹ respondent$^{-1}$) | Input cost plant$^{-1}$ (avg. input cost÷avg. number of plants) |
|---|---|---|---|---|---|
| 1. | 1-100 | 7 | 95 | 27285.71 | 287.21 |
| 2. | 101-200 | 27 | 177.4 | 49074.07 | 276.62 |
| 3. | 201-300 | 19 | 257.36 | 73157.89 | 284.26 |
| 4. | 301-400 | 19 | 367.36 | 103368.4 | 281.38 |
| 5. | 401-500 | 7 | 470 | 124571.42 | 265.04 |
| 6. | Above 500 | 21 | 675.47 | 177619 | 262.95 |
| Total | | 100 | | | |

Source: Primary probe

be the most deficient. Though, it was realized by the growers that market information may even help them to adjust their harvesting pattern. Accordingly, the production planning may have been strategically framed, favouring the market needs. It was also observed (Table 6) that growers were unaware of any market comparative analysis related information, issued by the government authorities that may enable them to know the price trend and rate of margin at various markets. Few growers also responded with the lacking of potential packaging material and good transportation facilities, which disabled them to mobilize their produce at the right market, at the right time and in the right condition.

Study also managed to seek some suggestive recommendations from the apple growers to bring due improvisation in their marketing practices (Table 7). It was observed that growers mainly suggested to bring forward government agencies actively in the marketing operations, bringing an appropriate infrastructure development for warehousing, enabling growers to receive time and space utility in the market. Moreover, it

Table 5: Marketing channel for apple crop

| Sl. No. | Marketing channel followed | Response | |
|---|---|---|---|
| | | Number of respondents | % |
| 1 | Direct sales at local market | 4 | 4% |
| 2 | Wholesaler | 4 | 4% |
| 3 | Commission agent | 78 | 78% |
| 4 | Pre-harvest contract | 9 | 9% |
| 5. | Local buyers | 5 | 5% |
| Total | | 100 | 100% |

Source: Primary probe

Table 6: Marketing related Problems faced by apple growers

| Sl. No. | Marketing problems | Response (%) |
|---|---|---|
| 1 | Market intelligence (information) | 47 |
| 2 | Market comparative analysis | 36 |
| 3 | Packaging and transportation | 17 |
| Total | | 100 |

Source: Primary probe

Table 7: Suggestive recommendation by apple growers to improvise marketing activities for the crop

| Sl. No. | Suggestions | Response (%) |
|---|---|---|
| 1 | Government intervention in marketing activities | 36 |
| 2 | Warehousing infrastructural development | 33 |
| 3 | Marketing related training and awareness programme | 18 |
| 4 | Easy marketing information centers | 13 |
| Total | | 100 |

Source: Primary probe

was also suggested that marketing information dissemination should be substantially highlighted and government should establish various information centers for the same.

## 4. Conclusion

Royal delicious variety of apple was considered to be the favourable variety of apple among growers due to its high production and marketing value. The fruit colour was considered as main criteria for judging the maturity of apple. However, manual grading system was most prevalent method of grading for apple crop. Commission agents were considered as the most preferred marketing channel among the apple growers. Lack of marketing information and market comparative analysis were emerged as the significant problem faced by the apple growers. Government intervention in marketing activities and Development of Warehousing facilities were highly suggested recommendations by the apple growers.

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