Production and Marketing of Peach Fruit: A Study in Rajgarh area of District Sirmour in Himachal Pradesh

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CHAPTER – I

INTRODUCTION

1.1 **General**:

Peach is proverbially known as 'God's Fruit'. China has been known to be the world's earliest country in peach cultivation and has grown this fruit for more than 3,000 years according to historical records. Peach originated from plateau 1000-2000 meters above the sea level in the North-West China provinces of Gansu and Shannxi. In 140-88 BC, it was introduced by way of the Silk Road into Persia where it came to be known Persian Fruit. Later it was acclimatized in many European countries and the United States (Negi, 1982).

India is also gifted with variety of agro-climatic conditions and is the second largest producer of fruit and vegetables accounting for about 8 and 13 per cent of the total world production respectively (Subramanyam,1994). However, it could not fully exploit the advantage it has in cultivation of fruits and vegetables. The agro-climatic conditions in different part of India provide ample opportunities for the regional specialization of the horticultural crops (Azad 1988 and Singh, 1993). Among these regions Western Himalayan region is famous for the production of apple and other temperate fruits. The Himalayan region covers more than one eighth of the total land area of the country.

The Western Himalayan region comprises of Himachal Pradesh, Jammu and Kashimir and Uttar Pradesh hills which are suitable for growing different varieties of temperate and stone fruits. These states are successfully growing apple, pear, peach, plum, almond, walnut, charry and apricot. In Himachal Pradesh emphasis is laid on cultivation of horticultural crops which, because of hilly terrain is done mainly on narrow terraces. The horticultural

crops in such areas helps in making efficient use of land resource as these give higher returns as compared to traditional crops (Swarup & Sikka, 1987). Simultaneously, fruit crops effectively check soil erosion and helps in restoring ecological balance in the region. The fruit cultivation in the State has shown a good growth during last two decade. The area under fruits have increased from 44329 hectares in 1970-71 to 2,07,240 hectare in 1998-99. The hill fruits are broadly divided into two categories according to agro-climatic conditions of the state. The first one include apple, pear, cherry etc. and are grown at an altitude higher than 5000 ft. above MSL. In the second category fruits like peach plum, apricot, almond etc. are grouped which thrive comparatively in warmer climatic conditions (between 3000 to 5000 ft. above MSL).

Among above mentioned categories second one is chosen by the Directorate of Horticulture, Govt. of Himachal Pradesh and it was decided to under take the study, "Post Harvest Management of Peach Fruit in Himachal Pradesh". The reason behind selection of particular fruit is increasing popularity of peach in Indian markets.

The first experimental peach orchard was planted by the Department of Horticulture in 1955. It was only after the '70s that the results became visible. At present Himachal Pradesh is producing worth rupees 5 crore of peaches every year and Rajgarh valley in district Sirmour alone accounts for rupees 4 crores of the produce. It is no wonder, therefore, that Rajgarh is the Peach Bowl of Asia (The Tribune 2001).

1.2 The Issue The area under fruits in the state has been increasing at a rapid rate due to higher returns as compared to other crops. With the growth in fruit production the producers are facing lot of problems in disposal of their produce. They do not get desired returns for their produce due to rising costs to be incurred in post harvest management. The problems of

peach growers are relatively serious than other fruits because of highly perishability in its nature. Hence, to know the post harvest problems of peach the Directorate of Horticulture Govt. of Himachal Pradesh assigned this study to Agro-Economic Research Centre, Himachal Pradesh University, Shimla. Broadly the present study proposes to cover following aspects:

1.3 The Objectives

1. To study the trend in area, production and export of peach as well as other fruits in Himachal Pradesh,
2. to workout the costs and returns of peach in Himachal Pradesh,
3. to study the existing marketing system of peach fruit in Himachal Pradesh,
4. to study the weekly arrival and wholesale prices of peach in selected markets,
5. to examine the costs, margins and price spread in marketing of peach fruit in selected markets; and
6. to study the post harvest problems of marketing in Himachal Pradesh.

CHAPTER – II

METHODOLOGY

The area under fruits in the State has been increasing at a rapid rate due to better returns as compared to other crops. Therefore, certain fruits like apples, plum, peaches, apricot, pear citrus etc. are becoming increasingly popular with the farmers areas where these can be grown. In the higher hills more emphasis is given to the production of apples whereas in mid hills peach, plum, pear and apricot are grown, kinnow and orange are grown in lower hills.

2.1 Study Area District Sirmour was selected purposely for the present study as it has the highest area and production of peach in the State. In next stage Rajgarh was selected purposely because 80 per cent of the total preach production of the state is concentrated in this valley (The Tribune, May 12, 2001). Rajgarh is located in the heart of Sirmour district in lush green valley. Rajgarh has two sub-divisions, one is Rajgarh it self and the other is Sarahan, another beautiful valley of district Sirmour. The total geographical area of Rajgarh is 810 sq. km. out of which and 30 per cent is under forest.

2.2 Sample For the selection of ultimate sample of orchardists from selected district the following procedure was adopted. From selected district, one tehsil with largest area under fruits was selected from which one Patwar circle having similar condition was chosen. In the final stage one village was selected randomly. Two villages nearest to selected villages were taken to form a cluster of three villages. From these selected village 50 farmers, probability proportion to different size class farmers, were randomly selected for the detailed study. In this manner, a sample of 26 marginal, 14 small and

10 farmers of medium categories was obtained. The required information have been collected through personal interview method in the pre-structured schedule. A simple tabular analysis has been used for processing the data and arriving at the conclusions.

2.3 Secondary Data

The secondary data regarding area, production and export was collected from the Directorate of Horticulture of Himachal Pradesh. The data regarding weekly arrivals and wholesale prices was collected from the Market Committee Offices of the selected markets viz. Chandigarh, Delhi and Mumbai. These markets were selected purposively on the recommendations of the Directorate of Horticulture, Himachal Pradesh.

For the analysis of secondary data, the following tools have been used.

2.4 Compound Growth Rates:

The Compound Growth Rates have been calculated by fitting the exponential function of the following form.

$$Y = ab^t$$

Where Y= Area/Production/Export

t= Time

and CGR = (b-1)x 100

Where

$$\text{Log } b = \frac{N\Sigma t \text{ Log } y - \Sigma t \Sigma \text{ Log } y}{N\Sigma t^2 \quad (\Sigma t)^2}$$

The standard deviation of the arrivals and wholesale price were computed by the following formula.

$$\text{Standard Deviation: } = \sqrt{\frac{\Sigma \text{ xi xi}}{\text{----------}}}$$

$$\sum_{N}$$

where x_i = deviation of ith observation from mean.

N = Number of observations

In addition to the averages the variation in arrivals and wholesale prices have been computed by working out coefficient of variation with the following formula.

$$C.V. = \frac{\text{Standard deviation}}{\text{Mean}} \times 100$$

It may be assumed that arrivals and wholesale prices in the market are related and governed by same marketing mechanism. In order to establish the relationship between arrivals and wholesale prices, correlation coefficients were computed by the following formula

$$r = \frac{\Sigma x_i \, y_i}{\sqrt{\Sigma xi2 \; \Sigma yi2}}$$

Where x_i = Deviation of X_i from mean

y_i = Deviation of Yi from mean

Reference period The study pertains to the agricultural year 1998-99.

2.6 Methods of Measurement of Marketing Margins :

There are three methods generally used for the calculation of marketing margins (Mirchandani, 1965) which are as follows :

(a) Following the specific lot of consignment through the marketing system and then assessing the cost involved at each of the different stages.

(b) Summation of average gross margins obtained by dividing money value of sales minus money value of purchase by the number of units transacted for each type of marketing agency.

(c) Comparison of prices at different levels of marketing over the same period of time.

None of the above methods is perfect and each has its own merits and demerits. However, for this study, the first method was found to be more suitable as in case of perishable commodities the time-gap between the commodity when it enters the market and when it reaches to the consumer is comparatively short whereas, in case of non-perishable items like grains, it is not so.

2.7 CONCEPTS AND DEFINITIONS

Assembling Point: Assembling point has been defined as a place where the growers assemble their fruit for the purpose of transporting to various distributing and consuming markets.

Bearing tree: A tree of bearing age has been defined as a tree which has attained the specified age irrespective of the fact whether during the reference period it bore fruit or not . This age has been taken to be seven years after planting.

Consuming Market: A market which utilizes most of its supplies for local consumption.

Commission Agent: The Commission agent, also known as 'Kacha Arhatia' acts as a seller for the goods booked to him by the growers. He charges commission for his services but does not take the title of the goods.

Distributing Market: Distributing market has been defined as one where the produce from the producing areas comes first and from where some part of it is redistributed to other markets.

Forwarding Agent: Forwarding agents perform the function of forwarding the produce to the destination and to the person for whom the produce has been marked by the consignor. He charges his fee for the service from the consignor.

Grading: Means separation of the fruits into various lots according to quality and size of each fruit.

Main Occupation: The main occupation of a person is taken to be that activity from which a person gets his largest income.

Marketable Surplus: The quantity of fruit which can be marketed after fulfilling the domestic needs.

Marketed Surplus: Refers to the quantity of the produce actualy marketed.

Marketing Margin or Price Spread: Marketing margins refer to the difference between the price received (after deducting all marketing expenses incurred) by the grower and that paid by the consumer. This difference is also often called 'Price Spread'.

Non-Bearing Tree: A non-bearing tree has been defined as a tree which has not reached the bearing age (1-6 year).

Orchard: An area having at least ten Peach plants has been defined as an orchard irrespective of its geographical contiguity or scatteredness.

Orcharedist: Any person owning an orchard has been defined as an orchardist.

Picking: Means harvesting of the fruits.

Productivity: Average yield per fruit bearing tree in terms of weight.

Pre-harvest Contractor: Pre-harvest contractor is one who buys the standing crop from the growers i.e. they buy the crop before its harvest and undertake to perform all the marketing operations including picking at their own risk and cost.

Retailer: The retailers is an intermediary in the marketing channel, usually licensed, who undertakes the job of retailing and caters to the needs of

consumers. He generally keeps a small establishment such as a shop with weighing equipments.

Subsidiary Occupation: The subsidiary occupation has been taken as the occupation from which a person gets his second largest income.

Wholesaler: A wholesaler is one who buys and sells produce in bulk at his own risk. He takes title of the goods.

Wholesaler-cum-commission Agent: A wholesaler-cum-commission agent also known as 'Pucca Arhatiya' is one who performs both the functions of commission agent as well as wholesaler.

CHAPTER – III

STATUS OF HORTICULTURAL CROPS IN HIMACHAL PRADESH

In this chapter attempt has been made to highlight the status and potential of horticultural crops in different regions of the State. The trends in area, production and marketed surplus of horticultural crops and of peach have been studied in details at district and state level.

3.1 Growth in Area of Different Horticultural Crops

After the attainment of full statehood, Himachal Pradesh has witnessed a an impressive progress in the production of horticultural crops (specially fruit and vegetables) because of planned efforts made by state government for the development of these crops. The farmers of the state also realized and accepted these crops in their farming system replacing traditional (subsistence) crops. The progress achieved in this field is mainly attributed to compatible agro-climatic conditions, higher returns, eco-system and soil conservation, better utilization of wasteland etc. Realizing the potential of fruit crops in some of the areas of the state the field crops have been completely substituted with fruit crops (Sikka & Saraswat, 1993).

The level of growth in output is an outcome of the growth rates of both area and yield. It is therefore, pertinent to examine these parameters in respect of horticultural crops in the State. This would help in finding out the underlying factors responsible for such performance and thereby permit a broad judgment on the overall production possibilities in future (Saraswat, 1994).

Table 3.1 shows the trend in area under different fruits during 1975-76 to 1999-2000. On an overall, area under fruits has increased at 5.15 per cent

per annum during this period. The highest growth was observed in nuts and dry fruits (16.86 per cent per annum) followed by other sub-tropical fruits (8.22 per cent per annum) citrus (7.11 per cent per annum), other temperate fruits (4.00 per cent per annum). The area under apple has increased from 30576 hectare in 1975-76 to 88673 hectare during 1999-2000 registering a compound growth rate of 4.06 per cent per annum. The main reason for this increase is the high profitability of fruit as compared to cereals and pulses. Secondly, the land which is not suitable for cereals and pulses has been shifted towards fruit cultivation.

Table 3.1: Area Under Different Fruits in Himachal Pradesh.

(Area in hectare)

Years	Apple	Other temperate fruits	Nuts & dry fruits	Citrus	Other sub-tropical fruits	Total fruits
1975-76	30576	12078	3543	7552	5121	63370
1976-77	36709	13332	4027	8528	6112	68708
1977-78	38900	14421	4779	8647	7115	74862
1978-79	40630	15235	5401	11062	7973	80301
1979-80	41922	16374	6020	12465	9110	85891
1980-81	43331	17464	6892	14471	10267	92425
1981-82	45335	19386	7671	16822	10828	100042
1982-83	47354	21245	8487	19719	11871	108676
1983-84	48292	22184	9009	21926	12640	114051
1984-85	49840	23649	9804	23802	13485	120580
1985-86	51103	24944	10455	27365	14903	128770
1986-87	52399	25959	10930	29589	16108	134585
1987-88	54912	26726	11628	31226	17559	142051
1988-89	57447	27328	12061	32995	19453	149284
1989-1990	59988	27956	12559	34863	21103	156469
1990-91	62088	28556	13009	36621	22768	163042
1991-92	66767	29051	13581	36885	24484	170768
1992-93	69439	29475	14008	37621	26348	176891
1993-94	72406	30174	14553	37961	27772	182866
1994-95	75469	30780	14935	38323	30182	189689
1995-96	78292	31292	15237	38595	32268	195684
1996-97	80338	31088	15478	38369	30939	196212
1997-98	83056	31645	15832	38635	33194	202362
1998-99	85631	31925	16061	38711	34912	207240
1999-2000	88673	32400	16396	39138	36344	212951
C.G.R.	4.06	4.00	16.86	7.11	8.22	5.15

Source: Directorate of Horticulture, Government of Himachal Pradesh.

3.2 Production of Different Fruits in Himachal Pradesh

The production of various fruits in Himachal Pradesh during 1975-76 to 1999-2000 has been presented in Table 3.2. It is observed from the table that fruits have much variation in production during year to year because of alternative bearing habit of some fruits. Table further reveals that during 1975-76 the total production of different fruits grown in Himachal Pradesh was 245882 tonnes, which decreased up to 89415 tonnes in 1999-2000, which appears to be an abnormal year for fruit production. The production level of almost all fruits and most significantly apples plummeted down suddenly. However the compound growth rate in this respect was 2.36 per cent annually. The annual compound growth rate of other temperate fruits was highest (3.60 per cent per annum) followed by nuts and dry fruits (3.30 per cent), other sub-tropical fruits (3.16 per cent), citrus (2.71 per cent) and apple (1.75 per cent per annum).

Table 3.2: Production of Different Fruits in Himachal Pradesh.

(Production in tonnes)

Years	Apple	Other temperate fruits	Nuts & dry fruits	Citrus	Other sub-tropical fruits	Total fruits
1975-76	200000	17432	1911	15660	10879	245882
1976-77	119228	6807	1284	2677	4803	134809
1977-78	131617	10299	2832	4203	1602	150553
1978-79	121896	6176	704	4184	4267	137227
1979-80	135457	11714	767	5120	6979	160061
1980-81	118013	9264	1782	4400	6369	139828
1981-82	306789	17667	1579	9345	6554	241943
1982-83	139086	15691	1081	9614	12382	177854
1983-84	257913	21859	2204	1208	10215	304275
1984-85	170629	26406	2224	3947	12714	215920
1985-86	174618	21140	1738	4718	5528	207742
1986-87	359321	12432	2800	11915	14040	400508
1987-88	259277	26861	2716	10875	8964	308693
1988-89	165156	11521	2631	8474	9573	197355
1989-1990	394868	39631	3409	12320	9762	459990
1990-91	342071	14934	3105	12600	13604	386314
1991-92	301730	26030	2400	7742	4401	342300
1992-93	279051	16041	2643	9313	17807	324850
1993-94	294734	21397	2206	4409	2731	325970
1994-95	122762	27497	2375	6665	11224	170540
1995-96	276681	21074	2474	5839	5821	311890
1996-97	288538	24793	3344	13834	21116	351670
1997-98	234253	25116	2456	11759	6109	279690
1998-99	393653	17901	3075	13111	19871	447684
1999-2000	49129	17901	1895	9257	11233	89415
C.G.R.	1.75	3.60	3.30	2.71	3.16	2.36

Source: Directorate of Horticulture, Government of Himachal Pradesh.

3.3. Magnitude of Horticultural Crops Across The Sub-Regions

The district wise area and production of fruit crops during the period 1975-76 to 1999-2000 have been presented in Table 3.3 and 3.4 respectively. The district wise data on vegetable over the years was not available and hence the same could not be included in this analysis, the detailed description of area and production are as follows:

3.3.1 District wise area under fruits

The proportionate share of different districts in total area under fruits in Himachal has been presented in Table 3.3. Table reveals that the district known for fruit cultivation in 1975-76 have shown a decreasing proportion in these crops during 1999-2000. The share of Shimla and Kullu district in total fruit area in the State decreased from 29.9 and 16.6 per cent in 1975-76 to 19.14 and 11.57 per cent during 1999-2000 respectively. This trend is similar to almost all fruit crops in Shimla and Kullu district. However in foot hill regions of the state some sub-tropical fruits have become popular. In these areas the change in share of fruit crops have increased significantly, specially in Kangra districts, where the share of fruit crops have increased from 12.9 per cent during 1975-76 to 20.38 per cent during 1999-2000. Similarly in other foothill districts like Una, Hamirpur and Bilaspur the share of total fruit crops in the State is increasing.

The overall scenario of the Horticultural Crops in the State suggest that some new crops are becoming popular and are growing on commercial scale by harnessing the potential of the area in various agro-climatic regions of the State.

Table 3.3: District-wise Area Under Fruit Crops in Himachal Pradesh

(Hectares)

Districts/ fruits	Apple		Other temperate fruits		Nuts & dry fruits		Citrus		Other sub-tropical fruits		All fruits	
	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000
Shimla	16140 (46.0)	34465 (38.87)	2067 (17.1)	3317 (10.24)	462 (13.0)	1990 (12.14)	210 (2.8)	771 (1.97)	51 (1.0)	207 (0.57)	18930 (29.9)	40750 (19.14)
Kullu	8573 (24.4)	19383 (21.86)	1490 (12.3)	3709 (11.45)	331 (9.3)	1072 (6.54)	103 (1.4)	361 (0.92)	16 (0.3)	113 (0.31)	10513 (16.6)	24638 (11.57)
Mandi	5354 (15.3)	13727 (15.48)	1662 (13.8)	5783 (17.85)	639 (18.0)	3076 (18.76)	1218 (16.1)	5198 (13.28)	1012 (19.8)	3804 (10.47)	9895 (15.7)	31588 (14.83)
Chamba	920 (2.6)	9207 (10.38)	354 (2.9)	1940 (5.99)	124 (3.5)	2161 (13.18)	232 (3.1)	1342 (3.43)	212 (4.2)	799 (2.20)	1842 (2.9)	15449 (7.25)
Kinnaur	1094 (3.1)	6249 (7.04)	222 (1.8)	338 (1.04)	469 (13.2)	1235 (7.54)	-	-	-	-	1785 (2.8)	7822 (3.67)
Lahaul-Spiti	29 (0.1)	475 (0.53)	21 (0.2)	72 (0.22)	4 (0.1)	26 (0.16)	-	-	-	-	54 (0.1)	575 (0.27)
Kangra	351 (1.0)	603 (0.68)	2074 (17.2)	4697 (14.50)	583 (16.6)	2417 (14.75)	3075 (40.7)	17043 (43.55)	2047 (40.0)	18635 (51.27)	8130 (12.9)	43395 (20.38)
Solan	198 (0.6)	552 (0.63)	2734 (22.6)	5446 (16.81)	298 (8.4)	1206 (7.34)	746 (9.9)	3642 (9.31)	299 (5.8)	1988 (5.47)	4275 (6.7)	12834 (6.03)
Sirmour	2417 (6.9)	4008 (4.53)	963 (7.9)	4638 (14.31)	411 (11.6)	2143 (13.07)	1050 (13.9)	3156 (8.06)	375 (7.3)	3006 (8.27)	5216 (8.2)	16951 (7.96)
Una	-	-	98 (0.8)	958 (2.96)	64 (1.8)	186 (1.13)	196 (2.6)	2209 (5.64)	243 (4.7)	2044 (5.63)	60 (0.9)	5397 (2.53)
Hamirpur	-	-	101 (0.9)	550 (1.70)	130 (3.7)	585 (3.57)	278 (3.7)	2438 (6.23)	286 (5.6)	2472 (6.80)	795 (1.2)	6045 (2.84)
Bilaspur	-	4 (Neg.)	292 (2.5)	952 (2.93)	28 (0.8)	299 (1.82)	444 (5.8)	2978 (7.61)	580 (11.2)	3276 (9.01)	1344 (2.1)	7509 (3.53)
H.P.	35076 (100.0)	88673 (100.0)	12078 (100.0)	32400 (100.0)	3543 (100.0)	16396 (100.0)	7552 (100.0)	39138 (100.0)	5121 (100.0)	36344 (100.0)	32268 (100.0)	212951 (100.0)

Note: Figures in the parentheses are percentage to respective totals

Source: Directorate of Horticulture, Government of Himachal Pradesh, Shimla

3.3.2 District wise Production of All Fruits

The fruit production is too much dependent upon weather conditions, elevation age of plant etc. and some fruits have alternative bearing trends. These factors lead to wide variations in total fruit production in the state. The district-wise production during 1975-76 and 1999-2000 is given in Table 3.4, which shows that where the area under fruits has increased the share of production has declined. The probable reasons for this trend are mainly that new plantations have not yet reached the bearing stage and that has not improved in any significant manner productivity.

Table 3.3: District-wise Production of Fruit Crops in Himachal Pradesh

(Tonnes)

Districts/ fruits	Apple		Other temperate fruits		Nuts & dry fruits		Citrus		Other sub-tropical fruits		All fruits	
	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000	1975-76	1999-2000
Shimla	97031 (48.5)	20536 (41.81)	6059 (34.7)	801 (4.47)	705 (36.9)	261 (13.77)	806 (5.1)	25 (0.27)	126 1.1)	34 (0.30)	104727 (42.6)	21657 (24.22)
Kullu	62931 (31.5)	7398 (15.06)	3624 (20.8)	10032 (56.04)	-	176 (9.29)	276 (1.8)	5 (0.05)	5 (Neg.)	20 (0.18)	66836 (27.2)	17631 (19.72)
Mandi	18892 (9.4)	3726 (7.58)	2385 (13.7)	1731 (9.67)	60 (3.2)	245 (12.93)	526 (3.3)	273 (2.95)	1275 (11.7)	541 (4.81)	23138 (9.4)	6516 (7.29)
Chamba	2737 (1.4)	1761 (3.58)	572 (3.3)	179 (0.99)	119 (6.2)	263 (13.88)	562 (3.6)	61 (0.66)	196 (1.8)	130 (1.16)	4186 (1.7)	2394 (2.68)
Kinnaur	6622 (3.3)	15432 (31.42)	53 (3.0)	96 (0.54)	554 (22.0)	364 (19.21)	-	-	-	-	7707 (3.1)	15892 (17.77)
Lahaul-Spiti	-	56 (0.11)	-	11 (0.06)	-	4 (0.21)	-	-	-	-	-	71 (0.08)
Kangra	1568 (0.8)	110 (0.22)	986 (5.6)	2918 (16.30)	25 (1.3)	203 (10.71)	10226 (65.3)	6913 (74.68)	7025 (64.6)	5206 (46.35)	19830 (8.1)	15350 (17.17)
Solan	946 (0.5)	33 (0.06)	1552 (8.9)	1440 (8.05)	178 (9.3)	142 (7.49)	533 (3.4)	215 (2.32)	202 (1.9)	123 (1.09)	3411 (1.4)	1953 (2.18)
Sirmour	9273 (4.6)	77 (0.16)	1133 (6.6)	329 (1.85)	232 (12.1)	191 (10.08)	966 (6.2)	289 (3.12)	520 (4.8)	2117 (18.85)	12124 (4.9)	3003 (3.36)
Una	-	-	-	262 (1.46)	-	5 (0.26)	248 (1.6)	868 (9.38)	250 (2.2)	1094 (9.74)	498 (0.2)	2229 (2.49)
Hamirpur	-	-	275 (1.6)	39 (0.22)	38 (2.0)	28 (1.48)	588 (3.8)	296 (3.20)	727 (6.7)	1030 (9.17)	1628 (0.7)	1393 (1.56)
Bilaspur	-	-	315 (1.8)	63 (0.35)	-	13 (0.69)	929 (5.9)	312 (3.37)	553 (5.1)	938 (8.35)	1797 (0.7)	1326 (1.48)
H.P.	200000 (100.0)	49129 (100.0)	17432 (100.0)	17901 (100.0)	1911 (100.0)	1895 (100.0)	15660 (100.0)	9257 (100.0)	10879 (100.0)	11233 (100.0)	245882 (100.0)	89415 (100.0)

Note: Negligible (area less than 0.1 per cent) Figures in the parenthesis are percentage are respective table

Source: Directorate of Horticulture, Government of Himachal Pradesh, Shimla

3.4 Export of Different Fruits From Himachal Pradesh

Himachal Pradesh being sparsely populated State having less than 10 per cent of urban population; the internal demand for horticultural produce is insignificant. Therefore, more than 90 per cent of the produce is sold out side the State mostly in northern markets of India (Singh & Saraswat 1996) Generally fruits are highly perishable in nature and have low keeping quality

Thus, they have to be consumed with in a short time span after production. These facts give rise to high proportion of market surplus. The consuming areas, usually are located at far off distance from the producing areas. The compound growth rates of production and export for different fruits from 1977-78 to 1999-2000 have been presented in Table 3.5. It is apparent that the CGR of exports invariable exceed that of total production of different types of fruits. This clearly indicates that stress is increasingly given to export of fruits to markets out side the state.

Table 3.5: Export of Different Fruits From Himachal Pradesh

(Tonnes)

Years	Apple			Other temperate fruits		
	Total production	Sold out side of H.P.	Proportion sold out side of H.P.	Total production	Sold out side of H.P.	Proportion sold out side of H.P.
1977-78	131617	105294	80.00	10299	9011	87.49
1978-79	121896	87516	79.99	6176	5404	87.50
1979-80	135475	108380	80.00	11714	10250	87.50
1980-81	118013	94411	80.00	9264	8106	87.50
1981-82	306798	245438	79.99	17667	15633	88.49
1982-83	139086	111969	80.00	15691	13820	88.07
1983-84	257913	167789	65.05	21859	19291	88.25
1984-85	170629	136503	79.99	26406	23274	88.13
1985-86	174618	139684	80.00	21140	14798	70.00
1986-87	359321	287457	80.00	12432	8702	70.00
1987-88	259277	207421	80.00	26821	18803	70.00
1988-89	165156	132125	80.00	11521	8065	70.00
1989-1990	384864	355190	89.95	39631	27742	70.00
1990-91	342071	307864	90.00	14934	10454	70.00
1991-92	301730	271567	90.00	26030	18221	70.00
1992-93	279051	251146	90.00	16041	11229	70.00
1993-94	294734	265261	90.00	21397	14978	70.00
1994-95	122782	110504	90.00	27495	19247	70.00
1995-96	276681	249014	90.00	21074	14748	69.95
1996-97	288538	259684	89.99	24793	17355	69.99
1997-98	234253	210828	90.00	25116	17581	69.99
1998-99	393653	354287	90.00	17974	12582	70.00
1999-2000	49129	44216	89.99	17901	12531	70.00
C.G.R.	1.60	5.43	-	3.55	2.12	-

Contd….

Table 3.5: Contd….

(Tonnes)

Years	Citrus			Other subtropical temperate fruits		
	Total production	Sold out side of H.P.	Proportion sold out side of H.P.	Total production	Sold out side of H.P.	Proportion sold out side of H.P.
1977-78	4203	3057	72.37	1602	1189	74.21
1978-79	4184	3043	72.73	4276	3474	81.41
1979-80	5126	3728	72.73	6777	5981	85.72
1980-81	4400	3200	72.73	6369	5560	87.29
1981-82	9345	6769	72.73	8554	6452	98.44
1982-83	9614	6992	72.73	12382	11414	92.18
1983-84	12084	8788	72.77	10215	9152	89.59
1984-85	3974	2870	72.22	12714	11426	89.56
1985-86	4718	3774	79.99	5528	4422	79.99
1986-87	11915	8514	71.46	14040	11232	80.00
1987-88	10875	8700	80.00	8964	7171	80.00
1988-89	8474	6779	80.00	9573	7658	80.00
1989-1990	12320	9856	80.00	9762	7810	80.00
1990-91	12600	10080	80.00	13604	10883	80.00
1991-92	7742	6194	80.00	4401	3521	80.00
1992-93	9313	7450	79.99	17807	14246	80.00
1993-94	4409	3527	79.99	2731	2185	80.00
1994-95	6665	5332	80.00	11224	8979	79.99
1995-96	5839	4671	79.99	5821	4657	80.00
1996-97	13834	9684	70.00	21116	14783	70.00
1997-98	11759	8231	69.99	6109	4276	69.99
1998-99	13111	9178	70.00	19871	13910	70.00
1999-2000	9257	6480	70.00	11233	7863	69.99
C.G.R.	3.14	3.23	-	3.64	1.27	-

Source: Directorate of Horticulture, Government of Himachal Pradesh

3.5 Area Under Peach

The area under fruits in the state has been increasing at a very rapid rate due to higher returns as compared to other crops. Therefore certain fruits like apple, plum, peaches, apricot, pear, citrus etc. are becoming increasingly popular with the farmers in their respective areas.

Peach is grown in all the districts of Himachal Pradesh except Lahaul & Spiti. The district wise area under peach and their growth rate from 1990-91

to 1999-2000 have been presented in Table 3.6. The total area under peach was recorded 4125 hectare in 1990-91 which increased upto 5826 hectare during 1999-2000 registering a compound growth rate of 4.31 per cent per annum. The highest area under peach was recorded in Sirmour district where as district Mandi registered the highest growth in the state i.e. 9.32 per cent per annum.

Table 3.6: Area Under Peach in Different Districts Since 1990-91

(Hectares)

Districts	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	C.G.R.
Shimla	310	313	317	318	319	320	321	327	329	332	0.15
Kullu	19	19	19	19	20	21	22	24	26	27	4.34
Mandi	548	548	650	658	669	680	678	685	692	716	9.32
Chamba	157	173	193	229	250	263	273	296	296	299	7.72
Kinnaur	67	67	67	67	67	67	67	67	67	67	Neg.
Kangra	758	773	777	788	794	786	799	803	808	817	0.71
Solan	296	312	332	344	364	392	408	423	430	440	4.72
Sirmour	1380	1434	1516	1729	1911	2089	2129	2360	2385	2435	7.30
Una	309	314	319	323	326	329	333	336	336	342	1.06
Hamirpur	154	168	172	172	173	175	176	178	178	181	1.28
Bilaspur	127	129	134	134	138	151	152	160	165	170	3.51
H.P.	4125	7276	4496	4781	5031	5283	5366	5659	5712	5826	4.31

Source: Directorate of Horticulture, Government of Himachal Pradesh, Shimla

3.6: Production of Peach in Different District of Himachal Pradesh.

The year wise production of peach and growth rate in different districts of Himachal Pradesh during 1990-91 to 1999-2000 have been presented in Table 3.7. District-wise production scenario indicates that there are wide variations in production pattern of different districts of the State. In majority of the districts peach production is decreasing. As a result during last decade peach production in the state decline by 10.75 per cent per annum.

Table 3.7: District-wise Production of Peach Since 1990-91

(Tonnes)

Districts	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	C.G.R.
Shimla	41	34	51	40	4	6	-	3	1	14	-27.82
Kullu	4	-	-	-	2	3	-	-	-	2	-5.96
Mandi	9	6	7	6	-	7	16	10	14	21	11.82
Chamba	32	13	17	7	-	3	9	11	17	3	-12.92
Kinnaur	-	-	-	-	-	-	-	-	-	4	-
Lahaul-Spiti	-	-	-	-	-	-	-	-	-	-	-
Kangra	276	54	103	46	2	49	39	1	3	38	-29.21
Solan	7	23	31	23	14	11	389	323	206	12	22.55
Sirmour	501	627	860	558	394	471	44	36	85	251	-23.18
Una	7	3	6	3	-	-	17	9	9	11	15.22
Hamirpur	10	14	10	23	1	6	11	11	11	6	-4.98
Bilaspur	3	3	2	4	-	6	6	7	7	5	15.15
H.P.	880	777	1087	710	417	562	531	411	411	367	-10.75

Source: Directorate of Horticulture, Government of Himachal Pradesh, Shimla

CHAPTER - IV

SOCIO-ECONOMIC PROFILE OF SAMPLE FARMERS

The human resources, land resources, livestock and other resources such as capital etc. have been included in socio-economic profile of the farm families. The availability and utilization pattern of these resources in producing a particular crop in the farm definitely help in predicting the prospects of the crop grown as well as standard of living of the people which ultimately is the result of socio-economic capabilities. The better use of these resources can certainly result in generating enough income to feed the families and to achieve higher standard of living.

The family size, education level, work force and occupation pattern of the workers have been included in human resources. In case of land resources the land utilization pattern and, cropping pattern have been examined. Since the area under orchards is about 62 per cent hence, stage wise production and number of plants in different category of farms have also been worked out and presented in this chapter.

4.1 Family Size and Work Force

The family size and proportion of are important aspect of farm families especially when it is to be analysed in the light of labour availability for the production of a particular crop and that too commercial. It is because of this importance that average family size of the sample households has been worked out and presented in Table 4.1. It may be seen that average family size of overall sample is 5.54 persons including male, female and children. The family size was 5.04, 5.79 and 6.50 persons among marginal, small and medium farms respectively. At overall level it was 5.54 persons per family.

Among these categories of farm families the proportion of male is higher. However among these category of farms the vary ratio of children between 1.65 to 1.86 in each household. Above discussion concludes that potentials of male oriented households must have some different angle to work in the modern economic system as compared to female oriented distribution of family size. For reaching upto the conclusion it is necessary to analyse the working force in a particular households so that direction towards adoption of occupation may be discussed.

Table 4.1: Average Family Size of Sampled Orchardist.

(No. of persons in the category)

Category of farm	Sample size	Male	Female	Children	Total
Marginal	26	49 (1.88)	39 (1.5)	43 (1.65)	131 (5.04)
Small	14	28 (2.00)	27 (1.93)	26 (1.86)	81 (5.79)
Medium	10	27 (2.70)	21 (2.10)	17 (1.70)	65 (6.50)
All	50	104 (2.08)	87 (1.74)	86 (1.72)	277 (5.54)

Note: Figures in parentheses are the per household number of family member

The household work force indicate (Table 4.2) that at overall level 50 per cent of the population falls under working force which was 77 per cent among males and 69 per cent among females. The small category of farms were observed to have smaller percentage of working force (44%) as compared to 50 and 58 per cent among marginal and medium farms respectively. The lower percentage of work force in small category of farms have also resulted in higher dependency ratio among these category of farms (Table 4.2). At overall level about two persons were depending upon each worker for all their needs. In this table it may also be observed that 50 per cent of the

children population is falling in the category of marginal farms followed by small (30%) and medium (20%) only. Distribution of work force further analysed into their main and secondary occupations so that diversion of the family members to words particular occupation may be judged.

Table 4.2: Work Force on the Sample Orchardist.

Particulars	Marginal	Small	Medium	Total
Male total	49	28	27	104
Workers	37	20	23	80
%of workers	75.51	71.43	85.19	76.92
Female total	39	27	21	87
Workers	29	16	15	60
%of workers	74.36	59.26	71.43	68.97
Children total	43	26	17	86
Workers	-	-	-	-
%of workers	(0.00)	(0.00)	(0.00)	(0.00)
Total population	131	81	65	277
Total workers	66	36	38	140
% of workers	50.38	44.44	58.46	50.54
Dependency ratio	1.98	2.25	1.71	1.98

4.2 Occupation Distribution

Distribution of work force into various occupations (Table 4.3) reveals that at overall level of 140 workers 85 per cent have adopted agriculture as their main occupation. This was followed by service 9.29 per cent and non-agriculture labourer. In case of secondary occupation agriculture including horticultural was the secondary occupation of about 64 per cent whereas about 25 per cent were working as non-agricultural labourers. About 50 per cent workers belonging to marginal farmers adopted agricultural labour as their secondary occupation. This shows low level of land holding size in this category which forces them to work as non-agricultural labourers to

supplement their meager incomes. The further details can be referred to from the table.

Table 4.3: Distribution of Work Force According to Main and Secondary Occupation of Sample Household.

(No. of workers)

Occupation	Main occupation				Secondary occupation			
	Marginal	Small	Medium	All	Marginal	Small	Medium	All
Agriculture including horticulture	56.00 (84.85)	31 (86.11)	32 (84.21)	119 (85.00)	7 (25.00)	24 (80.00)	27 (81.82)	58 (63.74)
Agri. labour	7 (10.60)	-	-	7 (5.00)	14 (50.00)	6 (20.00)	3 (9.09)	23 (25.27)
Non-agri. Labour	-	-	-	-	7 (25.00)	-	-	7 (7.69)
Service	3 (4.55)	4 (11.11)	6 (15.79)	13 (9.29)	-	-	-	-
Business	-	1 (2.78)	-	1 (0.71)	-	-	3 (9.09)	3 (3.30)
Total workers	66 (100.00)	36 (100.00)	38 (100.00)	140 (100.00)	28 (100.00)	30 (100.00)	33 (100.00)	91 (100.00)

Note: Figures in parenthesis are the percentage to total

4.3 Education Status

Details of educational status presented in Table 4.4 reveal that at overall level the percentage of literates is 91 per cent. Among individual categories of the literacy percentage was 97 per cent for small farmers followed by medium (94 per cent) and marginal (86 per cent). Further table shows that 48 per cent of the persons had formal education up to primary class followed by middle 18.77 per cent, graduate 8 per cent matriculation 6.50 per cent and only one percent each in post graduate and diploma. Hence the level of education is satisfactory in the study area as only about 8 per cent of the farmer are illiterates and the percentage of non school going children is also 8 per cent which is a disturbing fact. The level of education among marginal

category of farms is comparatively poor. It is the small category of farms, which have shown higher level of education.

Table 4.4: Education Status of Sampled Households.

(No. of persons)

Education status	Marginal	Small	Medium	All
Infant (upto 5 yrs.)	14 (10.68)	5 (6.17)	4 (6.15)	23 8.30)
Illiterate	16 (12.21)	2 (2.47)	5 (7.69)	23 (8.30)
Upto primary	76 (58.02)	33 (40.74)	24 (36.92)	133 (48.02)
Middle	14 (10.68)	22 (27.16)	16 (24.62)	52 (18.77)
Matriculation	6 (4.58)	8 (9.88)	4 (6.15)	18 (6.50)
Graduate	5 (3.83	10 (12.35)	6 (9.23)	21 (7.59)
Post graduate	-	1 (1.23)	2 (3.08)	3 (1.08)
Technical education	-	-	-	
Diploma	-	-	4 (6.15)	4 (1.44)
Degree	-	-	-	-
Others	-	-	-	-
Total	131 (100.0)	81 (100.0)	65 (100.0)	277 (100.0)
Literacy percentage	86.32	97.36	93.44	91.01

Note: Figures in parenthesis are the percentage to total.

4.4 Holding Size and Land Utilization Pattern

Land holding size and utilization pattern of land has been presented in Table 4.5 and 4.6 respectively. In Table 4.5 it may be seen that at overall level holding size is 1.42 hectare, which was 0.54, 1.27 and 3.92 hectares among marginal, small and medium farms respectively. This shows size of

holding among different categories of farms may not be economic size of holding except for medium farms.

Table 4.5: Holding Size of Sample Orchardist

(Total area under category in ha.)

Particulars	Marginal	Small	Medium	All
Owned land	14.28 (0.54)	17.84 (1.27)	29.28 (3.92)	71.40 (1.42)
Leased in (+)	-	-	-	-
Leased out (-)	-	-	-	-
Total	14.28 (0.54)	17.84 (1.27)	39.28 (3.92)	71.40 (1.42)

Note: Figures in parenthesis are area per farm in hectare.

Land utilization pattern in Table 4.6 reveals that out of 71.24 hectares of sample household's total land 62 per cent was occupied by orchards followed by ghasni (25 per cent) and field crops (about 11 per cent). Due to higher percentage area under orchard the cropping intensity has been reduced to 118 per cent that varied between 112 to 122 per cent among different category of farms. This shows household economy of the study area is based on horticulture sector.

Table 4.6: Land Utilization Pattern of Sample Household.

(Area in ha.)

Particulars	Marginal	Small	Medium	All
Net area sown under field crops	4.12 (28.85)	2.00 (11.21)	1.92 (4.91)	8.04 (11.29)
Orchard area	8.96 (62.75)	14.00 (78.48)	21.28 (54.40)	44.24 (62.10)
Fallow land	-	-	0.96 (2.45)	0.96 (1.35)
Ghasni	1.20 (8.40)	1.68 (9.42)	14.96 (38.24)	17.84 (25.04)
Forest	-	-	-	-
Area put to non-agri. Uses	-	0.16 (0.90)	-	0.16 (0.22)
Total area	14.28 (100.0)	17.84 (100.0)	39.12 (100.0)	71.24 (100.0)
Gross cropped area	7.00	5.68	4.96	17.64)
Area under inter cropping	0.16	1.68	0.88	2.72
Cropping intensity (% without orchard)	163.55	154.00	177.14	163.94
Cropping intensity (% including orchard)	122.91	112.50	113.10	118.40

Note: Figures in parenthesis is the percentage to total

4.5 Cropping Pattern

Though more than 62 per cent of the total area falls under orchards yet the field crops have its own identity for measuring dependency on orchard. The cropping pattern of the field crops has been presented in Table 4.7. It may be seen that in all per farm area under field crops is 0.36 hectare out of which 30 per cent each shared by maize and vegetables and about 25 per cent is under wheat in both the seasons other crops like potato, barley and condiments have shown insignificant area. Category wise picture shows that comparatively marginal and medium farms are putting slightly higher area under cereal crops as compared to vegetable crops. Whereas small farmers have higher area under vegetable (cash crops) crops. This shows small farmers are moving at a faster speed towards the economic development by putting higher percentage of area under vegetable crops by shifting area

under maize towards vegetable crops. Table also indicates that inter cropping is also present at about 15 per cent of the gross cropped area and number of plants.

Table 4.7: Cropping Pattern of Sample Household.

(Area in hect./per farm)

Crops	Marginal	Small	Medium	All
Maize	0.09 (33.72)	0.08 (19.72)	0.19 (38.71)	0.11 (30.61)
Potato	0.05 (16.57)	-	-	0.02 (6.58)
Wheat	0.07 (25.14)	0.12 (29.57)	0.10 (20.97)	0.09 (25.40)
Barley	-	0.02 (4.23)	0.06 (12.90)	0.02 (4.99)
Vegetables	0.05 (19.43)	0.19 (46.48)	0.14 (27.42)	0.11 (30.38)
Condiments	0.01 (5.14)	-	-	0.01 (2.04)
Total	0.27 (100.00)	0.41 (100.00)	0.50 (100.00)	0.36 (100.00)

Note: Figures in parenthesis are the percentage to total.

4. 6 Area Under Different Fruits

Area under different fruits among sample farmers has been presented in Table 4.8 wherein it may be seen that per farm area under different bearing fruits was 0.77 hectare out of which 92 per cent was under peach remaining 8 per cent under plum, apple and pear. The area under non-bearing fruits was 0.11 hectare per farm. The area under non-bearing stage indicates future scope and growth of orchards in the region. The marginal farms have only peach fruits whereas, small and medium farmers were also raising apple. It was found that with the increase in holding size the area under fruits also increased especially of area under peach.

Table 4.8: Area Under Different Fruits.

(Area in hect.)

Name of fruits	Marginal		Small		Medium		All	
	Non-bearing	Bearing	Non-bearing	Bearing	Non-bearing	Bearing	Non-bearing	Bearing
Peach	0.03 (100.00)	0.31 (100.00)	0.12 (80.00)	0.74 (87.06)	0.19 (73.08)	1.70 (71.40)	0.09 (81.82)	0.71 (92.21)
Plum	-	-	-	-	-	0.12 (6.45)	-	0.02 (2.60)
Apple	-	-	0.03 (20.00)	0.11 (12.94)	0.07 (26.92)	-	0.02 (18.18)	0.03 (3.90)
Pear	-	-	-	-	-	0.04 (2.15)	-	0.01 (1.29)
Total	0.03 (100.00)	0.31 (100.00)	0.15 (100.00)	0.85 (100.00)	0.26 (100.00)	1.86 (100.00)	0.11 (100.00)	0.77 (100.00)

Note: Figures in parenthesis are the percentage to total.

Table 4.9 shows that at over all level there are 369 plants per farm out of which about 95 per cent were peach plants. Other fruits like plum, apple and pear were present in insignificant number among different categories. There were about 79 plants per farm out of which 90 per cent were of peach. Further table shows that with the increase in holding size number of peach plants also increased.

Table 4.9: Fruit-wise Number of Plants Per Sample Household

Name of fruits	Marginal		Small		Medium		All	
	Non-bearing	Bearing	Non-bearing	Bearing	Non-bearing	Bearing	Non-bearing	Bearing
Peach	23.08 (100.00)	179.42 (100.00)	82.14 (86.46)	111.43 (73.24	180.00 (90.00)	1125.00 (96.57)	71.00 (90.33)	349.50 (94.74)
Plum	-	-	-	-	-	25.00 (2.14)	-	5.00 (1.36)
Apple	-	-	12.86 (13.54)	40.71 (26.76)	20.00 (10.00)	-	7.60 (9.67)	11.40 (3.09)
Pear	-	-	-	-		15.00 (1.29)	-	3.00 (0.81)
Total	23.08 (100.00)	179.42 (100.00)	95.00 (100.00)	152.14 (100.00)	200.00 (100.00)	1165.00 (100.00)	78.60 (100.00)	368.90 (100.00)

Note: Figures in parenthesis are the percentage to total.

4. 7 Stage wise Area And Number of Plants

Directorate of Horticulture has already classified production stages of various fruits. In case of peach area and number of plants as per their production stages i.e. non-bearing production stage (1-6 years) increasing production stage (7-10 years). Constant production stage (11-16 years) and decreasing production stage (17 & above years) as presented in Table 4.10. In this table it may be seen that at overall level of various stages there are 518 plants, which covered 0.80 hectare of land per farm. Percentage of area and plants in non-bearing stage only 10 and 11 per cent respectively. Whereas it vary into 45 and 44 per cent at increasing production stage respectively. The similar proportion of area and number of plants may be observed in constant stage of production. No plantation was observed to be in decreasing stage of production. In case of marginal farmers the area and number of plants at increasing production stage were 61.77 and 63.64 per cent respectively and were highest. The idea further strengthened by observing the highest rate of percentage of area and number of plant (60% each) in constant stage of medium farmers which ultimately reflects that medium farmers have started raising peach orchard earlier than marginal farmers. In other words medium farmers have started raising peach plants since last 16 years whereas, marginal and small farmers diversified their cropping pattern towards orchard since last 10 years back hence, it took six years to these categories to turn towards horticulture. It may be concluded that raising of peach orchards is a viable preposition which has induced all category of farms towards horticulture sector.

Table 4.10: Stage-wise Number of Area and Plants Under Peach Among Different Size of Orchards

(Area and No. of Plants per Household)

Production stages	Marginal		Small		Medium		All	
	Area	No. of plants	Area	No. of plants	Area	No. of plants	Area	No. of plants
1-6 yrs. (Non-bearing prod. stage)	0.03 (8.82)	23.08 (11.40)	0.12 (13.95)	82.14 (14.20)	0.13 (6.87)	110 (8.77)	0.08 (10.00)	57 (11.00)
7-10 yrs. (increasing prod. Stage)	0.21 (61.77)	128.27 (63.64)	0.45 (52.33)	302.14 (52.22)	0.62 (32.80)	395 (31.47)	0.36 (44.00)	230.30 (44.43)
11-16 yrs. (constant prod. Stage)	0.10 (29.41)	51.15 (25.26)	0.29 (33.72)	194.29 (33.58)	1.14 (60.32)	750 (59.76)	0.36 (44.00)	231 (44.57)
17 & above decreasing prod. stage	-	-	-	-	-	-	-	-
Total	0.34 (100.00)	202.50 (100.00)	0.86 (100.00)	578.57 (100.00)	1.89 (100.00)	1255 (100.00)	0.80 (100.00)	518.30 (100.00)

Note: Figures in parenthesis are the percentage to total.

CHAPTER - V

ECONOMICS OF PEACH PRODUCTION

The present chapter, deals with the initial cost of plantation and maintenance cost of different age group of peach orchards by different categories of farmers. The marketing cost and net Returns have also been estimated.

5.1 Initial Costs of Plantation

The initial cost of plantation of peach orchards in the Rajgarh area of Sirmour district has been estimated to be Rs 37,337 per hectare. (Table 5.1). Out of the total initial cost of plantation of peach orchard on average farm, the variable and fixed costs accounts for 80 and 20 percent respectively. The major component of fixed cost is observed to be rental value to own land, which accounted for 19 percent of the total initial cost of plantation. Out of total variable cost, labour alone accounts for more than 37 percent of total initial cost of plantation. The share of material cost is estimated to be more than 39 percent of the total initial cost.

Table 5.1: Initial Costs per Planted Hectare of Peach orchard of Rajgarh Area of Himachal Pradesh.

Cost components	Unit	Price or Cost/Unit (Rs)	Quantity	Value or costs (Rs)
A Variable Costs				
(i) Labour used				
Land Clearing Development	Mandays	60	17	1020
Digging of pits	Pit	12	588	7056
Filling of Pits	Pit	3	588	1764
F.Y.M. and Fertilizer Applications	Mandays	60	15	900
Plant Protection	Mandays	60	8	480
Planting and Plant Support	Pit	2.50	588	1470
Irrigation	Plant	2.00	588	1176
Total Labour Use				13866
(ii) Materials Used				
Plant Material Including Transportation	Plant	10	588	5880
F.Y.M.	Plant	4	588	2352
Fertilizer and other Materials	Pit	5	588	2940
Plant Protection	Plant	5	588	2940
Miscellaneous	Ha.	500	1	500
Total Material	-	-	-	14612
(iii) Interest on Working Capital	Ha.	10%	For 6 months	1424
Total Variable Costs	Ha.	-	-	29902
B Fixed Cost		-	-	
Land Revenue and Taxes	Ha.	-	1	23
Depreciation (Machinery Equipments)	Ha.	-	1	262
Rental Value of Owned Land	Ha.	-	1	7150
Total Fixed Cost	Ha.	-	1	7435
Total cost (Fixed + Variable)	Ha.	-	1	37337

5.2 Maintenance Cost and returns from peach on Marginal Farms

In case of peach, the commercial production starts the age of 7 years and the productive life is about 16 years. The details of annual maintenance cost of 0-6, 7 to 10, 11-16 and above 17 years peach orchard on marginal size of farm have been given in table 5.2. The average maintenance cost of non-bearing peach orchard were is Rs 22017 per ha. While the same for 7-10 and 11-16 years orchards were Rs 81739 and Rs 81926 per ha. Respectively. The per ha. Variable cost has positive relation with farm size. The major component of fixed costs was prorated establishment cost, which accounted for 65 percent of the total maintenance cost. The marketing cost varied with production. The peach orchards were viable financial preposition and net returns were Rs 23,331 per hectare for marginal category of farms.

Table: 5. 2 Maintenance Cost and Returns from Peach on Marginal Farm in Sirmour District of Himachal Pradesh.

(Rs per hectare)

Cost Component	0-6 (yrs.)	7-10 (yrs)	11-16 (yrs)	17 & above	All bearing
A Variable Cost					
(a) Labour Used:					
Preparation and Maintenance of Basins	1350	1390	1440	-	1405
Interculture	560	585	610	-	592
F.Y.M. & Fertilizer Applications	1380	1430	1490	-	1448
Plant Production	840	920	1010	-	947
Pruning	2160	2310	2400	-	2337
Others	230	250	290		262
Total Labour Used	6520	6885	7240	-	6991
(b) Material Used	-	-	-	-	-
F.Y.M.	2727	3186	2494	-	2973
Fertilizer	2168	3293	3160	-	3254
Plant Production	2273	3071	2399	-	2864
Miscellaneous	200	240	290		255
Total Material Cost	7368	9790	8343	-	9346
(ii) Harvesting Cost	-	-	-	-	-
Picking	-	3293	4213	-	3575
Assembling	-	1102	1452	-	1209
Total Harvesting Cost	-	4395	5665	-	4784
(iii) Interest on Working Capital	694	1053	1062	-	1056
Total Variable Cost	14582	22123	22310	-	22177
B Fixed Cost	-	-	-	-	-
Land Revenue and Taxes	23	23	23	-	23
Depreciation on Implement, Building etc.	262	262	262	-	262
Rental Value Own Land	7150	7150	7150	-	7150
Prorated Establishment Cost	-	52181	52181	-	52181
Total Fixed Cost	7435	59616	59616	-	59616
Total Cost (Variable + Fixed)	22017	81739	81926	-	81793
Marketing Cost	-	60118	76725	-	65215
Marketing + Production Cost	-	141857	158651	-	147008
Gross Returns	-	157025	200403	-	170339
Net Returns	-	15168	41752	-	23331

5.3 Maintenance Cost and Returns from Peach on Small Farms

The details of annual maintenance cost, marketing cost and gross returns for different stages of production have been presented in Table 5.3. The average maintenance cost of non-bearing peach was found to be Rs 22618 per ha. Which was almost same as that of marginal farms. In increasing production stage (7-10 years) the maintenance cost was 81165 per ha. in which variable cost accounted for more than 26 percent. About the same proportion of cost was observed on the constant stage of production. Variable cost increased with the age of plant. In total maintenance cost, prorated establishment cost was the main constituent which accounted for more than 70 percent of the total maintenance cost. On small farms peach was viable and average net returns worked out to be Rs 28371 per ha. which were Rs 16172 for 7-10 year old orchards and Rs 47971 per ha. for 11-16 year old orchards.

Table: 5. 3 Maintenance Cost and Returns from Peach on Small Farm in Sirmour District of Himachal Pradesh.

(Rs per hectare)

Cost Component	0-6 (yrs.)	7-10 (yrs)	11-16 (yrs)	17 & above	All bearing
A Variable Cost					
(a) Labour Used:					
Preparation and Maintenance of Basins	1360	1380	1430	-	1399
Interculture	570	590	625	-	603
F.Y.M. & Fertilizer Applications	1410	1425	1470	-	1529
Plant Production	850	890	1015	-	938
Pruning	2170	2330	2420	-	2365
Others	250	260	280		268
Total Labour Used	6610	6875	7240	-	7102
(b) Material Used	-	-	-	-	-
F.Y.M.	2440	3077	2811	-	2973
Fertilizer	2085	2974	3879	-	3324
Plant Production	3125	2911	5475	-	3904
Miscellaneous	200	250	280		262
Total Material Cost	7850	9212	12445	-	10463
(ii) Harvesting Cost	-	-	-	-	-
Picking	-	3305	4560	-	3791
Assembling	-	1131	1547	-	1292
Total Harvesting Cost	-	4436	6107	-	5083
(iii) Interest on Working Capital	723	1026	1289	-	1132
Total Variable Cost	15183	21549	26981	-	23780
B Fixed Cost	-	-	-	-	-
Land Revenue and Taxes	23	23	23	-	23
Depreciation on Implement, Building etc.	262	262	262	-	262
Rental Value Own Land	7150	7150	7150	-	7150
Prorated Establishment Cost	-	52181	52181	-	52181
Total Fixed Cost	7435	59616	59616	-	59616
Total Cost (Variable + Fixed)	22618	81165	86597	-	83396
Marketing Cost	-	60384	63482	-	69337
Marketing + Production Cost	-	141549	170079	-	152733
Gross Returns	-	157721	218050	-	181104
Net Returns	-	16172	47971	-	28371

5.4 Maintenance Cost and Return from Peach on Medium Farms

The details of annual maintenance cost, Marketing cost and gross returns for medium category of farms have been presented in table 5.4. The average annual maintenance cost of non-bearing peach was worked out to be Rs.22643 per ha. During increasing production stage (7-10 year) the maintenance cost was Rs. 81233 per ha. in which variable cost accounted for more than 26 percent. About the same proportion of costs was observed during the constant stage of production. A quite different trend was observed on medium farms as the variable cost were higher on increasing production stage than the constant stage. This was because of lower rate of F.Y. M. & plant production material applied in constant stage at overall level. In the maintenance cost, prorated establishment cost was the main item which accounted for more than 74 percent of the total maintenance cost. On medium farms net returns were in negative a loss of Rs 5138 per ha. This is because of the low productivity of peach as compared to marginal and small farms.

Table: 5. 4 Maintenance Cost and Returns from Peach on Medium Farm in Sirmour District of Himachal Pradesh.

(Rs per hectare)

Cost Component	0-6 (yrs.)	7-10 (yrs)	11-16 (yrs)	17 & above	All bearing
A Variable Cost					
(a) Labour Used:					
Preparation and Maintenance of Basins	1335	1380	1450	-	1425
Interculture	550	580	615	-	603
F.Y.M. & Fertilizer Applications	1390	1420	1480	-	1459
Plant Production	835	925	1005	-	976
Pruning	2170	2325	2415	-	2383
Others	225	250	250		250
Total Labour Used	6505	6880	7215	-	7096
(b) Material Used	-	-	-	-	-
F.Y.M.	2419	3061	2684	-	2817
Fertilizer	2636	2966	3252	-	3151
Plant Production	2714	4425	3221	-	3645
Miscellaneous	210	250	280	-	269
Total Material Cost	7979	10702	9437	-	9882
(ii) Harvesting Cost	-	-	-	-	-
Picking	-	2261	2032	-	2112
Assembling	-	745	677	-	701
Total Harvesting Cost	-	3006	2709	-	2813
(iii) Interest on Working Capital	724	1029	968	-	989
Total Variable Cost	15208	21617	20329	-	20780
B Fixed Cost	-	-	-	-	-
Land Revenue and Taxes	23	23	23	-	23
Depreciation on Implement, Building etc.	262	262	262	-	262
Rental Value of Own Land	7150	7150	7150	-	7150
Prorated Establishment Cost	-	52181	52181	-	52181
Total Fixed Cost	7435	59616	59616	-	59616
Total Cost (Variable + Fixed)	22643	81233	79945	-	80396
Marketing Cost	-	47243	46384	-	46687
Marketing + Production Cost	-	128476	126329	-	127083
Gross Returns	-	123397	121153	-	121945
Net Returns	-	-5079	-5176	-	-5138

5.5 Maintenance Cost and Return from Peach on Overall Average Farm.

The details of annual maintenance cost marketing cost and gross have been presented in Table 5.5 for overall sample. The average maintenance cost of non bearing peach orchard was worked out to be Rs 22492 per ha. which was very near to the marginal, small and medium farms. In the maintenance cost of non-bearing peach, variable cost accounted for more than 66 percent. But in case of bearing stage fixed cost accounted more than 73 percent this is because of higher prorated establishment cost. Peach production was found to be the economically viable and at overall level bearing orchard provided a net returns of Rs 10845 per ha. which at different production stages were Rs 8565 per ha. during increasing production stage and Rs 13143 per ha. during constant stage of production. The variable cost was observed to increase with the age of plant.

Table: 5. 5 Maintenance Cost and Returns from Peach on Medium Farm in Sirmour District of Himachal Pradesh.

(Rs per hectare)

Cost Component	0-6 (yrs.)	7-10 (yrs)	11-16 (yrs)	17 & above	All bearing
A Variable Cost					
(a) Labour Used:					
Preparation and Maintenance of Basins	1349	1383	1449	-	1413
Interculture	561	585	608	-	596
F.Y.M. & Fertilizer Applications	1396	1424	1479	-	1451
Plant Production	842	911	1007	-	958
Pruning	2167	2322	2414	-	2367
Others	237	253	273		262
Total Labour Used	6552	6878	7225	-	7047
(b) Material Used	-	-	-	-	-
F.Y.M.	2499	3105	2713	-	2910
Fertilizer	2294	3069	3379	-	3222
Plant Production	2792	3480	3610	-	3544
Miscellaneous	203	250	281	-	265
Total Material Cost	7788	9904	9983	-	9941
(ii) Harvesting Cost	-	-	-	-	-
Picking	-	2943	2898	-	2920
Assembling	-	984	968	-	976
Total Harvesting Cost	-	3927	3866	-	3896
(iii) Interest on Working Capital	717	1035	1053	-	1044
Total Variable Cost	15057	21744	22127	-	21928
B Fixed Cost	-	-	-	-	-
Land Revenue and Taxes	23	23	23	-	23
Depreciation on Implement, Building etc.	262	262	262	-	262
Rental Value of Own Land	7150	7150	7150	-	7150
Prorated Establishment Cost	-	52181	52181	-	52181
Total Fixed Cost	7435	59616	59616	-	59616
Total Cost (Variable + Fixed)	22492	81360	81743	-	81544
Marketing Cost	-	55787	58864	-	57315
Marketing + Production Cost	-	137147	140607	-	138859
Gross Returns	-	145712	153750	-	149704
Net Returns	-	8565	13143	-	10845

CHAPTER – VI

GENERAL FEATURES OF THE MARKETS

6.1 General:

The present study was assigned by the Directorate of Horticultural, Govt. of H.P. Nav Bahar, Shimla to the Agro-Economic Research Centre, H.P. University, Shimla in order to study the marketing activities in the selected markets viz. Union Territory Chandigarh, Azadpur Subzi Mandi in New Delhi and Mumbai. Delhi is the main market for peach of Himachal but in Bombay a remunerative prices were offered to producers. Therefore, Mumbai market is specially selected as future market for Himachal Peach. The Himachal Peach is also sent to other markets but due to lack of finance and time these markets have not been included in the present study. All the markets included in the present study are regulated markets.

The following are the correspondence addresses for the authorities of above markets who are responsible for normal functioning of these markets.

1. Secretary
   Market Committee
   Grain Market, Sector- 26
   Chandigarh
   Phone – 0172-770590

2. Shri Sudhir Mahajan
   Secretary
   Agricultural produce Market Committee
   Azadpur, New Delhi
   Phone 011-7435584, 7115584
   Fax – 011-7131149

3. Secretary
   Mumbai Agricultural Produce Market Committee
   Central Building, Sector – 18
   Vashi Hari Mumbai – 400703
   Telephone 012-7682416
   EPABX 012-7665011505
   Fax – 012-91-22-7682507

6.2 Chandigarh Market

Chandigarh ranks 34 among the states and union territories of India with a population of 900 thousand representing 0.09 percent of the total population of the Indian Union. It covers and area of 114 sq. km. The density of population is next only to Delhi with the figure of 7903 persons per sq. km. The urban population living in the town of Chandigarh and Manimajra make up more than 90 per cent of the total population. The rural population lives on the periphery of the city. Wholesale fruit market at Chandigarh is situated in sector – 26 which is located on Madhya Marg. This way subzi Mandi is well connected with Chandigarh Kalka road. Being near to industrial area of Chandigarh where cold stores are situated, traders find it convenient to transfer fruit from Mandi to cold stores or back, in order to meet out the situation of price fluctuations. Agricultural Produce Market Committee is also operating in this Mandi and its office is situated, in the grain market Subzi Mandi is laid in a rectangular fashion, on the three sides of which are double story shops. In the centre there is a rectangular shed with raised platform. Around this platform is a wide metalled road.

6.3 Delhi Market

Being capital of the country, apart from permanent inhabitants, the floating population accounts for a sizeable proportion. Residents of this city are mainly engaged in business and government services and are drawn from all parts of the country. This hetero generous group of population demand all kinds of fruits and vegetables for their daily consumption. The population of Delhi is 13782 thousand representing 1.34 per cent of the total population of the Indian Union. The density of population is highest in the country with the figure of 9294 persons per sq. km.

The Fruit and Vegetable Market, popularly known as Azadpur Mandi, subzi Mandi or Delhi Mandi is situated on Grand Trunk Road connecting Haryana in the north-west and Uttar Pradesh in the north-east. The market is connected with all parts of Delhi and New Delhi by metalled roads and with all parts of India both by road and rail. A railway station on the Panipat Delhi line viz. New Azadpur is located in the market. The scale of activity recorded at market and the corresponding volume through may well establish its claim of being Asia's largest fruit and vegetable market. The location of this Mandi with respect to various important places of Delhi/New Delhi have been presented in the following level.

Place	**Approximate distance from subzi mandi Azadpur**
Ajmalkhan Road	9 km.
Ajmeri gate	11 km.
Central Secretariat	16 km.
Cannaught Place	13 km.
Daryaganj	12 km.
Delhi junction	9 km.
Gole market	12 km.
I.N.A.	25 km.
Kamla Nagar	5 km.
Kashmirigate	8 km.
Kalkaji	29 km.
Guru Govind Singh marg (Kings way camp)	5 km.
Lajpat Nagar	24 km.
Lawrance Road	6 km.
New Delhi Rly station	11 km.
Pahar ganj	12 km.
Patel Nagar	13 km.
R.K. Puram	18 km.
Shakti Nagar	5 km.
Tilak Nagar	13 km.

6.4 Mumbai Market

The wholesale market for sale of fruits in Bombay is in Vashi, Navi Mumbai, the market is specialized fruit market as well as a general purpose market. It consist of various divisions each of which is meant for a particular line of business one division is meant for onion-potato market. The second for sugar, dry fruits, species & condiment etc. market third for food grains, pulses & oil and oilseeds market, fourth for fruit market and fifth for vegetables. The total area reserved for APM complex at Vashi Navi Mumbai is 122 hectare with 3707 of galas/shop-cum-godown and four auction halls and two warehouses. The market committee has codependent police station for complex, restaurants and canteens, post office, telecommunication centres, EPBAX system, farmers rest house, dispensary, sulabh toilet blocks weigh bridges, independent ESRS, and GSRs etc.

6.5 Objectives of the Market Regulation

Growers of agricultural commodities get a small proportion of the consumer's rupee and a major portion of it is usually shared by the intermediaries. Keeping in view the growers interests, markets were regulated and regulatory measures have been taken to help the growers mainly. The regulatory measures are:

(i) Provisions and maintenance of standard weights and measures.

(ii) Fixing reasonable handling charges for various services, loading, unloading, packing, weighting, commission etc.

(iii) Providing agricultural inputs like fertilizers, seed, bins and implements like sprayers etc. at cheaper rates.

(iv) Enforcement of open auction method of sale for the commodities sold in the market yard.

(v) Collection and dissemination of in formations regarding all matters relating to crop statistics and marketing in respect of the various agricultural products.

(vi) Providing comforts and facilities such as parking accommodation, water for persons and animals coming or being brought to market.

(vii) Construction & repair of link roads, culverts & bridges etc.

(viii) Imparting education in marketing or in production of agricultural produce.

(ix) Provision of electricity in the market yards.

6.6 Regulation of Market

The technology breakthrough in Indian agriculture has brought about spectacular increase in yield levels. This has generated new problems of marketing for which adequate attention has not been paid even though it is universally recognized that the solution of these problems is a precondition for agricultural prosperity,

The movement of each product from the farm to the ultimate consumer plays a crucial role in determining the price for the farmer. Unless marketing improves, no incentive to increase production will attract the orchardist. This is all the more important in the case of perishable, which cannot be stored for long period. In such cases the speed as well as efficiency of marketing operations is crucial in determining profits of the product on the one hand and the level of satisfaction of the consumer on the other.

The marketing costs are shared between the producer and the final consumer. While all traditional charges/costs market fees etc. are mandatory, in some markets some other charges like rural development fund etc. seems to have become an additional burden. No doubt, under the market regulation acts, in most of the places better market yards have been

provided and some employment has also been generated, but the very purpose of regulation has not yet borne the desired fruits, for which strict vigilance and sincere physical efforts are essential.

6.7 Physical Facilities Available in the Market

The physical facilities which are common in regulated market are classified as market yard, suitable space for auction, covered shed for temporary storage, storage, sanitation, boarding/lodging, transportation, bank, post office, railway station and bus stand. All the basic amenities are available in the market under study except railway station in Chandigarh. The details regarding facilities available in the market are presented in Table 6.1.

Table 6.1: Physical Facilities Available in the Selected Markets.

Name of physical facilities	Chandigarh	Delhi	Bombay
Market yard	X	X	X
Suitable space for auction	X	X	X
Covered shed for temporary storage	X	X	X
Storage	X	X	X
Sanitation	X	X	X
Boarding/lodging	X	X	X
Transportation	X	X	X
Bank	X	X	X
Post office	X	X	X
Railway station	X	X	X
Bust stand	X	X	X

Note: X = Indicate presence

Source: Market committee of respective market

6. 8 Market Intelligence Facilities

Table 6.2 shows the market intelligence facilities available in the selected market. Telephone, STD, market intelligence cell, post office and private

currior were available in Chandigarh, Delhi and Mumbai markets but telex is available only in Mumbai market and Fax is available in Delhi and Mumbai market

Table 6.2: Market Intelligence Facilities Available in the Selected Market.

Market intelligence facilities	Chandigarh	Delhi	Bombay
Telex	X	X	X
STD	X	X	X
Fax	X	X	X
Telephone	X	X	X
Market intelligence cell	X	X	X
Post office	X	X	X
Private corrier	X	X	X
Other	X	X	X

Note: X = Indicate presence

Source: Market committee of respective market

6. 9 Facilities Provided by Traders

Growers and dealers coming from distant places face no problem for night stay in any of the market under study. Commission agents or wholesalers generally feel happy to oblige their big clients by way of arranging for their boarding and loading. As per market rule commission agent are not allowed to charge commission from seller but in general practice it was noticed that commission agent charges commission both from buyers as well as sellers. Table 6.3 shows that boarding, lodging, storage, transportation, advance payment and market information etc. is provided to sellers in all the markets.

Through, the commission agent need to pay the full amount of sale to seller just after the sale is over, it was observed that in general practice the period of payment depends on mutual understanding or relationship between buyer and seller. The mode of payment is based on the decision of seller and can be cash, cheque or demand draft.

Table 6.3: Facilities Provided by the Traders in Selected Market

Facilities	Chandigarh	Delhi	Bombay
Boarding & lodging	X	X	X
Storage of fruit	X	X	X
Transportation of fruit	X	X	X
Advance payment	X	X	X
Market information	X	X	X
Mode of payment	X	X	X
- Cash	X	X	X
- Cheque	X	X	X
- Demand draft	X	X	X
- Any other	X	X	X

Note: X = Indicate presence

Source: Market committee of respective market

6.10 Working Hours

Normally, in the regulated Mandi the marketing hours are directed by market committee but in practice these can be fixed only with the cooperation of the local functionaries of the mandi. Committee uses to fix the working hours in consultation with unions of traders and no case of clash was observed in any of the market. Table 6.4 shows the working hours of different markets under study. Generally market transactions start in the morning and end at noon. The evening mandi are observed in all selected market this is because of the reason that traders generally functions as a mashakhor and transaction continues whole of the day especially at Chandigarh market. But in Delhi & Mumbai due to higher quantity of arrivals the evening function are essential. Each of the commission agents has a fixed place where he usually displays his commodities for sale.

Table 6.4: Working Hours of Selected Markets

Name of the market	Morning		Evening	
	From	To	From	To
Chandigarh	7.00 AM	11.00 AM	3.00 PM	8.00 PM
Delhi	6.00 AM	12.00 AM	3.00 PM	7.00 PM
Mumbai	6.00 AM	12.00 AM	3.00 PM	8.00 PM

Source: Market committee of the respective markets

6.11 Closing Days

It was observed during course of investigation that all the study markets closed weekly. No selected market was observed to have holidays on fortnightly or monthly basis. Table 6.5 indicates the holidays of each market under study. The table shows that Chandigarh market remains closed on every Monday while Delhi and Mumbai closed on Sunday. The other holidays are the 15th August and 26th January in all the markets whereas Diwali in Chandigarh and Diwali and Holi in Delhi & Mumbai market are included in addition to regular holidays.

Table 6.5: Holidays in the Selected Market

Holidays	Chandigarh	Delhi	Mumbai
Weekly	Monday	Sunday	Sunday
Fortnightly	-	-	-
Monthly	-	-	-
Other holiday	26th Jan., 15th August and Dipawali	26th Jan., Holi, 15th August and Dipawali	26th Jan., Holi, 15th August and Dipawali

Source: Market committee of the respective market.

6.12 List of Commission Agents Dealing with Peach in Chandigarh Market

In the Chandigarh market 130 commission agent were registered in which 16 commission agents also deal with peach. The name of firm, shops trade mark and telephone No. of office and residence are presented in Table 6.6.

Table 6.6: List of Firms Dealing with Peach in Subzi mandi, Sector – 26, Chandigarh.

Name of the firm	Shop No.	Trade mark	Telephone No. & Code 0172	
			Office	Residence
1.Himachal fruit agency	1	HFA	777272	656914
2.M/S J&K fruit agency	2	J & K	530244	560700
3.New Ashoka fruit Co.	3	AF/CDG	782285	570158
4.Guru Nank fruit agency	5	GNFA	771292,771274, 770958,781209	770662, 781951
5.Ahuja brothers	10	AB	781524,781371	562426, 581986
6.Thakur fruit traders	11	TFT	770766	657527, 656269
7.Hans fruit traders	12	HFT	781216	560949
8. Tek Chand, Raj Kumar Bajaj	13	TRB	770425	651180
9. H.K. fruit company	15	HK	381844	-
10. Jalaudhar fruit company	16	JFC	770727,780216, 782616,790866	560946,651655
11.Narula & sons	17	NS	771264, 279801	686048,656048
12.Mehta fruit traders	20	MFT	545506	-
13.Mangal Sain & Sons	22	MSS	780950,792950	576906,577108
14.Govind Ram Ashok Kumar	23	GAK	770961	563066
15.Shankar Fruit Traders	24	SFT	770484,790484	714384,773537
16.Mohan Singh Mehta & Sons	25	MSM	781204	730498

6.13 List of commission Agents Dealing with peach in Azadpur Subzi Mandi Delhi

In Delhi market there were 2236 registered commission agents. No licence for only fruit was issued by market committee but according to their behaviour/business fruit traders not deals with vegetable and in Delhi market due to huge arrivals (during the year 2001-200e about 1705466.6 tonnes fruit arrivals was recorded in the market) in fruits some forms were specialized in particular fruits. Accordingly 16 firms deals with peach. The details of each firm i.e. name of the firm, shop No. trade mark and telephone No. are given in table 6.7.

Table 6.7: List of Firms Dealing with Peach in Azadpur Agricultural Produce Market Committee Delhi

Name of the firm	Shop No.	Trade mark	Telephone No. & Code 0172	
			Office	Residence
1.OmPrkash, Naresh Kuar	A-990	SPN	7442159	-
2.Delhi Shimla fruit traders	B-165	DSF	7459548	-
3.Sri Ganesh apple company	B-212	SGAC	7245798	-
4.Harbans Raj, Bhagwan Rai Naruila	B-214	HB	7431295	-
5.Apple Grower marketing agency	B-215	AGMA	7431711,7413679	-
6.Hari & company	C-9	HXC	7452959	-
7.Mohinder Singh Satpaul Singh	C-19	LFC	7142344	-
8.New Krishna fruit company	C-28	KFC	7244237,7218110 ,7477662	7477922
9.K.M. enterprises	C-31	KXM	7408805,7116207	7456743,7216831
10.JAC enterprises	C-49	JAC	7143965,7245199 ,7413066	-
11 Laxmi fruit company	C-60	LFC	7232369,7244334	-
12. JCO traders	C-124	JCO	7234194,7215701 ,7137489	7471700,7471800 ,7070747
13. M/s Kuldarsh Rai & sons	C-540	KXS	7130007	3977293,3912206
14.Vijay fruit company	C-620	VGC	7136794,7113174	6478269,6443773
15.Gian Chand, Narain Dass	C-627	GN	7400566,7119036	7248616
16.Sharma fruit centre	D-398	SFC	7241814,7434291	-

6.14 List of Commission Agents Dealing with Peach Fruit in Vashi Market Mumbai

In Mumbai market fruit section is separate and commission agents and there were 1016 agents who dealt with fruit. Out of there only seven commission agents dealt with Himachal fruit. The details regarding forms i.e. name of the firm, shop No., trade mark and telephone No. etc. are given in Table 6.8.

Table 6.8: List of Firms Dealing with Peach in Agricultural Produce market Committee Vashi, Turbha Navi Mumbai.

Name of the firm	Shop No.	Trade mark	Telephone No. Code No.	
1. Dharam Dass Sons Fruits Pvt.Ltd.	F 48	DS	7801562	3630178, 3682494
2. Bhagwan Fruit Company	F-71,72,73	BFC	7801693	7706832
3. Ramchandra Dashrath Hande & Company	F-85,86,87, 106,107,108	RDC	7801402,7656387	7703792
4. Chandiram sons	F-96,97,98	CXS	7801416	7702197
5. Shujaudd in Merajuddin	F-119,120	SM	7668394,7660231	4015583
6. Hikmatullah Mohd Safi	H-563-564	HMS	7801470	3428508, 7704876
7. Krishin Jhule	H-649-650	KJ	7801551	7655350

CHAPTER - VII

MARKETING OF PEACH PRODUCTION

The marketing of fruit is a complex process and includes all the functions and processes involved in the movement of the produce from the growers to final consumers. The number and type of functions, the cost of performing these functions, the margins or profits of those who perform these functions and the competition in the trade all these vary from commodity to commodity, time to time and from place to place (AERC).* This chapter is divided broadly into four parts. Part Ist deals with preparation of produce for market, part IInd and IIIrd deal with marketing services and marketing channels/marketing functionaries and fourth with marketing margins.

7.1 Preparation of Produce for the Market

All goods produced, whether agricultural or otherwise have to be necessarily prepared for the market in a way that it can attract buyers in a better way. Fruit production is highly seasonal and geographically centered in areas that are often located far away from consumers. From producers view point an efficient marketing system is one which maximizes the net revenue for which the preparation starts from the orchard itself by producing fruits of as good quality as possible. The following stages are involved in preparation of produce for marketing.

7.1.1 Picking

Picking is the first and most important function in preparation of fruit for the market. The proper picking of fruit vitally affects their shelf life. It involves two aspects viz stage of maturity when the fruit should be picked and the method of picking. The right stage for picking which seems to be the

easiest requires the most Skillful decision. If the fruits reach the market in an over ripped condition, it will fetch lower price because of its low shelf life. On the other hand, unripe fruits that are much below the maturity stage will not be welcome as these lack the taste and vigor of properly ripened fruit. The stage of picking depends upon the time needed for marketing the fruit to reach its destination and the speed with which it attains maturity. The metabolic activities in fruits generally increase after picking. It is therefore, up to the orchardists to judge if a fruit picked at a particular stage of maturity can reach the market in best form or not. Farmers do not know the scientific methods of picking for a particular fruit but each grower is led by his own experience in the matter and it varies with variety and fruit.

Small orchardists generally pick the fruits with the help of their family members while large orchardists have to employ hired labour to help them in this task. Pre-harvest contractors generally engage casual labour for this purpose. Peaches are harvested when they are still hard. The can ripen well in storage or in transit optimum time of harvest of peach for full bloom is 101 +3 days. Probable duration of harvest is 12-14 July.

7.1.2 Assembling

Assembling of peach fruit require special skill because the skin of fruit is so delicate and hairy that after the fruit is picked from the tree, it puts in a picking basket or kilta. In the same container, the fruit are assembled in the orchard for sorting/grading and packing.

7.1.3 Grading

Grading is a process of sorting out the produce into different uniform lots in such a manner that the fruit within each lot have uniform quality characteristics. These characteristics may be of size, shape colour, flavour,

degree of ripeness etc. The main purpose of grading is to help the buyers to select the most suitable produce for the uses they have in mind and the price they can pay for. In case of Peach three grades are prevalent in Himachal Pradesh are as follows.

Table 7.1: Various size grades of Himachal Peach.

Grade	Fruit size	No. of layers	No. of fruits	Box size in (inches)
Special	55 to 65 mm & above	3	28-32	17x10x8
Grade -I	46 mm to 55 mm	4	35-38	Do
Grade-II	Below 46 mm	4	38-40	Do

While grading, the careful graders will sort out injured, bruised, diseased, discolored and blemished fruits separately. But in many cases it has been observed that the desired care is not taken and fruits of poorer quality are mixed with good ones. Generally, the growers put small and poor quality fruits at bottom of the container and few layers of better quality fruits are placed on the top of each container.

7.1.4 Packing

After grading, the fruit are packed in suitable containers. The type of containers used for a particular fruits generally depends on the type of fruit and the material available locally far the same. Packing means arranging of fruits in suitable containers in such a way that the produce is not damaged route and the consumers get good quality fruit at their place. The packing is to be done carefully so as the efforts put in picking and grading of fruit do not

go waste. Stone fruit like peach are brought to the market in boxes containing 8 to 10 Kg. of fruit.

7.2 Marketing Services

After the produce has been prepared for the market, the same has to be transported and at times stored for a better market (AERC).

7.2.1 Transportation

Like all other commodities, fruits and vegetables produced on commercial scale are not consumed in the producing areas itself. In such a situation, adding the place utility to the produce is important. This means that transportation plays an important role in the marketing of agricultural commodities. Fruits are perishable in nature and therefore, require quick transportation so that fruit may reach the market/consumers well in time and in good condition. This will lead to least wastage in transit and resulted into higher gains to the orchardists. The important modes of transport used by the peach growers of Himachal Pradesh are as follows:

(a) Manual Labour: This is an important mode of transport used for bringing the fruit from orchard to the road head or local assembling market. In the market the manual labour is used for loading and unloading of produce.

(b) Mules: Most of the growers used this mode from orchards to road head because peaches are grown in the interior area and main roads were far away from there.

(c) Bus Roofs: Some small farmers use this mode to bring their produce from assembling place to market or up to local assembling point. This is not very popular mode but for small quantity of produce this is good and cheap mode.

(d) Trucks: Trucks are the important mode of transport used by all type of growers and contractors . It was observed that stone fruits from Himachal to the desired markets are brought by trucks only.

7.2.2 Storage

Storage is an essential function of marketing which add time utility to the commodities. Storage means holding the produce in appropriate places till it moves to the next market/agency. The storage facilities also make it possible to take advantage of off-season when the prices are generally higher and higher net returns can be realized. Though fruits have demand through out the year but production is seasonal. The excessive supply at a particular point of time after the harvest results in gluts leading to low prices. This affects the producer's interest adversely.

In the absence of proper storage facilities, the producers are compelled to sell their produce immediately after harvest resulting in realization of low prices. Presently cold storage facilities are not available in the growing areas. However, its availability can be seen in consuming areas.

7.2.3 Financing

Farmers and pre-harvest contractors need finance to perform market function like picking, packing, grading, transportation and storage etc. Functionaries revealed that in fruit marketing, it is ones own arrangement of money, which enables him to carry on his business. Though the needy growers/sellers were reported to be getting loans from commission agents/wholesalers whom they patronize but this usually leads to the exploitation of farmers. Further the survey revealed that in all the markets no bank had any programmes to finance the fruit growers for post harvest management.

7.2.4 Distribution and Marketing Channels

Marketing is basically the process of movement of goods from producer to consumer at the desired time, place and form. In this process the fruit has to pass through more than one hand except when it is directly sold to consumer by the producer. In this chain various agencies like grower's pre-harvest contractors, wholesalers, retailers etc. are engaged. This chain of intermediaries/ functionaries is called the marketing channel. The following channels are generally used by fruit growers for marketing their produce.

1. Producer- Consumer
2. Producer- Forwarding Agent- Commission Agent- Wholesaler- Retailer- Consumer
3. Producer- Producers Co-operative- Wholesaler – Retailer - Consumer
4. Producer- Pre-harvest contractor – Commission Agent/ Wholesaler- Retailer – Consumer.
5. Producer-Wholesaler-(self as forwarding agent)- Retailer- consumer.
6. Producer- Commission Agent (self as forwarding agent) Wholesaler - Retailer- Consumer.
7. Producer- HPMC- Wholesaler-Retailer- Consumer.
8. Producer- Processing unit-consumers.

Among the eight channels listed above, the second channel is most important for plum.

7.3 Functionaries

7.3.1 Pre-harvest Contractors: The phenomena of selling the standing crop to contractors is common in peach growing areas of Himachal Pradesh as more than 70% of the sampled orchardist sold their crop to pre-harvest contractors.

7.3.2 Commission Agents/Wholesalers: During survey it was observed that in all the states under study viz. Chandigarh, Delhi and Mumbai generally the same firms acts both as commission agent and wholesaler. The basic difference between a commission agent and a wholesaler is that the former does not hold the title of the produce while the later purchases the commodity for resale, accepting the risks of spoilage, shrinkage, fluctuations in price etc. There is no sharp demarcation between the wholesalers and commission agents in all the markets under study. It was also observed that some wholesalers/commission agents also act as a retailer. Normally it is expected that a commission agent will sell the produce on behalf of the seller and charge a fixed percentage of the value of transaction from the seller/purchaser. But in practice, it was observed that the commission agent/wholesaler was performing something more than this. They (i) arrange for the night stay for sellers (ii) store produce on behalf of the seller for few days, if so desired (iii) advance loans to the sellers (iv) make payments to the seller.

7.3.3 Mashakhors: Mashakhors are the small wholesaler or big retailer who purchase fruits, and vegetables through commission agent and resell by negotiations the same to the retailers or such consumers who need relatively bigger quantities. It was observed that some small commission agents/wholesalers also act as mashakhors. On the arrival of fruit in the wholesale market many functionaries like porters, weighmen, brokers etc. help in marketing.

7.3.4 Method of Sales : Generally, open auction method of sale is practiced in all the markets under study. Under this method the bids are offered openly by the potential buyers and the highest bidder takes away the lot. This system is free from the major defects of the under cover system of sale. This system is prevalent in all the markets under study.

7.4 Market Charges and Price Spread

The objective of the producer is to maximize his returns for his produce while consumer wants the maximum satisfaction from his money. Both of them feel dissatisfied if neither of them is able to achieve his aim because of high share of intermediaries connecting the two. Generally, there is a wide gap between the price paid by the consumer and that received by the producer. For this purpose it becomes essential to ascertain charges of each agency involved in the marketing. The marketing charges in different markets bear no relation with each other these differ from state to state. But in the same state for different markets the charges are the same. The market charges are comparatively unimportant in the primary markets and therefore only secondary markets have been studied.

The market charges levied and margins of different intermediaries in different markets under study are discussed as follows:

7.4.1 Commission of the Commission Agent

The commission agents charge at the rate of 5 to 10 percent on face value of the produce sold in different markets. Such commission is chargeable from buyers only. The rate of commission differs from state to state. The prescribed rate of commission in Chandigarh is 5 percent while in Delhi it is eight percent and in Mumbai it is 10 per cent. Although, legally the commission can be charged only from buyers, but in actual practice commission was being charged from both buyers and sellers as presented in Table 7.2. The rate of commission also varied from seller to seller according to mutual understanding and the quantity sold. If orchardist gets loan from commission agent a higher rate of commission will be charged from them.

Table 7.2: Commission Charges Agent for Peach Fruit in Selected

(Percentage of sale proceed)

Name of the market	Prescribed commission		Actual commission	
	Payable by seller	Payable by buyer	Payable by seller	Payable by buyer
Chandigarh	-	5	5	5
Delhi	-	8	8	8
Mumbai	-	10	10	10

Source: Market Committee of respective market.

7.4.2 Market Fee

The commission agents are supposed to charge market fee from the purchaser ranging from 1 to 2 percent on the sale value of goods in different markets. This fee has to be deposited with market committee. The market fee is 2 percent in Chandigarh 1 percent each in Delhi Azadpur Mandi and Mumbai Agricultural Market Committee (Table 7.3).

Table 7.3: Market Fees Charged by Market Committee in Selected Market for Peach

(Percentage of sale proceed)

Name of the market	Prescribed commission		Actual commission	
	Payable by seller	Payable by buyer	Payable by seller	Payable by buyer
Chandigarh	-	2	-	2
Delhi	-	1	-	1
Mumbai	-	1	-	1

Source: Market Committee of respective market.

7.4.3 Other Charges

No other developmental charges etc. are charged in any of the markets under study.

7.4. 4 Loading Un-loading

A sum of Rs. 2 per box is charged from the seller as handling charges for each box to be sold in the different markets. This charge is levied on seller and is not approved by the market authorities.

7.4.5 Price Spread and Marketing Margins

Price spread is the difference between the price received by the orchardist and price paid by the consumer which comprises of cost of undertaking and rendering market services such as assembling grading, transporting, processing, wholesaling, retailing and the margins of the intermediaries. These also include the market charges, state tax etc. These margins and costs are influenced by the performance or efficiency of different marketing functionaries and in turn, influence the returns to the growers on the one hand and cost of produce to the consumer on the other. In order to increase the operational efficiency and minimize the cost, understanding the nature and extent of marketing margins, cost and price spread is essential.

7.4.6 Price Spread for Peach in Producing Area of Sirmour District in H.P.

The price spread/margins have been worked out for Chandigarh, Delhi and Mumbai markets. Table 7.4 shows that the per box marketing cost incurred by orchardist for peach and Table 7.5 indicates the marketing cost incurred by different functionaries. The proportionate share of different functionaries in consumer prices prevalent in different markets have been presented Table 7.6.

The major components of marketing cost are picking, grading, packing, packing material, transportation cost commission of commission agent, state tax and octroi etc. It may be observed from Table 7.4 that cost of marketing incurred by orchardist of Sirmour district was Rs.43.80, Rs.53.60 and Rs.90.12 per box for Chandigarh, Delhi and Mumbai markets respectively. The difference in these costs was mainly due to the difference in transportation cost and commission charges.

Table 7.4: Marketing Cost Incurred by Orchardist of Rajgarh in Marketing of Peach in Different Selected Markets.

(Rs. per box of 8kg.)

Cost items	Chandigarh	Delhi	Mumbai
1.Picking packing and grading	8.00 (18.26)	8.00 (14.93)	8.00 (8.88)
2. Packing material including box	18.00 (41.10	18.00 (33.58)	18.00 (19.97)
3.Carriage upto forwarding point	5.00 (11.41)	5.00 (9.33)	5.00 (5.54)
4.Transportation cost up to market	7.00 (15.99)	13.00 (24.25)	38.00 (42.17)
5.Commission of the commission agent	3.80 (8.67)	7.60 (14.18)	19.12 (21.22)
6.Misc. (State tax, loading, unloading, octroi etc)	2.00 (4.57)	2.00 (3.73)	2.00 (2.22)
Total marketing cost	43.80 (100.00)	53.60 (100.00)	90.12 (100.00)

Note: Figures in parenthesis are the percentage to total

Since peach fruit are fragile and need proper packing the packing cost of peach is high accounting for 16.80, 12.78 and 6.37 per cent of consumer price in Chandigarh, Delhi and Mumbai markets respectively. The transportation costs accounts for 6.53, 9.22 and 13.45 per cent in Chandigarh, Delhi and Mumbai market respectively. Though all the markets are officially regulated but still commission and fees are charged at higher than prescribed rates by intermediaries. The commission, fees and taxes account for 5.41, 6.81 and 7.47 per cent of the consumer price, in Chandigarh, Delhi and Mumbai markets respectively. All the intermediaries provide some services to the growers

The producer share in consumer rupee for peach has been worked out to be 30.05, 29.40 and 35.72 per cent in Chandigarh, Delhi and Mumbai markets respectively. In these markets the retailers margin on consumers rupee ranged between 11.66 per cent in Chandigarh to 11.88 per cent in Mumbai market. The producers realized highest return (Table 7.5) from peach of 8 kg. box in Mumbai market (Rs.100.88 per box) followed by Delhi (Rs.41.40 per box) and Chandigarh (Rs.32.20 per box)

Table 7.5: Producer Share and Marketing Margin of Himachal Peach in Different Selected Markets.

(Rs.per box of 8 kg.)

Cost items & prices	Chandigarh	Delhi	Mumbai
1. Net price received by growers	32.20	41.40	100.00
2. Expenses incurred by growers			
-Picking, grading & packing	8.00	8.00	8.00
- Packing material	18.00	18.00	18.00
- Carriage upto orchard to forwarding point	5.00	5.00	5.00
- Transportation cost upto market including handling & forwarding charges	7.00	13.00	38.00
- State tax, octroi, loading & unloading at destination and otherwise	2.00	2.00	2.00
- Commission of commission agent	3.80	7.60	19.12
- Sub Total	43.80	53.60	90.12
3. Whole sale price	76.00	95.00	191.00
4. Expenses incurred by wholesaler/ mashakhor			
- Fright/carriage including handling charges	2.00	2.00	2.00
- Market fees and commission of commission agent/ mashakhor	5.32	8.55	21.03
Sub Total	7.32	10.55	23.03
5.Mashakhor margin wholesaler margin	-	4.75	9.55
6. Wholesale price/ mashakhor sale price	83.32	110.30	223.58
7. Retailers expenses			
- Carriage & handling charges etc.	3.00	3.00	3.00
- Retailers losses @ 10 per cent	8.33	11.03	22.35
Sub Total	11.33	14.03	25.35
8. Retailers margin	12.50	16.54	33.53
9. Consumers price box	107.15	140.87	282.46
10. Consumers price per kg.	13.39	17.60	35.30

Table 7.6: Producer Share and Marketing Margin of Himachal Peach in Different Selected Markets.

(Percentage to consumer price)

Cost items & prices	Chandigarh	Delhi	Mumbai
1. Net price received by growers	30.05	29.40	35.72
2. Expenses incurred by growers			
-Picking, grading & packing	7.47	5.67	2.83
- Packing material	16.80	12.78	6.37
- Carriage upto orchard to forwarding point	4.66	3.56	1.77
- Transportation cost upto market including handling & forwarding charges	6.53	9.22	13.45
- State tax, octroi, loading & unloading at destination and otherwise	1.86	1.42	0.70
- Commission of commission agent	3.55	5.39	6.77
- Sub Total	40.87	38.04	31.90
3. Whole sale price	70.92	67.44	67.62
4. Expenses incurred by wholesaler/ mashakhor			
- Fright/carriage including handling charges	1.86	1.42	0.70
- Market fees and commission of commission agent/ mashakhor	4.97	6.07	7.45
Sub Total	6.83	7.49	8.15
5.Mashakhor margin wholesaler margin	-	3.37	3.38
6. Wholesale price/ mashakhor sale price	77.76	78.30	79.15
7. Retailers expenses			
- Carriage & handling charges etc.	2.79	2.12	1.06
- Retailers losses @ 10 per cent	7.78	7.83	7.91
Sub Total	10.57	9.95	8.97
8. Retailers margin	11.66	11.75	11.88
9. Consumers price box	100.00	100.00	100.00
10. Consumers price per kg.	100.00	100.00	100.00

CHAPTER – VIII

ARRIVALS AND WHOLESALE PRICES OF PEACH FRUITS

8.1 General

The information regarding prices and arrivals along-with other related facts is important for effective marketing strategy. Adequate, price and arrival information can very well safe guard the interest of producers against the temporal fluctuations in prices which ultimately are responsible for the quantum of returns to them and identifying the most suitable time for sending the produce to particular market. Keeping in view situations like absence of standardization of grading, variation in quality of fruit, variation in prices of the same fruit over a period of time or at the point of time the data was collected for the fair average quality fruit prices. The prices of perishable commodities like fruits are determined by the interaction of demand and supply conditions at particular time (A.E.R.C, 1979). The variations in the prices of fruits is effect of variation in the supply demand and state situation in the market (Saraswat, Sharma and Thakur 2002).

The most important markets for stone fruits produced in Himachal in general and that of Peach in particular are the market situated near the producing area but peach is also had demand in all over India and Mumbai is the potential market for peach and included the study along-with Delhi and Chandigarh. These markets were also recommended by the Directorate of Horticulture Government of Himachal Pradesh to be included in the study. The review of arrivals and prices data in these markets reveals that (i) The data on prices and arrivals of peach of different origins have not been maintained separately by any of the market committee, agriculture marketing board or any other agency in the markets under study. (ii) Peach being the minor commodity the grade wise data recording of arrivals and wholesale prices is lacking. At Mumbai market the data of arrivals and wholesale prices

are maintained monthly. (iii) Except Delhi in the selected market the market intelligence machinery has been observed to be having low interest in recording of proper data on prices and arrivals of peach. The behaviour of wholesale prices and arrivals of peach in selected markets for the period from 24th April 2000 to August 13, 2000, have been analysed and the same presented in the forthcoming paragraphs.

Peaches are harvested when they are still hard. Their quality improves after harvesting. These can ripen well in storage or in transit. The arrival of the peach fruit is from April to August in the market but its harvesting season vary in different producing states of Western Himalayan region. The market wise wholesale prices and arrival and their relationship between both of these and their indices have been presented in below mentioned order.

8.2 Chandigarh Market Weekly arrivals and wholesale prices of peach and their indices in Chandigarh market have been presented in Table 8.1. A perusal of the table reveals that the average arrival per week was 70.82 quintal and average wholesale prices were Rs. 951.47 per quintal in the market, wide fluctuations were seen in the arrivals i.e. 8 quintal each in 7th and 17th week to 283 quintal in 5th week. The main arrivals are from third to sixth weeks. The less fluctuation has been observed in wholesale prices as compared to the arrivals.

Table 8.1: Weekly Arrivals and Wholesale Prices of Peach Fruit and Their Indices in Chandigarh Market

Weeks	Arrival in Quintals	Weekly average wholesale prices per quintal	Indices of peach with mean as a base	
1	12	800	16.94	84.08
2	27	850	38.12	89.33
3	205	900	289.46	94.59
4	226	875	319.11	91.96
5	283	700	364.30	73.57
6	158	800	223.10	84.08
7	8	900	11.29	94.59
8	11	1000	15.53	105.10
9	17	1000	24.00	105.10
10	27	1100	38.12	115.61
11	58	950	81.89	99.84
12	16	750	22.59	78.82
13	22	850	31.06	89.33
14	34	1100	48.00	115.61
15	58	1200	81.89	126.12
16	34	1300	48.00	136.63
17	8	1100	11.29	115.61
Arithmetic mean as base	70.82	951.47	100.00	100.00

Note: 1st Week begins from 24th April 2000

Source: Agricultural Produce Market Committee Chandigarh

8.3 Delhi Market Delhi is the biggest among all the markets covered under study. The weekly arrivals and wholesale prices of peach and their indices have been presented in Table 8.2. The average weekly arrivals were recorded to be 2947.47 quintal per week and average wholesale prices were Rs.1183.23 per quintal. The lowest arrival was recorded in first week and the highest in 12th week. The highest price was recorded in the last week of the season. The higher than mean arrival were recorded from 8th week to 14th week. Higher fluctuations were noticed in arrivals than weekly whole prices.

Table 8.2: Weekly Arrivals and Wholesale Prices of Peach Fruit and their Indices in Delhi Market.

Weeks	Arrival in Quintals	Weekly average wholesale prices per quintal	Indices of peach with mean as a base	
1	15	1000	0.50	84.51
2	1367	1340	46.37	113.24
3	2442	1040	82.83	87.89
4	1796	1040	60.92	87.89
5	2199	1160	74.59	98.03
6	1882	960	63.84	61.13
7	1429	1416	48.47	119.67
8	3127	1218	106.07	102.93
9	3426	1175	116.21	99.90
10	7187	1180	243.79	99.72
11	6742	950	228.70	80.28
12	7149	1191	242.50	100.65
13	3851	770	130.63	65.07
14	4210	775	142.81	65.49
15	1593	1550	54.03	130.99
16	1606	1650	54.47	139.44
17	94	1700	3.18	143.67
Arithmetic mean as base	2847.94	1183.23	100.00	100.00

Note: 1st Week begins from 24th April 2000

Source: Agricultural Produce Market Committee Azadpur New Delhi.

8.4 Mumbai Market In Mumbai market peach reached from June to September and weekly data of peach was not available in the market committee so the behaviour of arrivals and wholesale prices have been examined monthly. The average monthly arrival was recorded to be 3241.25 per quintal per month and average wholesale prices were Rs.2390 per quintal (Table 8.3). The higher variation was observed in arrivals then whole sale prices. It was observed during the course of investigation that whole of the produce arrived in the market are reached from terminal markets monthly from Delhi.

Table 8.3: Monthly Arrivals and Wholesale Prices of Peach Fruit and Their Indices in Mumbai Market

Months	Arrival in Quintals	Weekly average wholesale prices per quintal	Indices of peach with mean as a base	
June	892	2625	27.52	109.81
July	5470	2375	168.76	99.35
August	4748	2500	147.48	104.58
September	1855	2062	57.23	86.25
Arithmetic mean as above	3241.25	2390.50	100.00	100.00

Source: Agricultural Produce Market Committee Mumbai.

8.5 Variation in Weekly Arrivals and Wholesale Prices

The arithmetic mean, Geometric means, Standard deviation and Co-efficient of variation in weekly/monthly arrivals and wholesale prices were calculated in each selected markets and correlation coefficient between arrivals and wholesale prices were also calculated and presented in Table 8.4. From arrival point of view Mumbai was the most important market where arrivals of peach is 3481.25 quintal per week followed by New Delhi, 2947.92 3481.25 quintal per month and Chandigarh 70.82 quintal per weeks. In the same time the average wholesale prices were highest in Mumbai Rs.2390.50 per quintal followed by Delhi Rs.1183.23 per quintal and Chandigarh Rs.951.41 per quintal the highest geometric mean was observed in Mumbai in both arrivals as well as wholesale prices, followed by Delhi and Chandigarh. In arrivals highest un-uniformity was observed in Chandigarh followed by Delhi and Mumbai but in whole prices the highest diversity was observed in Delhi, 23.30 per cent followed by Chandigarh 17.34 per cent and Mumbai 10.10 per cent. The co-efficient of variation was observed to be higher in weekly arrivals than whole sale prices in all markets. The co-efficient of correlation between wholesale prices and arrivals were also worked out and analysed. Arrivals were marginally influenced the wholesale

prices in all the market. This fact was proved by negative correlation at Chandigarh & Delhi but in Mumbai a very meagre effect was noticed on arrivals and whole sale prices. In addition to that prices of peach were influenced by other factor like quality, colour, shape, size and stage of maturity sufficiently.

Table 8.4: Arithmetic Mean, Geometric Mean, Standard Deviation and Co-efficient of Variation in Arrivals and Wholesale Prices of Peach Different Selected Markets.

	Chandigarh	**Delhi**	**Mumbai**
Arrivals			
Arithmetic mean	70.82	2947.94	3241.25
Geometric mean	36.07	1692.78	2560.36
Standard deviation	88.31	2252.12	2211.95
Co-efficient of variation	12470	76.39	68.24
Correlation co-efficient between arrivals & prices	-0.2371	-0.3947	+0.0221
Wholesale prices			
Arithmetic mean	951.41	1183.23	2390.50
Geometric mean	938.41	1153.48	2380.97
Standard deviation	164.99	275.71	241.61
Co-efficient of variation	17.34	23.30	10.10

Chapter – IX

PROBLEMS OF MARKETING OF PEACH

Himachal Pradesh being a hill state of India is known for producing quality fruits in India. Earlier, there was emphasis on bringing more area under apple but now keeping in view the agro-climatic conditions in mid-hills the priorities are given to produce more stone fruits. The area under these fruits have been increasing constantly. The increase in production has also brought in many problems with regard to the marketing of these fruits and this ultimately affected both producers as well as consumers. Higher production and productivity is not the only factor, which determine profit maximization but some other factors such as grading, packing, transportation and role of market functionaries are also important. Therefore keeping in view these factors the problem of peach orchardists of Himachal Pradesh in respect of problems related with approach road to village picking/packing material available to producers grading and packing of peach, storage facilities, transportation, market intelligence, malpractices in the market and other problems have been discussed in this chapter. Multiple response analysis on these problems has been carried out and presented in Table 9.1 to 9.8.

The analysis in this respect has been confined to only three consideration (Table 9.1). There were 38 percent farmers who felt concerned about lack of all wither roads where as for 58 per cent orchardists the kuctha roads was the problem. They desired that these should be metalled. For eight percent of orchardists the road was far away and this increased their carriage cost.

Table 9.1: Problems of approach Road to Village as Perceived by Sample Growers of Sirmour District.

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. No all season approach road	13 (50.00)	4 (28.57)	2 (20.00)	19 (38.00)
2.Road is not metalled	11 (42.30)	7 (50.00)	7 (70.00)	29 (58.00)
3. Road is far away	2 (7.69)	1 (7.14)	1 (7.14)	4 (8.00)
4. No problem	-	-	-	-
5. Sample size	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

9.3 Problems Related With Picking and Packing Material

There has been observed a shortage of skilled labour for picking and packing which generally migrates from Bihar and U.P. and at the same time their wages are high for which marginal farmers are not capable to pay. About 73% marginal farmers faced this problem. About 38% orchardists faced shortage of wooden boxes but shortage of other packing material and prices were not the issue. Further table shows that half of the farmers were of the view that there should be a provision of credit for empty boxes.

In fact, peach fruit being fragile in nature, needs good packaging, which may assure least damage to fruit during transportation. Without proper packing it is rather difficult to market a delicate fruit like peach. Therefore, packing problem should be dealt carefully. About in percent of the farmers have shown no response regarding above-mentioned problem. But one fourth were of the opinion that empty boxes were not available in time.

Table 9.2: Problems in Picking/Packing Material of Peach Fruit Perceived by Sample Growers of Sirmour District.

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. Shortage of skilled labour	19 (73.07)	10 (71.42)	8 (80.00)	37 (74.00)
2.Wages are high	19 (73.07)	6 (42.85)	4 (40.00)	29 (58.00)
3. Shortage of wooden boxes	10 (38.46)	4 (28.57)	5 (50.00)	19 (38.00)
4. Shortage of other packing material	-	-	-	-
5. High prices of packing material	-	-	-	-
6. Not available on credit	10 (38.46)	9 (64.28)	6 (60.00)	25 (50.00)
7. Not available in time	10 (38.46)	4 (28.57)	-	14 (28.00)
8. Not available in desired place	-	-	-	-
9. No problem	4 (15.28)	2 (14.28)	1 (10.00)	7 (14.00)
10. No. of respondents	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

9.4 Problems Related With Grading and Packing

Problems related with grading and packing have been presented in Table 9.3 in which it may be seen that there were no grading and packing centre in the area. Eighty percent orchardists complained about this there was also shortage of skilled labour. The wages of skilled labour were reported to be very high for which especially marginal and small farmers faced hardships. About 28 percent farmers faced the problem of non-availability of skilled labour. The number of farmers complaining was directly related to farm size.

Table 9.3: Problems in Grading and Packing of Peach Fruit as Perceived by Sampled Growers of Sirmour Districts

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. No grading packing centre	20 (76.92)	10 (71.42)	10 (100.00)	40 (80.00)
2. Shortage of skilled labour	12 (46.15)	10 (71.42)	10 (100.00)	36 (72.00)
3. Higher wages	16 (61.53)	10 (71.42)	8 (80.00)	34 (68.00)
4. Non-availability of labour	-	8 (57.14)	6 (60.00)	14 (28.00)
5. No problem	2 (7.69)	2 (14.28)	-	4 (8.00)
6. No. of respondents	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

9.5 Problems Related With Storage Facilities

Most of the peach orchardists reported (Table 9.4) that they do not have proper storage facilities with them and after picking the fruits, they put them in some shady place for some time for grading and packing later on. About 66 per cent of the orchardists reported that there was no ripening and canning chamber for the produce. Storage problem definitely affect remunerative prices to the orchardists. Along with storage facilities requirement of cold storage was also a problem where fruit can be retained as per requirement.

Table 9.4: Problem of Storage Facilities of Peach Fruit Perceived by Sampled Growers of Sirmour Districts

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. No storage facility	20 (76.92)	10 (71.42)	10 (100.00)	40 (80.00)
2. Inadequate storage facility	10 (38.46)	5 (35.71)	2 (20.00)	17 (34.00)
3. No repining and curing chamber	18 (69.23)	10 (71.42)	5 (50.00)	33 (66.00)
4. No problem	1 (3.86)	1 (7.14)	-	2 (4.00)
5. No. of respondents	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

9.6 Problems in Transportation

In the wake of WTO quality product has became a need of the time. In this concern India is far behind because of the number of problems related with quality product especially refrigerated transportation has become the need of the time. In this concern about 68 per cent of the orchardist reported that lack of refrigerated vehicles was the major problem for competing in the markets where arrival of product from other countries has started. About 68 percent orchardists felt concerned about lack of refrigerated transportation whereas 64 per cent were bothered about high changes of existing transportation system. Twenty four percent orchardists did not face any problems in these regards.

Table 9.5: Problems in Transportation of Peach Fruit Perceived by Sampled Growers of Sirmour Districts

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. No approach road to farm	8 (30.76)	2 (14.28)	3 (30.00)	13 (26.00)
2. Lack of all weather roads	10 (38.46)	4 (28.57)	3 (30.00)	17 (34.00)
3. Lack of vehicles	-	-	-	-
4. Vehicles not available	-	-	-	-
5. Lack of refrigerated vehicles	20 (76.92)	8 (57.14)	6 (60.00)	34 (68.00)
6. High transportation charges	18 (69.23)	8 (57.14)	6 (60.00)	32 (64.00)
7. No problem	4 (15.38)	6 (42.85)	2 (20.00)	12 (24.00)
8. No. of respondents	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

9.7 Problems Related With Marketing Intelligence

Market intelligence plays a significant role in the marketing of perishables. The prices of produce depend mainly the market conditions, and if the growers do not have proper information regarding market then he cannot take the advantage of high prices whenever these are prevalent. Problems in this regard have been classified into inadequate information, late information and information available for limited markets only, misleading information and no procurement price for peach etc. It may be seen from Table 9.6 that majority of the orchardist felt that inadequate information and information limited to a few markets only were the main problems. At the same time no announcement of procurement price for peach was also the major problem. About 30 per cent of the respondent reported that they receive misleading information.

Table 9.6: Problems Related to Marketing Intelligence as Perceived by Sample Orchardist in Sirmour Districts

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. Inadequate information	15 (57.69)	12 (85.71)	4 (40.00)	31 (62.00)
2. Late information	12 (46.15)	4 28.57)	2 (20.00)	18 (36.00)
3. Information available for limited markets only	14 (53.84)	10 (71.42)	9 (90.00)	33 (60.00)
4. Misleading information	11 (42.30)	2 (14.28)	2 (20.00)	15 (30.00)
5. No problem	5 (19.23)	1 (7.14)	-	6 (12.00)
6. No procurement price for peach	18 (69.23)	10 (71.42)	7 (70.00)	35 (70.00)
7. No. of respondents	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

9.8 Problems Related With Malpractices

Sometimes, the fruit growers get very little out of their sale and this may be because of low prices in the market, high marketing costs as compared to sale price and malpractices prevalent in the market. In this concern the responses of the orchardists have been presented in Table 9.7. About 64 per cent of the peach orchardists reported that commission agents and other functionaries involved in the marketing of their fruit deduct undue charges. About 50 and 34 per cent of the orchardists were also of the opinion that commission agents deduct more charges and delayed the payments. About 52 per cent of orchardists complained that commission agents do not take the consent of producer while selling the produce. About one fourth of the orchardist felt that these functionaries quote lower prices than the actual one at which their produce is sold.

Table 9.7: Problems of Malpractices in Marketing of Fruit as Perceived by Sample Growers of Sirmour Districts

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. Deduct more charges	15 (57.69)	6 (42.85)	4 (40.00)	25 (50.00)
2.No part payment	12 (46.15)	4 (28.57)	2 (20.00)	18 (36.00)
3. Multiplicity of charges	-	-	-	-
4. Deduct under charge	16 (61.53)	10 (71.42)	6 (60.00)	32 (64.00)
5. Delay in payment	10 (38.46)	4 (28.57)	3 (30.00)	17 (34.00)
6. do not take or consent while selling	8 (30.76)	10 (71.42)	8 (80.00)	26 (52.00)
7. Quote lower price than actual prevailing	4 (15.38)	6 (42.85)	2 (20.00)	12 (24.00)
7. No. of respondents	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

9. 9 Other Problems

Orchardists of the study area also reported that there are some other problems, which are not directly related with marketing functionaries. Regarding these problems Table 9.8 indicates that about 60 per cent of the orchardist were not getting desired quantity of inputs. Low level of holding size was a problem for 48 per cent of the orchardists whereas, 22 per cent reported that planting material of peach is of inferior standard and not capable of competing specially with the Uttar Pradesh.

Thus, from the above discussion, it may be concluded that if the growers are provided timely supply of packing material, transport, proper marketing intelligence and efficient marketing facilities, the growers will get better returns for their produce. This will not only improve the socio-economic conditions of these orchardists, but will also facilitate them to compete in the wake of WTO

Table 9.8: Other Problems Faced in Marketing of Peach Fruit as Perceived by Sample Growers in Sirmour Districts

(Multiple response)

Particulars	Marginal	Small	Medium	All sample
1. Inferior varieties	2 (7.69)	5 (35.71)	4 (40.00)	11 (22.00)
2. Small Orchard	20 (76.92)	4 (28.57)	-	24 (48.00)
3. Old age orchard	-	-	-	-
4. Non availability of desired quantity of input	18 (69.23)	8 (57.14)	4 (40.00)	30 (60.00)
5. No. of respondents	26 (100.00)	14 (100.00)	10 (100.00)	50 (100.00

Note: Figures in parenthesis are the percentage to total sample

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