PRODUCTION AND MARKETING OF SANGTRA AND KINNOW IN HIMACHAL PRADESH

Ranveer Singh
C. S. Vaidya
S. P. Saraswat
Pratap Singh

Agro-Economic Research Centre,
Himachal Pradesh University,
Shimla-171005 (INDIA)

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RESEARCH TEAM

Over all guidance	Dr Ranveer Singh Dr C.S. Vaidya
Field survey	Dr S.P. Saraswat Dr Pratap Singh Dr M. L. Sharma Mr Khem Raj Sharma Mr Inder Singh
Data Tabulation and Analysis	Dr S.P. Saraswat Dr Pratap Singh Mr Inder Singh
Word Processing	Mrs Meera Verma Chaman Lal
Photo Copy/Binding	Mr Amer Chand Sharma

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EXECUTIVE SUMMARY

Abstract: The low hill zone of H.P. is suitable for the production of citrus fruits like Kinnow, Malta, Sangtra, Galgal, and Lime etc. The production of citrus fruit has increased many fold during two and half decade out of which citrus fruit occupies about 11 per cent area and about 4 per cent production of the total fruits consequently, the task of production and marketing has became more complex, especially the later in the light of competitions posed by Sangtras from Nagpur. The problem being faced by citrus fruit producers became more complex due to small marketable quantities and lack of knowledge in this regard. The present study has been designed in order to provide some feed back regarding various markets located in the vicinity of Himachal Pradesh so that the marketing process is facilitated to some extent.

Objectives

The study has been designed to cater the following objectives.

1. To study the trends in area and production of Sangtra and Kinnow in Himachal Pradesh.
2. To examine the production system of Sangtra and Kinnow on various category of farm.
3. To analyze the marketable and marketed surplus of Sangtra and Kinnow on different categories of farms in the State.
4. To study the marketing channel, price spread, marketing margins and producer share in marketing of Sangtra and Kinnow on various farms.
5. To study the problem faced by the farmers in production and marketing of Sangtra and Kinnow.

Methodology

Citrus fruits, covered in the present study are Kinnow, Sangtra, Galgal and Lime. The study is based on secondary data collected from selected markets and primary data from selected citrus fruit growers of Kangra and Sirmour district. The field data was collected from selected fruit growers on pre-tested schedule/questionnaires by personal interview method. For secondary data, the functionaries of market committee were contacted. Some buyers and sellers were also contacted to get the information on various aspects. The markets covered in the study are Chandigarh, Dehradun, Yumuna Nagar, Poanta Sahib, Jassur and Pathankot. The reference year/period of the study is crop year 2006-07.

Main Findings

General Features of Sample Orchardists

The average family size of citrus fruit orchardists was 4.52 persons out of which 2.08, 1.59 and 0.84 were males, females and children respectively. In Kangra entire population of sampled house holds was literate whereas in Sirmour district 90.27 percent population was literate. The average size of land holdings of sample orchardists varies from 0.79 hectare on marginal farms to 5.71 hectares on large farms. The separate orchards of Galgal and lime are not maintained but are interspersed with Sangtra and Kinnow. The number of bearing trees maintained by Kangra orchardists varies from 49.50 trees on marginal farm to 500.66 trees on large farms similarly non-bearing trees varies from two on marginal farms to 83.33 on large farms among citrus fruits Kinnow ranked first followed by Sangtra, lime and Galgal.

Growth in Area and Production of Citrus fruit

The main citrus fruit growing districts are Kangra, Sirmour and Mandi. At over all level the area under citrus fruit decreased at an annual compound growth rate of 6.90 per cent during 1994-95 to 2006-07.

The production of citrus fruits during 1994-95 to 2006-07 has shown an annual compound growth rate of 10.22 per cent The highest growth rate was observed in Solan districts (27.86 per cent) followed by Mandi (23.28 per cent) and Hamirpur (19.35 per cent). In the state, more than 80 per cent of the total production was marketed during November to March.

Market charges and Price Spread

The Kangra growers generally send the produce to Jassur and Pathankot whereas the markets like Poanta Sahib, Dehradun, Yumuna Nagar and Chandigarh are more popular with Sirmour district. The study is limited to these six selected markets. The charges levied at different markets are as follows.

Commission of the Commission Agent

It is charged at the rate of 3 to 5 per cent of the face value for the produce sold. The rate of commission differs from state to state and is being charged from both buyers as well as sellers.

Market Fee

The commission agent is supposed to charge market fee from the purchaser ranging from 1 to 2 per cent on the sale value of goods in different markets.

Other charges

The state like Haryana and Punjab charged one percent of sale value of goods as a rural development fund. This is charged from buyers only.

Loading and Unloading

A sum of Rs.2 per piece is charged from the seller as handling charges for each crate to be sold. This charge is not approved by market authorities.

Price Spread for Kangra

The price spread/margin has been worked out for Pathankot and Jassur market. The producer share in consumer rupees for Sangtra has been observed to be 55.07 and 55.37 in Pathankot and Jassur market respectively. In these markets the retailer's margin is 13.04 per cent for both Sangtra and Kinnow. The Kangra producers realized higher returns in Pathankot market for both Sangtra and Kinnow. The main reason for lower prices in Jassur market is that only Himachal fruits are mainly deals in this market. In Pathankot, Nagpuri Sangtra also competes with local produce which has high quality and is costlier. This increases the price of local produce also. The prices of Kinnow have been observed to be marginally lower than Sangtra mainly because the consumers have lower preference for Kinnow.

Price Spread for Sirmour

The price spread/margin has been worked out for Poanta Sahib, Yamuna Nagar, Chandigarh and Dehradun markets. The market costs incurred by orchardists of Sirmour have been worked out for Rs.50.28, Rs.69.03, Rs. 59.28 and Rs.60.08 for Sangtra in Poanta Sahib, Yamuna Nagar, Chandigarh and Dehradun markets respectively. The marketing cost of Kinnow has been observed to be almost the same. The producer's share in consumer rupees for Sangtra was 54.70, 46.02, 46.63, and 51.52 per cent in Poanta Sahib, Yamuna Nagar, Chandigarh and Dehradun markets respectively. The producers of Sirmour district realized highest net price for Sangtra in Dehradun market (Rs149.92), followed by Poanta Sahib (Rs 49.72), Yamuna Nagar (Rs.135.97) and Chandigarh (Rs 120.02).

It may be concluded that the rise or fall in producers share is more than proportional to the rate of rise or fall is price level. This is so because several costs remain constant and do not change with price. Scrutiny of data revealed that benefits of rise in price do not percolate fully down to the growers as middleman reflecting the inefficiency of marketing mechanism intercepts their gains.

Problems and Prospects

The citrus fruit orchards are not properly maintained, the varieties grown are low yielding one and quality of produce is also not good. For these reasons the farmers of the state gets poor returns from citrus fruit orchards. Due to poor returns the farmers in Kangra are not taking needed interest in improvement of citrus fruit orchards. All this requires sincere efforts of policy planners and the quarter concerned i.e. Horticultural Department to extend adequate technical know-how and other inputs for the improvement of the existing orchards and future production. The concerted efforts are also required to educate farmers for post-harvest management of fruits so that Himachal fruit can better compete with fruits of other state.

The findings of the study suggest that packing of fruit from Himachal Pradesh is not being undertaken properly and this results in poor quality and quantity of fruits during transit to various markets. Therefore arrangement of packing material is the need of efficient marketing. The State Government can take suitable measures to help citrus fruit growers for proper packing of fruits like other fruits. The citrus fruit growers should be provided credit on easy terms for post harvest management of their produce. To avoid distress sale, the provision of small size of cold storages in the producing areas have to be established by concerned department. The larger share of consumer rupee is concerned by market intermediaries and to reduce this margin particularly of small farmers, the appropriate answer is organizing of cooperative marketing societies. These societies should be organized on the pattern of cooperative fruit and vegetable marketing societies successfully working in apple producing areas of the state.

Chapter –1

INTRODUCTION

Himachal Pradesh is situated in the lap of Western Himalayas. The elevation of the State ranges from 350 to 6975 meters above MSL. Due to this variation, climate of the state differs from place to place. The different climatic conditions of the state are best suited for production of different fruits crops: high hills for growing temperate fruits and vegetables and mid hills for vegetables and stone fruits, while low hills have the advantage of growing citrus fruit like Malta, sangtra, Galgal, lime etc. as well as mango and litchi. Many studies conducted by the Agro-Economic Research Centre Shimla show that, fruit crops are economically more viable than cereals, pulses and oilseeds. These crops not only increase the income of the people but also solve the problem of unemployment because these crops are comparatively capital and labour intensive.

Due to comparative profitability of citrus fruit in lower areas of the state, the cultivation of these fruits has increased over time and has emerged as an important avocation. This may be judged from the fact that the area and production under citrus fruit crops increased by leap and bounds, i.e. from 7552 hectare in 1975-76 to 21118 hectare during 2006-07. Citrus fruits are produced in all the districts of the state except Kinnaur and Lahaul-Spiti but the main growing districts are Kangra, Sirmour and Mandi. Among 12 districts of the state, two district viz Kangra and Sirmour are the most important for the production of citrus fruits. The area under these fruits is increasing year after year and production is likely to increase in future as more and more plantation start bearing fruit. The increased volume of production, thus require adequate and suitable marketing infrastructural facilities, failing which the farmers will be deprived of remunerative prices badly affecting the economics of these fruits.

Rationale of the Study

Of late, it has been well established that agriculture (particularly cereal cultivation) practiced by the farmers of lower hills of Himachal Pradesh is of subsistence nature which has pushed them into a vicious cycle of poverty- low income- low saving – low investment and low productivity per unit of land, man and time. Juxtaposed with the intensity of this problem, it is not easy to get the farmers out of this circle, unless agriculture is wisely and optimally integrated with some suitable new coming ventures like horticulture.

Himachal Pradesh, endowed with various type of climate and soil is ideally suited for the cultivation of a wide range of fruits including Sangtra and Kinnow. Unfortunately, no serious attempt has been made in the past to exploit the full potentiality of fruit industry in the state. This is mainly because of the reason that particularly in Kangra, the marketing of Sangtra and Kinnow has not been taken seriously due to which it could not develop and mostly depend on pre-harvest contractors.

Further there are certain inherent problem in marketing of Sangtra and Kinnow and the most important reason is the lack of authentic data required for meaningful planning relating to Sangtra, Kinnow. Keeping this is view the present study is to focus on different aspects of production and marketing of Sangtra and Kinnow in Kangra and Sirmour districts of Himachal Pradesh.

Objectives of the Study

The specific objectives of the study are:

1. To study the trends in area and production of Sangtra and Kinnow in Himachal Pradesh.
2. To examine the production system of Sangtra and Kinnow on various categories of farm.
3. To analyze the marketable and marketed surplus of Sangtra and Kinnow on different categories of farms in the State.
4. To study the marketing channel, price spread, marketing margins and producer share in marketing of Sangtra and Kinnow on various farms.
5. To study the problem faced by the farmers in production and marketing of Sangtra and Kinnow.

Type of Data Used

Citrus fruits include the Kinnow, Sangtra, Galgal and Lime. In order to achieve the objectives of the present study both the primary and secondary data have been collected. The primary data has been collected from citrus fruit growers of Kangra and Sirmour districts and secondary data from different selected markets viz Chandigarh, Dehradun, Yamuna nagar, Poanta Sahib, Jassur and Pathankot as well as from Directorate of Horticulture, Shimla.

Sampling Technique

For the purpose of study, Kangra and Sirmour districts were selected purposely as the production of citrus fruits is highest in these two districts. Multistage stratified random sampling technique was followed in the selection of ultimate sample. From the selected districts, one tehsil each with largest area under citrus fruit was selected. Similarly, from each tehsil, one patwar circle was selected with the highest area under this crop. There after in selected patwar circles, one nucleus village was

selected randomly and another two villages nearest to the selected villages were taken to form a cluster of three villages. From these clusters, a sample of 40 farmers in Kangra and 16 farmers in Sirmour was selected randomly. The sample was divided into four groups according to size of holding i.e. marginal up to 1 hectare of land, small, 1 to 2 hectare of land, medium having land 2 to 4 hectare of land and large holding size is more than 4 hectare. Based upon this, the number of households in each category was, 10, 17, 10 and 3 in Kangra and 9,5,2 in Sirmour district, respectively (Table 1.1). The needed information was collected by personal interview method. A simple tabular analysis has been used for processing the data.

Secondary Data

The secondary data regarding area, production and export was collected from the Directorate of Horticulture, Himachal Pradesh. The data regarding markets was collected from market committee offices of the selected markets i.e. Chandigarh, Dehradun, Yamuna nagar, Poanta Sahib, Jassur and Pathankot. The markets were selected purposely based on the recommendation of Directorate of Horticulture, Himachal Pradesh.

Table: 1.1 Classification of Sampled Orchardists.

Size of Holding	Kangra	Sirmour	Total
Marginal	10 (25)	9 (56.25)	19 (33.93)
Small	17 (42.50)	5 (31.25)	22 (39.29)
Medium	10 (25)	2 (12.50)	12 (21.43)
Large	3 (7.50)	-	3 (5.36)
Total	40 (100.0)	16 (100.0)	56 (100.0)

Concepts and Definitions

Methods of Measurement of Marketing Margins

There are three methods generally used for the calculation of marketing margins (Merchandani, 1965) which are 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 method 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.

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 three to seven years after planting.

Non-Bearing Tree A non bearing tree has been defined as a tree which has not reached the bearing age.

Orchard An area having at least 10 plants has been defined as an orchard irrespective of its geographical contiguity or scattered ness.

Orchardists Any person owing an orchard has been defined as an orchardists.

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

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

Picking Means Harvesting of fruits.

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

Productivity Average yield per fruit bearing tree in term of weight.

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

Marketed Surplus Refer to the quantity of the produce actual marketed.

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.

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

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.

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 undertakes to perform all the marketing operations including picking at their own risk and cost.

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.

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 function of commission agent as well as wholesaler.

Retailer The retailer, an intermediary in the market 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.

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

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'.

Chapter –2

CITRUS FRUIT PRODUCTION IN HIMACHAL PRADESH

The unique locational and climatic advantages enjoyed by the state make it an ideal region for growing almost all kinds of fruits: temperate, sub-tropical and dry fruits. The temperate fruits are grown in upper region of the state, while sub tropical fruits are popular at lower altitudes. In spite of country wide decline, plantations of Sangtra, Galgal and Kagzi lime are doing well in the lower hills. Now, the plantations of Kinnow have become very popular with the farmers of lower altitudes in Himachal Pradesh.

The citrus fruit production is a long term vocation because of its long gestation and production periods. Therefore, it would be necessary to have a long term planning both in its production and marketing. This demands timely arrangement for fixation of norms for standardized grading, arrangement for transport, setting up of storage and processing facilities etc. Though, these has been increase in the production of citrus fruit during recent years, due to defective and inadequate marketing facilities the farmers deprived from adequate returns from citrus fruit cultivation and more and more are dependent on pre-harvest contractors.

India is a vast country with wide range of climate and natural conditions which helps to grow various kinds of fruit in the country. The total area and production of all fruits in India was about 5508 thousand hectare and 57727 thousand tons, respectively. In the year 2006-07, out of which citrus fruit accounts for about 13.59 per cent of the total area and 10.8 per cent of the total production. In Himachal Pradesh, citrus fruit contributes about 10.69 and 3.43 percent to area and production, respectively of total fruit. The various varieties of citrus fruit grown in Himachal Pradesh are Kinnow, Agra and Srinagar, Sweet Sangtra (Malta), Galgal and Kagzi lime etc.

History

The Genus citrus fruit comprises of a wide spectrum of varieties as well as stream spread over wide area in all the tropical and subtropical parts of the world. It is produced in Brazil, China, India, Italy, Israel, Japan, Mexico, Spain, USA and South Africa etc. Most of the species of citrus fruit are native of the subtropical and tropical regions of South East Asia well known citrus fruit species are sweet Sangtra, Mandarin, Sangtra, sour Sangtra, lime, lemon, sweet lime, punmdo, grape fruit and citron.

Factors Affecting Citrus fruit Cultivation

The climate, soil and temperature have a great influence on the cultivation of citrus fruit. Basically, it is the influence of climatic conditions and their interaction with the soil which determine the satisfactory production of citrus fruit. For citrus fruit cultivation, sub-tropical or tropical climate with a cool summer is the best suited. Further, this would also grow (Krishnamurthy, 1963) successfully in all tropical and sub-tropical parts of the country but the sub-mountainous tract with elevation from 600 to 1100 meters above MSL and annual rainfall ranging from 75 to 250 cms. After a more attractive climate the citrus fruit thrive well on sandy or gravely soils which have a natural sub-soil drainage system as water logging around the roots during rains is harmful to the plant. However, a well-distributed rainfall is important in respect of mandarin Sangtra. Thus, the lower areas of the state offer the most suitable conditions for the cultivation of citrus fruit particularly Sangtra, lime and Galgal.

Citrus fruit Orchard Management

The sloped topography and heavy rainfall of hilly areas make necessary some sort of terracing in order to avoid soil erosion and water logging. The site of most of the citrus fruit orchards makes it difficult to adopt mechanical cultivation and such limitations make cultivation and maintenance of orchards expensive. Therefore, it is presently difficult to envisage the application of great deal of modern equipment and machinery to such hilly areas.

It is desirable to use budded plants of all citrus fruits. Due to the occurrence of polyembryony in this group, however, there is no harm in planting seedlings in case of Kagzilime, Galgal and mandarin, provided the seeds for the purpose have been taken from good mother tree. The rootstock used for budding the selected bud-wood should also be of a desirable kind. Jambheri is the commonly used rootstock. The beginning of rainy season is the best planting time for citrus fruit. However, if adequate irrigation facilities are available the plantation can be done with equal success in February March.

Planting at 6x6 meters is suitable for most citrus fruit species except for lemon and Kagzi lime in which case distance of 7x7 or 8x8 and 5x5 meters respectively more desirable (package of practice of fruit 1974-75). For sweet Sangtra a spacing of 4.5x4.5 meters has been found suitable under Poanta Valley conditions. In lemons, where the planting is done along the bunds, the distance should be 3 meters. For filling of pits, top soil well mixed with equal quantity of well rotten F.Y.M. is the best. Soil from the bottom of the pit should not be used.

Both F.Y.M. and chemical fertilizer are important for citrus fruit orchards. Phosphates and Potash fertilizer and farm yard manure should be applied in the end of December whereas half the dose of ammonium sulphate should be applied in February and rest in April-May. Zinc sulphate and manganese sulphate along with lime should be sprayed in spring and summer season. The recommended fertilizer doses per citrus fruit tree are as follows.

Per Tree Recommended fertilizer doses for citrus fruits in Himachal Pradesh

Age of tree years	**F.Y.M. kgs.**	**N (gms.)**	**P_2 05 (gms)**	**K 2 0 (gms.)**
1-3	20-40	120-260	-	-
4-6	40-60	260-500	300-400	100-200
7-9	60-80	580-720	450-600	250-350
10 & above	100	800	750	400

Source: Package of practice for fruit crops of Himachal Pradesh 1974-75, Directorate of Extension Education, Agricultural Complex, Himachal Pradesh University.

The inter cropping should not be done in the bearing orchards, however inter cropping with leguminous crops like mash, cowpea, gram, pea etc. can be practiced in case of young non-bearing tree. The important insect pests which are common in citrus fruit are citrus fruit psylla, citrus fruit white fly, citrus fruit leaf minor, citrus fruit butterfly, citrus fruit nematode etc. The common diseases of this fruit are canker, die back, decline etc. The harvesting of citrus fruits begins in December and continues up to February. The yield of citrus fruit depend upon many factors, such as age of tree, variety, rootstock, climatic conditions, cultural practices, pests and disease and location of the orchard.

Dispatch for Citrus Fruit from H.P.

The sale of fruit outside the state has a direct relationship with marketable surplus which is that part of the produce which is available with the producer for disposal after meeting on farm requirement for various purposes e.g. animal feed, home consumption and gift etc. As a rule, the proportion of marketable quantity of fruits is much higher than grain because fruits are perishable and these can be consumed only during the short period. In Kangra district 97.3 per cent Kinnow and 93.82 per cent Malta sold out in market. The production of fruits and vegetables is generally concentrated in a smaller area but their consumption takes places over a much larger region. As all the citrus fruit produced in Himachal Pradesh cannot be consumed within the state. The surplus has to be

dispatched to various part of the country every year/season. The surplus sent out of the produce is consumed in fresh and a part (about full in case of Galgal fruit) is supplied to the fruit-processing unit for consumption later on.

Position of Citrus fruit in Comparison to Other Fruits

The share of district Kangra and Sirmour in area under citrus fruits in the state during 1994-95 to 2006-07 has been presented in Table 2.1. The analysis reveals that the area under all fruits as well as citrus fruits has decreased with an annual rate of 0.37 percent and 6.90 percent respectively during the period under study. Further, analysis reveals that the share of citrus fruits in total fruits area has decreased from 20 percent in 1994-95 to 11 percent in 2006-07 in the state. The share Kangra district in total area under citrus fruits in the state has increased marginally. However, the share of Sirmour district in total area of the state remains the same during the years 1994-95 and 2006-07.

The share of the districts under study in total citrus fruit production in the state has been given in Table 2.2. It may be seen from the table that the production of all fruits increasing with annual growth of 4.20 percent during 1994-95 to 2006-07 in the state. The production of citrus fruits registered a growth of 10.20 percent annually. In Kangra district the production has been increasing with an annual growth rate of 10 percent while in Sirmour district negative trend has been observed. The share of citrus fruits production in total fruit production in the state has decreased from 4 percent in 1994-95 to 3.43 percent in 2006-07. The district Kangra has about 76 percent share in total citrus fruit production in the state during 1994-95 which decreased to 63 percent in 2006-07. In case of Sirmour district the share in total citrus fruit production decreased from 13 percent in 1994-95 to 3 percent in the year 2006-07.

Growth in Area and Production

Knowledge about sources of growth in agriculture and its relative importance in different agro-climatic conditions is desirable for effective planning at regional and state level. The level of growth of area and yield determines the growth in output. In Himachal Pradesh, citrus fruit is mainly grown in foot hills, which are best suited for the production of this fruit. The main citrus fruits growing districts are Kangra, Mandi and Sirmour but this is cultivated to some extent in all over the state except district Kinnaur and Lahaul-Spiti. The purpose of this analysis is to examine the trends in area and production under different citrus fruits in different districts of the state.

1**. Kinnow** Table 2.3 and 2.4 present the district wise area and production under Kinnow in Himachal Pradesh during 1994-95 to 2006-07. It may be observed from the table that maximum area under Kinnow is in Kangra district but highest growth was observed in Mandi and Shimla districts whereas all other districts shows the negative growth rate. In Himachal, area under Kinnow decreased at rate of 5.87 per cent during the same period while production has increased by 3.12 per cent per annum.

2. Malta/Mossomi Table 2.5 and 2.6 present the district wise area and production under Malta/Mossomi respectively in Himachal Pradesh during 1994-95 to 2006-07. It may be observed from the table that maximum area under Malta/Mossomi is in district Kangra. The positive growth is observed in Mandi (11.72 per cent) followed by Una (8.26 per cent), Hamirpur (3.59 per cent) and Bilaspur (0.27 per cent) rest district shown negative growth. During the same period at overall level in Himachal Malta/Mossomi production shows 29.19 per cent growth whereas negative growth was observed in Sirmour and Chamba district. In production, highest annual growth of 34.30 per cent was observed in Kangra districts.

3. Kagazi Lime Table 2.7 and 2.8 present the district wise area and production under Kagazi Lime, respectively in Himachal Pradesh during 1994-95 to 2006-07. It may be seen from the table that maximum area under Kagazi Lime was in district Mandi (2846 hectares), followed by Kangra (2669 hectares) and Hamirpur (868 hectares). Table reveals that area under this fruit has negative growth while production has increasing trend in all districts. At overall level, Kagazi Lime production has been increasing at the rate of 19.22 per cent per annum.

4. Galgal The district wise area and production of Galgal in Himachal Pradesh during 1994-95 to 2006-07 is given in Tables 2.9 and 2.10 respectively. It may be seen from the table that maximum area under Galgal was in Mandi districts (534 hectares), followed by Kangra (485 hectares). Further, table shows that except Shimla all districts have negative growth in area under this fruit. At overall level in the state Galgal area decreased at the rate of 3.62 per cent while production increases at the rate of 2.52 per cent annually. In production highest growth was observed in district Mandi (16.52 %).

5. All Citrus Fruits Table 2.11 percent the district wise area under citrus fruits in Himachal Pradesh from 1994-95 to 2006-07. It may be seen Kangra district has the maximum area under citrus

fruit. But the highest annual growth has been observed in Mandi district. The area under citrus fruit has negative growth of 6.90 per cent per annum.

The production of citrus fruits from 1994-95 to 2006-07 has been presented in Table 2.12. It may be seen from the table that the total production of citrus fruits in Himachal Pradesh is increasing at an annual growth rate of 10.22 per cent but the highest growth was observed in Solan district (27.86%), followed by Mandi (23.28 %), Hamirpur (19.35 %).

It may be concluded from the above discussion that the state has witnessed a fast growth in citrus fruits production. In the state more than 80 per cent of the total production is marketed during November to March. Keeping in view the fact the fresh plantation come in bearing in near future the production is still to be higher. This calls for a suitable marketing strategy including arranging packing material, market intelligence and transportation facilities etc.

Table-2.1: Area under citrus fruits in Himachal Pradesh.

(Area in hectares)

Years	Area under all Fruits in H.P.	Area under citrus fruit in H.P.	Area under citrus fruit in Kangra	Area under citrus fruit in Sirmour	Share of citrus fruit in total area under fruit in H.P.	Share of Kangra district in total citrus fruit area in H.P.	Share of Sirmour district in total citrus fruit area in H.P.
1994-95	189689	38323	16440	3182	20.20	42.90	8.30
1995-96	195684	38595	16528	3190	19.62	42.82	8.26
1996-97	196212	38369	16579	3132	19.55	43.21	8.16
1997-98	202362	38635	16739	3141	19.09	43.32	8.13
1998-99	207240	38711	16783	3143	18.67	43.35	8.12
1999-00	212951	39138	17043	3156	18.39	43.52	8.14
2000-01	217226	39627	17369	3180	18.61	43.83	8.02
2001-02	223035	40174	17693	3237	18.01	44.04	8.06
2002-03	176206	19784	8568	1555	10.66	45.61	8.28
2003-04	182441	20261	8824	1600	11.10	43.55	7.90
2004-05	186903	20402	8900	1617	10.91	43.62	7.92
2005-06	191668	20729	9089	1624	10.81	43.85	7.83
2006-07	197445	21118	9248	1658	10.69	43.79	7.85
C.G.R.	**-0.37**	**-6.90**	**-6.70**	**-7.30**	**-**	**-**	**-**

Table: 2.2: Production of citrus fruit in H.P. and Kangra and Sirmour districts.

(Production in M.T)

Year	Total production of fruits in H.P.	Total production of citrus fruit in H.P.	Total production of citrus fruit in Kangra district	Total production of citrus fruit in Sirmour district	Share of citrus fruit in total fruit production in H.P.	Share of Kangra district in total citrus fruit production in H.P.	Share of Sirmour district in total citrus fruit production in H.P.
1994-95	170541	6665	5093	908	3.91	76.41	13.62
1995-96	311889	5839	4462	571	1.87	76.42	9.79
1996-97	351625	13834	10273	1072	3.93	74.25	7.75
1997-98	279693	11759	9155	1014	4.20	77.85	8.62
1998-99	447684	13111	10565	585	2.93	80.58	4.46
1999-00	89415	9257	6913	289	10.35	74.68	3.12
2000-01	428049	11068	5295	1576	2.58	47.84	14.24
2001-02	263446	20465	14815	455	7.77	72.39	2.22
2002-03	459623	16027	12123	1042	3.49	75.64	6.50
2003-04	559977	28121	21246	470	50.22	75.55	1.67
2004-05	692011	28554	24906	559	4.12	87.22	1.95
2005-06	695117	29159	23638	584	4.19	81.06	2.00
2006-07	369103	12670	8001	397	3.43	63.15	3.13
CGR	**4.20**	**10.20**	**9.97**	**-4.48**	**-**	**-**	**-**

Table: 2.3 District wise Area under Kinnow in Himachal Pradesh during 1994-95 to 2006-07.

(Area in ha.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamir pur	H.P.
1994-95	33	83	645	36	10131	271	717	405	756	464	13541
1995-96	33	86	663	39	10157	274	720	410	767	482	13631
1996-97	33	86	675	40	10168	275	696	414	766	487	13640
1997-98	33	87	685	40	10259	275	697	417	775	491	13759
1998-99	33	87	685	41	10298	276	698	427	777	493	13815
1999-00	33	87	696	42	10495	277	701	447	796	497	14071
2000-01	33	87	717	44	10706	279	702	452	799	501	14320
2001-02	34	87	724	45	10941	285	706	455	807	508	14592
2002-03	32	22	699	21	5001	269	467	239	703	180	7633
2003-04	33	23	707	21	5184	269	469	240	711	187	7844
2004-05	33	23	708	21	5416	270	473	241	715	189	7906
2005-06	33	23	714	21	5326	270	475	242	735	194	8033
2006-07	36	23	722	21	5414	271	476	242	771	200	8178
C.G.R.	**0.27**	**-14.46**	**0.78**	**-6.65**	**-7.19**	**-0.13**	**-4.47**	**-5.85**	**-0.43**	**-10.11**	**-5.87**

Table: 2.4 District wise production of Kinnow in Himachal Pradesh during 1994-95 to 2006-07.

(Production in M.T.

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1995-96	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1996-97	3	1	7	14	7751	6	461	55	440	80	8818
1997-98	-	1	7	9	6947	9	343	50	329	10	7705
1998-99	2	-	4	5	8473	16	206	42	191	45	8984
1999-00	-	-	26	-	5549	14	104	43	567	86	6389
2000-01	4	1	24	19	4049	99	737	284	679	193	6089
2001-02	2	-	68	13	11450	8	65	67	1530	90	13293
2002-03	7	-	35	11	6637	22	485	10	736	111	8054
2003-04	7	-	45	-	12460	16	159	35	1406	114	14242
2004-05	2	-	30	6	12659	8	153	10	735	99	13702
2005-06	1	-	198	15	16789	36	154	16	1078	110	18397
2006-07	1	-	172	9	3258	30	153	55	828	144	4650
C.G.R.	**-**	**-**	**33.54**	**-0.16**	**2.28**	**9.34**	**-8.35**	**-9.66**	**12.59**	**13.5**	**3.12**

Note: N.A. – Not available

Table: 2.5 District wise Area under Malta/Musambi in Himachal Pradesh during 1994-95 to 2006-07.

(Area in Ha)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	-	23	45	4	1090	20	120	53	24	25	1404
1995-96	-	23	49	4	1099	20	120	53	25	43	1436
1996-97	-	23	52	4	1111	20	118	53	24	44	1449
1997-98	-	23	55	4	1144	20	118	53	26	45	1488
1998-99	-	23	63	4	1149	20	118	53	29	45	1504
1999-00	-	23	70	4	1538	20	118	55	34	48	1533
2000-01	-	23	71	4	1194	20	118	59	35	49	1573
2001-02	-	23	72	4	1218	20	118	60	40	52	1607
2002-03	-	4	118	1	601	6	14	49	42	38	873
2003-04	-	4	139	1	604	6	14	51	48	42	909
2004-05	-	4	141	1	932	7	17	54	50	50	923
2005-06	-	4	150	1	625	7	17	56	54	54	968
2006-07	-	4	162	1	644	8	17	56	60	61	1013
C.G.R.	**-**	**-19.22**	**11.72**	**-15.23**	**-6.35**	**-11.52**	**-21.98**	**0.27**	**8.26**	**3.59**	**-4.53**

Table: 2.6 District wise Production of Malta/ Musambi in Himachal Pradesh during 1994-95 to 2006-07.

(Production in M.T.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1995-96	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1996-97	-	6	6	-	327	2	17	18	26	21	423
1997-98	-	4	9	6	134	6	64	14	-	-	237
1998-99	-	4	6	4	87	4	35	2	15	6	163
1999-00	-	-	-	-	9	-	4	1	2	2	18
2000-01	-	4	19	14	121	30	84	67	49	52	440
2001-02	-	-	27	1	560	5	35	-	172	46	846
2002-03	-	5	20	1	1050	39	25	5	45	28	1218
2003-04	-	-	23	-	2597	18	7	17	150	32	2844
2004-05	-	-	15	-	4194	27	11	5	106	33	4391
2005-06	-	-	54	2	1179	5	9	10	111	39	1409
2006-07	-	-	-	1	715	9	4	28	115	61	933
C.G.R.	**-**	**-**	**19.45**	**-19.36**	**34.30**	**13.31**	**-16.95**	**6.08**	**27.31**	**18.91**	**29.19**

Note: N.A. – Not available

Table: 2.7 District wise Area under Kagzi Lime in Himachal Pradesh during 1994-95 to 2006-07.

(Area in Ha.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	660	212	3835	793	4475	2989	1905	2429	1124	1632	20054
1995-96	663	214	3856	816	4505	3016	1910	2430	1129	1634	20173
1996-97	665	215	3850	827	4535	3034	1885	2223	1110	1636	19980
1997-98	667	217	3860	852	4568	3041	1893	2225	1121	1639	20083
1998-99	667	217	3860	854	4568	3041	1894	2226	1121	1639	20087
1999-00	669	217	3893	871	4614	3047	1904	2238	1129	1641	20223
2000-01	673	217	3917	883	4701	3079	1927	2243	1136	1649	20425
2001-02	692	224	3918	910	4766	3116	1980	2248	1153	1656	20663
2002-03	401	46	2826	305	2476	350	843	345	540	784	8916
2003-04	414	50	2842	311	2540	366	896	358	550	815	9132
2004-05	420	50	2846	313	2589	370	886	367	551	836	9188
2005-06	426	50	2846	329	2640	385	901	368	556	838	9336
2006-07	460	51	2846	339	2669	399	934	386	556	868	9528
C.G.R.	**-4.74**	**-16.0**	**-3.32**	**-10.20**	**-6.04**	**-22.77**	**-8.18**	**-20.34**	**-7.77**	**-7.40**	**-8.38**

Table: 2.8 District wise Production of Kagazi Lime in Himachal Pradesh during 1994-95 to 2006-07.

(Production in M.T.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1995-96	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1996-97	16	3	27	36	631	24	216	54	107	26	1140
1997-98	11	6	24	30	706	13	214	33	51	9	1097
1998-99	12	8	60	25	491	25	146	35	56	74	932
1999-00	9	2	73	11	740	45	63	16	54	41	1054
2000-01	31	10	104	94	371	339	313	143	113	141	1659
2001-02	11	132	310	315	1750	291	240	40	115	90	3294
2002-03	75	10	305	78	3790	298	355	42	120	47	5120
2003-04	80	10	170	746	2993	274	205	35	90	174	4777
2004-05	65	13	160	96	4602	230	262	75	54	173	5730
2005-06	62	10	400	272	4367	245	289	88	37	151	5921
2006-07	62	6	244	10	1698	333	220	81	125	198	2977
C.G.R.	**21.83**	**9.26**	**25.43**	**13.36**	**22.11**	**31.35**	**5.03**	**7.80**	**0.42**	**23.43**	**19.22**

Note: N.A. – Not available

Table: 2.9 District wise Area Under Galgal in Himachal Pradesh during 1994-95 to 2006-07.

(Area in Ha.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	67	34	558	413	724	288	429	258	243	247	3261
1995-96	68	34	558	418	724	288	429	258	243	249	3269
1996-97	68	34	534	418	722	290	422	232	245	249	3214
1997-98	68	34	534	420	723	290	422	232	245	249	3217
1998-99	68	34	534	420	723	290	422	232	245	249	3217
1999-00	69	34	534	420	723	290	422	232	245	249	3218
2000-01	69	34	536	420	723	290	422	232	246	249	3221
2001-02	69	34	536	420	723	290	422	232	247	249	3224
2002-03	71	7	533	276	476	175	225	216	178	151	2308
2003-04	72	8	534	278	482	175	225	217	179	152	2322
2004-05	72	8	534	278	482	175	225	217	179	152	2322
2005-06	73	8	534	280	484	175	225	219	186	154	2338
2006-07	75	8	534	283	485	175	225	219	186	155	2345
C.G.R.	**0.84**	**-16.05**	**-0.27**	**-4.38**	**-4.44**	**-5.45**	**-7.00**	**-1.33**	**-3.17**	**-5.30**	**-3.62**

Table: 2.10 District wise Production of Galgal in Himachal Pradesh during 1994-95 to 2006-07.

(Production in M.T.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1995-96	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1996-97	117	16	89	186	1557	20	357	154	620	300	3416
1997-98	71	9	69	79	1367	57	360	79	404	157	2652
1998-99	71	10	149	85	1484	30	173	110	493	335	2940
1999-00	16	3	174	50	604	154	92	250	244	166	1753
2000-01	86	14	201	183	740	411	386	217	214	314	2766
2001-02	43	10	460	460	1000	385	45	80	137	110	2730
2002-03	33	6	241	130	590	126	163	75	30	146	1540
2003-04	28	-	290	1518	3083	261	98	405	75	371	6130
2004-05	27	-	175	81	2571	216	128	150	40	444	3832
2005-06	28	2	610	280	1268	222	128	260	80	476	3354
2006-07	28	1	463	10	1129	234	20	274	120	583	2862
CGR	**-12.37**	**-22.35**	**16.95**	**-2.92**	**2.52**	**21.42**	**-18.35**	**7.71**	**-24.13**	**8.59**	**2.52**

Note: N.A. – Not available

Table: 2.11 District wise Area Under All Citrus Fruit in Himachal Pradesh during 1994-95 to 2006-07.

(Area in Ha.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamirpur	H.P.
1994-95	760	352	5088	1251	16440	3576	3182	3151	2152	2371	38323
1995-96	764	357	5131	1282	16528	3606	3190	3157	2169	2411	38595
1996-97	766	358	5116	1294	16579	3627	3132	2928	2150	2419	38369
1997-98	768	361	5139	1321	16739	3634	3141	2933	2172	2427	38635
1998-99	769	361	5147	1324	16783	3635	3143	2944	2177	2429	38711
1999-00	771	361	5198	1342	17043	3642	3156	2978	2209	2438	39138
2000-01	775	361	5246	1356	17369	3676	3180	2992	2221	2451	39627
2001-02	795	368	5257	1384	17693	3719	3237	3001	2252	2468	40174
2002-03	504	79	4179	603	8568	801	1555	861	1465	1169	19784
2003-04	519	85	4225	611	8824	817	1600	878	1490	1212	20261
2004-05	525	85	4232	613	8900	823	1617	882	1497	1228	20402
2005-06	532	85	4247	631	9089	838	1624	896	1533	1254	20729
2006-07	571	86	4267	644	9248	854	1658	915	1575	1300	21118
C.G.R	**-3.86**	**-15.79**	**-2.26**	**-7.90**	**-6.68**	**-16.10**	**-7.33**	**-13.51**	**-3.82**	**-7.21**	**-6.90**

Table: 2.12 District wise Production of All Citrus Fruits in Himachal Pradesh during 1994-95 to 2006-07.

(Production in M.T.)

Year	Shimla	Kullu	Mandi	Chamba	Kangra	Solan	Sirmour	Bilaspur	Una	Hamir pur	H.P.
1994-95	3	5	68	45	5093	35	908	62	377	69	6665
1995-96	55	10	62	25	4462	29	571	154	406	60	5839
1996-97	136	26	129	236	10273	52	1072	281	1196	433	13834
1997-98	86	20	109	133	9155	92	1014	180	793	177	11759
1998-99	85	22	225	124	10565	79	585	195	767	464	13111
1999-00	25	5	273	61	6913	215	289	312	868	296	9257
2000-01	121	29	354	319	5295	886	1576	720	1062	706	11068
2001-02	56	142	907	791	14815	704	455	228	1976	391	20465
2002-03	115	21	603	222	12123	490	1042	139	935	337	16027
2003-04	115	10	530	2264	21246	569	470	495	1721	701	28121
2004-05	94	13	380	183	24906	484	559	240	935	760	28554
2005-06	95	12	1262	569	23638	510	584	374	1306	809	29159
2006-07	95	7	879	30	8001	608	397	441	1188	1024	12670
C.G.R.	**13.33**	**0.73**	**23.28**	**13.07**	**9.97**	**27.86**	**4.48**	**9.59**	**8.41**	**19.35**	**10.22**

Chapter – 3

SOCIO-ECONOMIC PROFILE OF SAMPLED ORCHARDISTS

In this chapter, socio-economic characteristics of the sampled citrus fruit orchardists of Kangra and Sirmour districts have been discussed. Socio-economic conditions provide the basis for understanding the background of the sampled orchardists. Such conditions influence the process followed in the marketing of produce to a great extent. It is in this context that the demographic structure i.e. size of family, sex ratio, education and economic factors like land utilization pattern, area under different fruits and number of plants in orchard etc have been discussed.

Size of Family

The population distribution of sampled households is given in Table 3.1 wherein it may be seen that out of the total population of 253 persons, 46.24 per cent were males, 35.18 per cent females, and rest 18.58 per cent were children. The population of sampled households of Kangra district comprised of 178 persons out of which 45.50 percent were males, 36.52 percent females and 17.98 percent children. In Sirmour district out of 75 persons, 48 per cent males, 32 per cent females and 20 per cent were children. At overall level the average family size of citrus fruit orchardists was 4.52 persons comprising of 2.08 males, 1.59 females and 0.84 children. In Kangra district the average size of family was 4.45 persons comprising of 2.03 males, 1.62 females and 0.80 children, whereas in Sirmour district the average family size was 4.69 persons.

Work Force

The availability of labour has been presented in Table 3.2 which shows that at overall level about 80.34 percent of adult males and 79.72 percent adult females were workers. In Kangra district about 85.18 percent males and 80 per cent females were workers In Sirmour district 69.44 per cent males and 79.16 per cent adult females were workers. In both the districts no child has been involved in full time work in economic activities. The dependency ratio was marginally higher in Sirmour district (1.7 non workers per worker) than that of Kangra district (1.47) and at over all level it was 1.53.

Educational Status

The proportion of literates in the given population is an indicator of the quality of manpower. The educational level of members of the sampled families has been presented in Table 3.3 which reveals that about 97.04 per cent population was literate. In Kangra district entire population was literate whereas in Sirmour district 90.27 per cent population was literate. The most prevalent standard of education was observed to be matriculate followed by primary. The literacy among females was less than males in Sirmour district. However, the situation was better in district Kangra.

Land Utilization Pattern

The economic activity of a region or a country, industrial or agricultural, mainly depends on the quantum of land resources available and the manner in which these are used. The land utilization pattern indicates the extent of use of land under different purposes. Table 3.4 presents such details per sampled orchardists. The perusal of the table reveals that higher quantum of area was devoted to orchard raising as compared to field crops which may be due to higher profitability of fruits especially in district Kangra where orchard occupied 71.54 per cent of the cultivated land. In Sirmour district about 14 percent of total cultivated land was under orchards.

Area Under Different Fruits

The variety and fruits grown in any area depend on climate, type of soil, availability of water, topography etc. It was intended to study the system of marketing of citrus fruits in the study area, hence, in addition to citrus fruits, the other fruits of the area like mango, litchi and loquat etc have been clubbed to gather 'as other fruits'. Table 3.5 presents the area under different fruits on sampled orchardists. Table reveals that at overall level about 74 per cent of the total fruit area was under citrus fruits. More than 90 per cent of the area under fruits in Sirmour district was occupied by citrus fruits alone. However, in Kangra people also grow other fruits like mango, litchi, guava etc. due to their high profitability and lower risk involved.

Among citrus fruits Kinnow ranked first in both the districts, followed by Sangtra, lemon and Galgal. This is due to the fact that there are no separate orchards of lemon and Galgal but these are interspersed with Sangtra and Kinnow orchards. In Sirmour district Kinnow is most popular fruit.

Number of Plants in Orchard

The proportion of bearing and non-bearing trees in the orchard determines the quantum of present and the likely future production. In Kangra district, the proportion of non-bearing trees is very small

as most of the area was brought under orchards long back and not much scope is left for fresh plantation. The owners of some old orchards also plan to replace the old trees which have low yield. In Kangra a large orchard had 367 bearing tree and 68 non bearing tree of Kinnow and 116 bearing and 17 non-bearing tree of Sangtra, 4 plants of Galgal and 13 plants of lemon as shown in Table 3.6. In Kangra district on average citrus fruit orchards has 143 bearing and 18 non-being citrus fruit plants in which 103 are from Kinnow and 32 are Malta and about 2.5 plants of Galgal and 7 plants of lemon. Number of plants and farm size has positive relation in Kangra district. The same trend also observed in case of Sirmour district. In Sirmour district average number of plants per orchard is lesser than Kangra. On an average, an orchard has 65 bearing and 13 non bearing citrus fruit plants. It was reported by the farmers in Sirmour district that due to low returns in Kinnow and Sangtra farmers uprooted the trees and diverted land towards other field and fruit crops like vegetable and mango because of higher return from these crops in comparison to citrus fruit crops.

Utilization Pattern of Kinnow & Malta

The study of utilization pattern of citrus fruits produced is important aspects for planning to marketing. Utilization pattern of Kinnow and Malta in district Kangra and Sirmour is present in Tables 3.7 and 3.8, respectively. The Kinnow and Malta is used for home consumption, gift to relatives and friends and rest of quantity sold in market. In Kangra 1.60 percent Kinnow and 3.41 per cent Malta was used for home consumption and 1.10 percent Kinnow and 2.77 per cent Malta gifted to others. Rest 97.3 per cent Kinnow and 93.82 Malta sold out (Table 3.7). In Sirmour 93.85 per cent Kinnow 79.35 Malta sold in market and rest use for home consumption and for gifts.

Table: 3.1 Family Size and Structure of sampled households..

Size of holding	Sample size	Adult Male			Adult female			Children			Total		
		No	% to total	Per family	No	% to total	Per family	No	% to total	Per family	No	% to total	Per family
District Kangra													
Marginal	10	18	43.90	1.80	13	31.70	1.3	10	24.39	1.00	41	100.0	4.10
Small	17	37	47.44	2.18	28	35.90	1.65	13	16.67	0.76	78	100.0	4.59
Medium	10	20	48.78	2.00	16	39.02	1.60	5	12.19	0.50	41	100.0	4.10
Large	3	6	33.33	2.00	8	44.44	2.66	4	22.22	1.33	18	100.0	6.00
All	40	81	45.50	2.03	65	36.52	1.62	32	17.98	0.80	178	100.0	4.45
District Sirmour													
Marginal	9	18	41.86	2.00	12	27.91	1.33	13	30.23	1.44	43	100.0	4.78
Small	5	11	52.38	2.20	10	47.62	2.00	-	-	-	21	100.0	4.20
Medium	2	7	63.64	3.5	2	18.18	1.00	2	18.18	1.00	11	100.0	5.50
Large	-	-	-	-	-	-	-	-	-	-	-	100.0	-
All	16	36	48.00	2.38	24	32.00	1.50	15	20.00	0.94	75	100.0	4.69
Overall-													
Marginal	19	36	42.86	1.89	25	29.76	1.32	23	27.38	1.21	84	100.0	4.42
Small	22	48	48.48	2.18	38	38.38	1.73	13	13.13	0.60	99	100.0	4.50
Medium	12	27	51.92	2.25	18	34.61	1.50	7	13.46	0.50	52	100.0	4.33
Large	3	6	33.33	2.00	8	44.44	2.67	4	22.22	1.33	18	100.0	6.00
All	56	117	46.24	2.08	89	35.18	1.59	47	18.58	0.84	253	100.0	4.52

Table: 3.2 Working Force of Sampled Orchardists.

Size of holding	Adult Male			Adult female			Children			Total		
	Total popu-lation	No of workers	Percent age	Total popu-lation	No of workers	Percent age	Total popu-lation	No of workers	Percent age	Total popu-lation	No of workers	Percent age
District Kangra												
Marginal	18	17	94.44	13	13	100.0	10	-	-	41	30	73.17
Small	37	36	97.29	28	25	89.28	13	-	-	78	61	78.20
Medium	20	12	60.00	16	9	56.25	5	-	-	41	21	51.21
Large	6	4	66.66	8	5	62.50	4	-	-	18	9	50.00
All	81	69	85.18	65	52	80.00	32	-	-	178	121	67.97
District Sirmour												
Marginal	18	13	72.22	12	11	91.66	13	-	-	43	24	55.81
Small	11	8	72.72	10	7	70.00	-	-	-	21	15	71.42
Medium	7	4	57.14	2	1	50.00	2	-	-	11	5	45.45
Large	-	-	-	-	-	-	-	-	-	-	-	-
All	36	25	69.44	24	19	79.16	15	-	-	75	44	58.66
Overall												
Marginal	36	30	83.33	25	24	96.00	23	-	-	84	54	64.28
Small	48	44	91.66	38	32	84.21	13	-	-	99	76	76.76
Medium	27	16	59.26	18	10	55.55	7	-	-	52	26	50.00
Large	6	4	66.66	8	5	62.50	4	-	-	18	9	50.00
All	117	94	80.34	89	71	79.72	47	-	-	253	165	65.21

Table: 3.3 Education Status of sampled households.

Contents	Kangra			Sirmour			Total		
	M	**F**	**Total**	**M**	**F**	**Total**	**M**	**F**	**Total**
Infant (up to 5 years)	6 (6.06)	7 (8.86)	13 (7.30)	1 (2.38)	2 (6.06)	3 (4.00)	7 (4.96)	9 (8.04)	16 (6.32)
Illiterate	-	-	-	3 (7.14)	4 (12.12)	7 (9.33)	3 (2.13)	4 (3.57)	7 (2.77)
Primary	11 (11.11)	19 (24.05)	30 (16.85)	7 (16.67)	10 (30.31)	17 (22.67)	18 (12.76)	29 (25.89)	47 (18.58)
Middle	9 (9.09)	11 (13.93)	20 (11.23)	8 (19.05)	8 (24.24)	16 (21.34)	17 (12.06)	19 (16.96)	36 (14.23)
Matriculate	28 (28.28)	22 (27.85)	50 (28.09)	15 (35.72)	6 (18.18)	21 (28.00)	43 (30.50)	28 (25.00)	71 (28.06)
Intermediate	17 (17.17)	4 (5.06)	21 (11.80)	5 (11.90)	1 (3.03)	6 (8.00)	22 (15.60)	5 (4.47)	27 (10.67)
Graduate	18 (18.18)	10 (12.66)	28 (15.73)	1 (2.38)	2 (6.06)	3 (4.00)	19 (13.48)	12 (10.72)	31 (12.25)
Post graduate	3 (3.03)	5 (6.33)	8 (4.50)	1 (2.38)	-	1 (1.33)	4 (2.84)	5 (4.46)	9 (3.56)
Technical education	7 (7.07)	1 (1.26)	8 (4.50)	1 (2.38)	-	1 (1.33)	8 (5.67)	1 (0.89)	9 (3.56)
Total population	99 (100.0)	79 (100.0)	178 (100.0)	42 (100.0)	33 (100.0)	75 (100.0)	141 (100.0)	112 (100.0)	253 (100.0)
Literacy %	100.0	100.0	100.0	92.68)	77.42	90.27	97.76	96.11	97.04

Note: Figures in parentheses showing the percentage to total.

Table: 3.4 Land Utilization Pattern of sampled farm households.

(Area in hectare)

Size of Holdings	Land Uses							
	Field crops	Orchards	Ghasni	Current fellow	Long fellow	Barren	Total	Average size of holding
Kangra districts								
Marginal	1.60 (18.78)	6.92 (81.22)	-	-	-	-	8.52 (100.0)	0.85
Small	7.24 (29.24)	17.52 (70.76)	-	-	-	-	24.76 (100.0)	1.63
Medium	4.84 (18.79)	17.72 (68.79)	3.20 (12.42)	-	-	-	25.76 (100.0)	2.58
Large	4.80 (28.04)	12.32 (71.96)	-	-	-	-	17.12 (100.0)	5.71
All	18.48 (24.26)	54.48 (71.54)	3.20 (4.20)	-	-	-	76.16 (100.0)	1.90
Sirmour districts								
Marginal	3.04 (46.34)	3.52 (53.66)	-	-	-	-	6.56 (100.0)	0.73
Small	4.64 (72.50)	1.76 (27.50)	-	-	-	-	6.40 (100.0)	1.28
Medium	5.52 (86.25)	0.88 (13.75)	-	-	-	-	6.40 (100.0)	3.20
Large	-	-	-	-	-	-	-	-
All	13.20 (68.18)	6.16 (31.82)	-	-	-	-	19.36 (100.0)	1.21
Overall								
Marginal	4.64 (30.77)	10.44 (69.23)	-	-	-	-	15.08 (100.0)	0.79
Small	11.88 (38.13)	19.28 (61.87)	-	-	-	-	31.16 (100.0)	1.41
Medium	10.36 (32.21)	18.60 (57.84)	3.20 (9.95)	-	-	-	32.16 (100.0)	2.68
Large	4.80 (28.04)	12.32 (71.96)	-	-	-	-	17.12 (100.0)	5.71
All	31.68 (33.17)	60.64 (63.48)	3.20 (3.35)	-	-	-	95.52 (100.0)	1.70

Note: Figures in parentheses showing the percentage to total land.

Table: 3.5 Area Under Different Fruits on sampled orchardists.

(Ha/Farm)

Holding size	Sample size	Area under citrus fruit					Area under other fruits	Total area under fruit
		Sangtra	Kinnow	Galgal	Limon	Total		
Kangra districts								
Marginal	10	0.08 (11.59)	0.27 (39.13)	0.02 (2.90)	0.03 (4.35)	0.40 (57.97)	0.29 (42.03)	0.69 (100.0)
Small	17	0.18 (17.48)	0.53 (51.46)	0.015 (1.45)	0.015 (1.45)	0.74 (71.84)	0.29 (28.16)	1.03 (100.0)
Medium	10	0.38 (21.47)	0.86 (48.59)	0.02 (1.13)	0.04 (2.26)	1.30 (73.45)	0.47 (26.55)	1.77 (100.0)
Large	3	1.00 (24.33)	2.25 (54.74)	0.03 (0.73)	0.05 (1.22)	3.33 (81.02)	0.78 (18.98)	4.11 (100.0)
All	40	0.26 (19.12)	0.68 (50.00)	0.02 (1.47)	0.03 (2.20)	0.99 (72.79)	0.37 (27.21)	1.36 (100.0)
Sirmour districts								
Marginal	9	0.03 (7.69)	0.27 (69.24)	0.01 (2.56)	0.02 (5.13)	0.33 (84.62)	0.06 (15.38)	0.39 (100.0)
Small	5	0.06 (17.14)	0.28 (80.00)	-	0.01 (2.86)	0.35 (100.0)	-	0.35 (100.0)
Medium	2	-	0.41 (93.18)	0.01 (2.27)	0.015 (4.55)	0.44 (100.0)	-	0.44 (100.0)
Large	-	-	-	-	-	-	-	-
All	16	0.04 (10.53)	0.29 (76.32)	Neg.	0.018 (5.26)	0.35 (92.11)	0.03 (7.89)	-
Overall								
Marginal	19	0.06 (10.90)	0.27 (49.09)	0.02 (3.64)	0.02 (3.64)	0.37 (67.27)	0.18 (32.73)	0.55 (100.0)
Small	22	0.15 (17.24)	0.47 (54.02)	0.01 (1.15)	0.01 (1.15)	0.64 (73.56)	0.23 (26.44)	0.87 (100.0)
Medium	12	0.32 (20.64)	0.78 (50.32)	0.02 (1.29)	0.03 (1.94)	1.15 (74.19)	0.40 (25.81)	1.55 (100.0)
Large	3	1.00 (24.33)	2.25 (54.74)	0.03 (0.73)	0.05 (1.22)	3.33 (81.02)	0.78 (18.98)	4.11 (100.0)
All	56	0.20 (18.52)	0.57 (52.78)	0.01 (0.93)	0.02 (1.85)	0.80 (74.08)	0.28 (25.92)	1.08 (100.0)

Note: Figures in parenthesis showing the percentage to total land.

Table: 3.6 Total Number of Fruit Plants Per Orchard.

Holding size	Name of the citrus fruits										Other fruits		Total fruits	
	Sangtra		Kinnow		Galgal		Lemon		Total					
	B	NB	B	NB	B	NB	B	NB	B	NB	B	NB	B	NB
Kangra districts														
Marginal	14.5 (19.46)	2 (33.33)	25 (33.56)	-	3.0 (40.27)	-	7 (9.40)	-	49.5 (66.44)	2 (33.33)	25 (33.56)	4 (66.67)	74.50 (100.0)	6 (100.0)
Small	21.76 (15.95)	1.76 (11.50)	91.76 (67.25)	11.76 (76.86)	1.76 (1.29)	-	3.53 (2.59)	-	118.81 (87.07)	13.52 (88.37)	17.64 (12.93)	1.77 (11.57)	136.45 (100.0)	15.30 (100.0)
Medium	40 (19.70)	5 (22.73)	120 (59.11)	15 (68.18)	3 (1.47)	-	10 (4.93)	-	173 (85.22)	20 (90.91)	30 (14.78)	2 (9.09)	203 (100.0)	22 (100.0)
Large	116.67 (20.21)	16.67 (17.86)	366.67 (63.51)	66.67 (71.43)	4.00 (0.69)	-	13.33 (2.31)	-	500.66 (86.72)	83.33 (89.28)	76.67 (13.28)	10.00 (10.71)	577.33 (100.0)	93.33 (100.0)
All	31.50 (18.48)	3.75 (18.68)	102.75 (60.29)	13.75 (68.51)	2.42 (1.42)	-	6.75 (3.96)	-	143.42 (84.16)	17.50 (87.19)	27 (15.84)	2.57 (12.80)	170.42 (100.0)	20.07 (100.0)
Sirmour districts														
Marginal	5.55 (8.89)	1.55 (12.24)	44.44 (71.19)	11.11 (87.76)	1.33 (2.13)	-	4.44 (7.11)	-	55.76 (89.33)	12.66 (100.0)	6.66 (10.67)	-	62.42 (100.0)	12.66 (100.0)
Small	10.40 (14.29)	3.2 (21.05)	60 (82.42)	12 (78.95)	-	-	2.40 (3.30)	-	72.80 (100.0)	15.20 (100.0)	-	-	72.80 (100.0)	15.20 (100.0)
Medium	-	-	80 (93.02)	10 (100.0)	2 (2.32)	-	4 (4.65)	-	86 (100.0)	10 (100.0)	-	-	86 (100.0)	10 (100.0)
Large	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All	6.37 (9.28)	1.87 (14.25)	53.75 (78.33)	11.25 (85.75)	1 (1.45)	-	3.75 (5.46)	-	64.87 (94.53)	13.12 (100.0)	3.75 (5.47)	-	68.62 (100.0)	13.12 (100.0)

Note: Figures in percentage sharing the percentage to total plant.
B = Bearing NB = Non Bearing.

Table: 3.7 Utilization Pattern of Kinnow and Malta on Sampled farm of Kangra District of Himachal Pradesh.

(Qty.in kg.)

Farm Size	Total Production	Home Consumption	Gift etc. kg.	Sold in market	Sold to pre-harvest contractor
Kinnow					
Marginal	15560 (100.0)	801 (5.14)	280 (1.80)	1478 (9.50)	13001 (83.55)
Small	70200 (100.0)	1160 (1.65)	880 (1.25)	4056 (5.78)	64104 (91.32)
Medium	63600 (100.0)	980 (1.54)	635 (1.00)	18765 (29.50)	43220 (67.96)
Large	59400 (100.0)	380 (0.64)	520 (0.87)	392.80 (66.13)	19220 (32.36)
Total	208760 (100.0)	3321 (1.60)	2315 (1.10)	63579 (30.45)	139545 (66.85)
Malta (Sangtra)					
Marginal	4560 (100.0)	600 (13.15)	260 (5.70)	370 (8.11)	3330 (73.04)
Small	22500 (100.0)	1020 (4.53)	850 (3.78)	1214 (5.40)	19416 (86.29)
Medium	28490 (100.0)	780 (2.74)	560 (1.96)	8154 (28.58)	19005 (66.72)
Large	23400 (100.0)	300 (1.28)	520 (2.22)	15053 (64.33)	75.27 (32.17)
Total	78950 (100.0)	2700 (3.41)	2190 (2.77)	24782 (31.40)	49278 (62.42)

Note: Figures in parenthesis showing the percentages to total production.

Table: 3.8 Utilization Pattern of Kinnow and Malta on Sampled farm of Sirmour District of Himachal Pradesh.

(Qty. in Kg.)

Farm Size	Total Production	Home Consumption	Gift etc. kg.	Sold in market	Sold to pre-harvest contractor
Kinnow					
Marginal	14880 (100.0)	540 (3.63)	380 (2.55)	9306 (62.54)	4654 (31.28)
Small	9520 (100.0)	400 (4.20)	315 (3.30)	5283 (55.50)	3522 (37.00)
Medium	6400 (100.0)	160 (2.50)	100 (1.56)	3070 (47.97)	3070 (47.97)
Large	-	-	-	-	-
Total	30800 (100.0)	1100 (3.57)	795 (2.58)	17659 (57.34)	11246 (36.51)
Malta					
Marginal	1760 (100.0)	200 (11.36)	150 (8.53)	1010 (57.38)	400 (22.73)
Small	1800 (100.0)	205 (11.38)	180 (10.00)	849 (47.17)	566 (31.45)
Medium	-	-	-	-	-
Large	-	-	-	-	-
Total	3560 (100.0)	405 (11.38)	330 (9.27)	1859 (52.22)	966 (27.13)

Note: Figures in parenthesis showing the percentages to total production.

Chapter – 4

GENERAL FEATURES OF THE MARKETS UNDER STUDY

The present study was assigned to Agro-Economic Research Centre by Directorate of Horticulture and proposed to include the markets viz Chandigarh, Dehradun in Uttrakhand., Yamuna Nagar in Haryana, Poanta Sahib and Jassure in Himachal Pradesh and Pathankot in Punjab in the study. These markets are near the citrus fruit growing areas of Himachal Pradesh. The Himachal citrus fruit is also sent to other markets but are not included in the present study. All the markets covered under study are regulated.

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

1. Secretary, Market Committee, Grain market, Sector-16, Chandigarh.
2. Secretary, Naveen Mandi Asthal, Mandi Samiti, Niranjan pur, Dehradun (Uttrakhand)
3. Secretary, Market Committee, Jagadhari – Yamuna Nagar, Haryana.
4. Secretary, Market Committee, Poanta Sahib, Distt. Sirmour, Himachal Pradesh
5. Secretary, Market Committee, Jassure Market, District Kangra, Himachal Pradesh.
6. Secretary, Fruit and Vegetable Market, Chakki Bank, Pathankot (Punjab)

Regulation of Market

The technology break through in Indian Agriculture has brought about spectacular increase in yield level. 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 an important role in determining the prices for the farmer. Unless marketing improves, no incentive to increase production will attract the orchardists. This is all the more important in the case of perishables which

can not be stored for long periods. 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, by and large, all traditional charges/costs continue, market fee seems to have become an additional burden. No doubt, under the market Regulation Acts, in many 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 and serious efforts are essential.

Facilities Available in the Market

All basic amenities were available in all the markets under study. The details regarding facilities available in the market are presented in Table 4.1. Table shows that market yard, suitable space for auction, covered shed for temporary storage and sanitation facilities are available in all the markets under study. Storage facilities are available only in Dehradun market.

Table 4.2 shows that the market intelligence facilities in the selected markets. Telephone and market intelligence cell were available in all markets but telex is available only in Dehradun. S.T.D. is available in Chandigarh, Dehradun, Yamuna Nagar, Poanta Sahib, Jassur and Pathankot. A facility of fax was not available in any selected market.

Facilities Provided by Traders

Growers and dealers coming from distant places face no problem for night halt in any market under study. Commission agents or wholesalers feel happy to oblige their big clients by way of arranging for their boarding and lodging. In general, under rules, commission agents are not allowed to charge commission from sellers but in general practice it was noticed that commission agents were charging commission both from sellers as well as buyers. Table 4.3 shows the facilities provided by trader in selected markets. Table also shows that boarding, lodging, storage, transportation, advance payment, market information etc. were provided to sellers in all the markets.

Mode of Payments

It was observed during the course of investigation that as a rule commission agent will have to pay full amount of sale to seller just after the sale is over and relies the same from the purchasers with in two weeks. But it was observed that in practice the period of payment depends on mutual

relationship. The mode of payment also varied based on the desire of seller and can be cash, cheque or demand draft.

Working Hours

Normally, in a regulated Mandi the working hours are dictated by market committee but in practice these can be observed only with the cooperation of the local functionaries. Generally the market committee has fixed the working hours in consultation with the traders unions and no case of breach was reported in any market. Table 4.4 shows the working hours of the Mandies under study. Generally, in all the markets business transactions start in the morning and end by noon. The evening Mandi are observed in Pathankot. The traders generally arrive in the market before time. All commodities are put on the selling plate form. Every commission agent has a fixed place where he usually displays his commodities for sale. It is generally observed during the course of investigation that all the transactions are completed by noon in all the markets.

Closed Days

It was observed that some markets were closed weekly, some fortnightly and some monthly. Table 4.5 indicates the closing days of each market under study. Table shows that Chandigarh, Dehradun, Poanta Sahib are remains closed on Monday, Saturday and Sunday respectively. While Pathan Kot on Ist and 14th of every month. Only one market Yamuna nagar closes on last day of the month. The other holidays are 15th August & 26th January and in addition to that some also closed down on Diwali, Holi and Baishaki etc. in addition to the regular holidays.

Table: 4.1 Physical Facilities Available in the Selected Markets.

Name of the market	Market yard	Suitable space for auction	Covered shed for temporary storage	Storage	Sanitation
Chandigarh	X	X	X	-	X
Dehradun	X	X	X	X	X
Yamuna Nagar	X	X	X	-	X
Poanta Sahib	X	X	-	-	X
Jassur	X	X	-	-	X
Pathan Kot	X	x	x	-	X

X = Indicates presence

Table: 4.2 Market Intelligence Facilities Available in the Selected Markets.

Name of the market	Telex	STD	FAX	Telephone	Market intelligence cell
Chandigarh	-	X	-	X	X
Dehradun	X	X	-	X	X
Yamuna Nagar	-	X	-	X	X
Poanta Sahib	-	X	-	X	X
Jassur	-	X	-	X	X
Pathan Kot	-	x	-	X	X

X = Indicates presence.

Table: 4.3 Facilities Provided by the Traders in Selected Markets.

Name of the market	Boarding and lodging	Storage of fruit	Transportation of fruit	Advance payment	Market information	Mode of payments		
						Cash	D.D.	Cheque other
Chandigarh	X	X	X	X	X	X	X	X
Dehradun	X	X	X	X	X	X	X	X
Yamuna Nagar	X	X	X	X	X	X	X	X
Poanta Sahib	X	X	X	X	X	X	X	X
Jassur	X	X	X	X	X	X	X	X
Pathan Kot	X	X	X	X	X	X	X	X

X = Indicates presence

Table: 4.4 Working Times of the Selected Markets.

Name of the Market	Morning		Evening	
	From	To	From	To
Chandigarh	5 AM	10 AM	-	-
Dehradun	6 AM	11 AM	-	-
Yamuna Nagar	6 AM	11 AM	-	-
Poanta Sahib	6 AM	11 AM	-	-
Jassur	6 AM	11 AM	-	-
Pathan Kot	6 AM	1 PM	6 PM	9 PM

Table: 4.5 Holidays in the Selected Markets.

Name of the market	Weekly	Fortnightly	Monthly	Other holidays
Chandigarh	Monday	-	-	15 Aug. & 26 January
Dehradun	Sunday	-	-	15 Aug. & 26 January
Yamuna Nagar	-	-	Last day of the month	15 Aug. & 26 January
Poanta Sahib	Sunday	-	-	Holi, Diwali, 15 Aug. 26 January
Jassur	Sunday	-	-	Holi, Diwali, 15 Aug. 26 January
Pathan Kot	-	Ist & 14th of every month	-	Diwali, Baishaki 15 August & 26 January

Chapter – 5

MARKETING SYSTEMS OF KINNOW AND SANGTRA IN HIMACHAL PRADESH

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 the 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. This chapter is divided broadly into three parts. Part Ist deals with preparation of produce for market, Part IInd & IIIrd deals with marketing services and marketing channels and functionaries.

A. Preparation of Produce for the Market

All goods produced, whether agricultural or not, 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 concentrated 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.

Picking

Picking is the first and most important function in preparation of fruit for market. The proper picking of fruits 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 to decide perhaps requires the most skillful decision. If the fruits reach the market in an over ripened 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 vigour of properly ripened fruit. The stage of picking depends upon the time needed for making the fruit reach its destination and the speed with which it attain 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 right stage of maturity can reach the market in best form or not. Farmers do not know the scientific

methods used for determining the right stage of picking for a particular fruit, 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 those having large number of trees, have to employ hired labour to help them in this task. Pre harvest contractors which are popular in citrus fruit areas generally engage casual labour for the purpose. Citrus fruits are picked one by one, taking full care that the fruit is not damaged at this stage. Every care is taken that the fruit is not pulled because in that case the skin of the fruit gets damaged and that might become a cause of infection. Since citrus fruit plants are thorny, fruits from higher branches are not plucked by climbing. The picking from such branches is done with the help of a pole, the further end of which is fixed with a hook and a net. The picked fruits are collected in baskets hung on the back of the picker and brought to a cool place for assembling.

Assembling

Assembling of citrus fruits does not require any special skill because the skin of fruits is not so delicate. After the fruit is picked from the tree, it is put in a picking basket or gunny bag. In the same container, the fruits are assembled in the orchard for sorting/grading and packing.

Grading

Grading is a process of sorting out the produce into different uniform lots, in such a manner that the fruits within each lot have uniform size and quality characteristics. In most of the principal citrus fruit growing areas of the state, grading of citrus fruits is done according to size i.e. small, medium and large.

Packing

After grading, the fruits are packed in a suitable containers. The type of containers used for a particular fruits, generally depends on the type of fruit and the material available locally for the same. Packing means arranging of fruits in suitable containers in such a way that the produce is not damaged enroots and the consumers get good quality fruit at his place. In Himachal Pradesh Sangtra/Kinnow generally send to market in plastic crate. It was also observed from the field that some of the growers send their fruits in loose form to market in Gattu (Small truck) or tractor trolleys

B. Marketing Services

After the produce has been prepared for market, the same has to be transported and at times stored for a better market. Under the marketing operations transportation storage and financing are highlighted.

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 result in higher gains to the orchardists. The important modes of transport used by the citrus fruit growers of Himachal Pradesh is, (a) manual labour, b) tractor trolley, c) tempo, d) bus roof (c) Rehera and f) Trucks.

Storage

Storage is an essential function of marketing which add time utility to the commodities. Storage means holding the produce in appropriate protective 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. Thus, higher net return can be realized. Though fruits are in demand throughout the year, their 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, but are available in the consuming areas. It was learnt that Sangtra of Himachal Pradesh has loose skin which shrinks in cold stores and hence, makes it unsuitable for cold storing.

Financing

Farmers and pre harvest contractors need finance to perform market functions like picking, packing, grading, packing, transportation and storage etc. Functionaries revealed that in fruit marketing, it is one's 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 who they

patronize this usually leads to the exploitation of farmers. Further the survey revealed that in all the markets no bank had any programme to finance fruit growers for marketing on easy terms.

C. Marketing Channels and Functionaries

The sequence of agencies through which the produce reaches the consumer is called the channel of its movement or the "marketing channel" concentration of fruit production in specialized pockets coupled with their consumption spread all over the country, renders fruit marketing essentially a matter of skill. The main channels through which, citrus fruits reaches fruit consumers are as follows.

1. Producer – Consumer
2. Producer – Retailer – Consumer.
3. Producer – Per harvest contractor – commission agent/wholesaler – retailer- consumer.
4. Producer (self as forwarding agent) commission agent-wholesaler-retailer-consumer.
5. Producer-Processor-Dealers-Retailer-Consumer.
6. Producer-Local trader-commission agent/wholesaler-retailer-consumer.

The channel 4 has been observed to be the most popular channel and price spread of the different fruits in different markets under study have been worked out for this channel.

Functionaries

a. Pre-harvest Contractor

The phenomenon of selling the standing crops to contractors is common in citrus fruit growing areas of Himachal Pradesh as more than 80 per cent of the sample orchardists of Kangra sold their crop to pre-harvest contractor. The pre-harvest contractors undertake the entire marketing functions involved such as picking of the fruits, grading, packing arrangement of transportation and selling the crop etc. Normally, such agreements are entered into for one crop season and the amount agreed to is paid to the grower in instalments. Such details are given in Table 5.5 and 5.6 wherein it may be seen that in majority of the cases, the amount was paid to orchardists in three instalments. However, in case of small farmers, the payments are made even in one instalment. Most of such contracts are finalized in the month of September and October.

The reasons for contracting out the orchards were ascertained from the growers. The main reason attributed was to avoid the market risk as well as other marketing problem (Table 5.7). Another

important reason ascribed by the farmers was that they remain busy in other agricultural operations on the farm and are unable to spare time to undertake marketing operations. Moreover, the pre-harvest contractors are specialized persons in undertaking the marketing of fruits and also they enjoy the economy of scale by contracting number of orchards. Thus, they handle the marketing of fruits efficiently as compared to growers.

(b) Commission Agents/Wholesalers

It has been observed that in all the states viz Haryana, Punjab, U.P. Chandigarh and Himachal Pradesh, generally the same firm 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 wholesaler/commission agents also act as retailers in small markets. 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. But in practice, it was observed that the commission agent/wholesalers were performing something more than this. They (i) arrange 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 payment to the sellers, with or without having received the same from the purchaser.

(c) Mashakhors

Mashakhors are the small wholesalers or big retailers who purchase fruit and vegetable through commission agent and re-sell by negotiation the same to the retailers or to such consumers who need relatively bigger quantities. It was observed that some small commission agents/wholesalers also acts as Mashakhors.

On the arrival of fruit in the wholesale market, many functionaries like porters, weighmen, brokers etc. help in its marketing.

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.

Table 5.1 Packing material used by sampled growers of Kangra district.

Orchardists Size	Farmers						Pre-harvest contractor					
	Plastic crate	Gunny bag	Polithin bag	Cfb carton	Loose	Total qty marketed	Plastic crate	Gunny bag	Polithin bag	Cfb carton	Loose	Total qty marketed
Kinnow												
Marginal												
Qty. Kg	887	295.50	-	-	295.50	1478	-	-	-	-	-	13001
%	60.0	20.00	-	-	20.00	100.0	-	-	-	-	-	
Small												
Qty. Kg	2840	203	608	-	405	4056	-	-	-	-	-	64104
%	70.00	5.00	15.00		10.00	100.0	-	-	-	-	-	
Medium												
Qty. Kg	14074	938	2815	-	938	18765	-	-	-	-	-	43220
%	75.00	5.00	15.00	-	5.00	100.0	-	-	-	-	-	
Large												
Qty. Kg	19640	3928	7856	-	7856	392.80	-	-	-	-	-	19220
%	50.00	10.00	20.00	-	20.00	100.0	-	-	-	-	-	
Total												
Qty. Kg	37441	5364.5	11279	-	9494.50	63579	41864	279.09	41864	13954	13954	139545
%	58.89	8.44	17.74	-	14.93	100.0	30.00	20.00	30.00	10.00	10.00	100.0
Malta/Sangtra												
Marginal												
Qty. Kg	-	370	-	-	-	370	-	-	-	-	-	3330
%	-	100.0	-	-	-	100.0	-	-	-	-	-	-
Small												
Qty. Kg	607	607	-	-	-	1214	-	-	-	-	-	19416
%	50.0	50.00	-	-	-	100.0	-	-	-	-	-	-
Medium												
Qty. Kg	4077	815	3262	-	-	8154	-	-	-	-	-	19416
%	50.00	10.00	40.00	-	-	100.0	-	-	-	-	-	-
Large												
Qty. Kg	6021	3010	3010	-	3010	15053	-	-	-	-	-	7525
%	40.00	20.00	20.00	-	20.00	100.0	-	-	-	-	-	-
Total												
Qty. Kg	10706	4802	6273	-	3010	24791	24639	9856	9856	-	4927	49278
%	43.18	19.37	25.30	-	12.14	100.0	50.00	20.00	20.00	-	10.00	100.0

Table 5.2 Packing material used by sampled growers of Sirmour district.

Orchardists Size	Farmers						Pre-harvest contractor					
	Plastic crate	Gunny bag	Polithin bag	Cfb carton	Loose	Total qty marketed	Plastic crate	Gunny bag	Polithin bag	Cfb carton	Loose	Total qty marketed
Kinnow												
Marginal												
Qty. Kg	5584	3722	-	-	-	9306	-	-	-	-	-	4654
%	60.00	40.00	-	-	-	100.0	-	-	-	-	-	-
Small												
Qty. Kg	3170	1056.5	-	-	1056.5	5283	-	-	-	-	-	3522
%	60.00	20.00	-	-	20.00	100.0	-	-	-	-	-	
Medium												
Qty. Kg	1535	1228	-	-	307	3070	-	-	-	-	-	3070
%	50.00	40.00	-	-	10.00	-	-	-	-	-	-	
Large												
Qty. Kg	-	-	-	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-	-	-	-
Total												
Qty. Kg	10289	6006.5	-	-	1363.5	17659	7870	1688	-	-	1688	11246
%	58.26	34.02	-	-	7.72	100.0	70.00	15.00	-	-	15.00	100.0
Malta												
Marginal												
Qty. Kg	1010	-	-	-	-	1010	-	-	-	-	-	400
%	100.0	-	-	-	-	100.0	-	-	-	-	-	
Small												
Qty. Kg	849	-	-	-	-	849	-	-	-	-	-	566
%	100.0	-	-	-	-	100.0	-	-	-	-	-	
Medium												
Qty. Kg	-	-	-	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-	-	-	
Large												
Qty. Kg	-	-	-	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-	-	-	-
Total												
Qty. Kg	1859	-	-	-	-	1859	966	-	-	-	-	966
%	100.0	-	-	-	-	100.0	100.0	-	-	-	-	100.0

Table 5.3: Mode of Transport Used by Sample Orchardists of Kangra District.

Orchardists Size	Farmers						Pre-harvest contractor					
	Pickup ban	Tractor trolley	Truck	Bus roof	Auto	Total qty marketed	Pickup ban	Tractor trolley	Truck	Bus roof	Auto	Total qty marketed
Kinnow												
Marginal												
Qty. Kg	1331	-	-	147	-	1478	-	-	-	-	-	13001
%	90.00	-	-	10.00	-	100.0	-	-	-	-	-	
Small												
Qty. Kg	3244	812	-	-	-	4056	-	-	-	-	-	64104
%	80.00	20.00	-	-	-	100.0	-	-	-	-	-	
Medium												
Qty. Kg	15950	2815	-	-	-	18765	-	-	-	-	-	43220
%	85.00	15.00	-	-	-	100.0	-	-	-	-	-	
Large												
Qty. Kg	31424	7856	-	-	-	39280	-	-	-	-	-	19220
%	80.00	20.00	-	-	-	100.0	-	-	-	-	-	
Total												
Qty. Kg	51949	11483	-	147	-	63579	27910	41863	69772	-	-	139545
%	81.71	18.06	-	0.23	-	100.0	20.00	30.00	50.00	-	-	100.0
Malta												
Marginal												
Qty. Kg	222	-	-	148	-	370	-	-		-	-	3330
%	60.00	-	-	40.00	-	100.0	-	-		-	-	
Small												
Qty. Kg	972	121	-	121	-	1214	-	-		-	-	19416
%	80.00	10.00	-	10.00	-	100.0	-	-		-	-	
Medium												
Qty. Kg	6524	1630	-	-	-	8154	-	-		-	-	19416
%	80.00	20.00	-	-	-	100.0	-	-		-	-	
Large												
Qty. Kg	12043	-	3010	-	-	15053	-	-		-	-	7525
%	80.00	-	20.00	-	-	100.0	-	-		-	-	
Total												
Qty. Kg	19761	1751	3010	269	-	24791	24639	-	24639	-	-	49278
%	79.72	7.06	12.14	1.08	-	100.0	50.00	-	50.00	-	-	100.0

Table 5.4: Mode of Transport Used by Sample Orchardists of Sirmour District.

Orchardists Size	Farmers						Pre-harvest contractor					
	Pickup ban	Tractor trolley	Truck	Bus roof	Auto	Total qty marketed	Pickup ban	Tractor trolley	Truck	Bus roof	Auto	Total qty marketed
Kinnow												
Marginal												
Qty. Kg	4188	-	-	2327	2791	9306	-	-	-	-	-	4654
%	45.00	-	-	25.00	30.00	100.0	-	-	-	-	-	
Small												
Qty. Kg	2641	528	-	1057	1057	52.83	-	-	-	-	-	3522
%	50.00	10.00	-	20.00	20.00	100.0	-	-	-	-	-	
Medium												
Qty. Kg	1995	614	-	-	461	3070	-	-	-	-	-	3070
%	65.00	20.00	-	-	15.00	100.0	-	-	-	-	-	
Large												
Qty. Kg	-	-	-	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-	-	-	-
Total												
Qty. Kg	8824	1142	-	3384	4309	17659	7872	562	2812	-	-	11246
%	49.97	6.47	-	19.16	24.40	100.0	70.00	5.00	25.00	-	-	100.0
Malta												
Marginal												
Qty. Kg	-	-	-	202	808	1010	-	-	-	-	-	400
%	-	-	-	20.00	80.00	100.0	-	-	-	-	-	
Small												
Qty. Kg	-	-	-	169	680	849	-	-	-	-	-	566
%	-	-	-	20.00	80.00	100.0	-	-	-	-	-	
Medium												
Qty. Kg	-	-	-	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-	-	-	-
Large												
Qty. Kg	-	-	-	-	-	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-	-	-	-	-	-
Total												
Qty. Kg	-	-	-	371	1488	1859	483	-	-	-	483	966
%	-	-	-	20.00	80.00	100.0	50.00	-	-	-	50.00	100.0

Table: 5.5 Distribution of Orchardists According to Tenure of Contract on Different Size of Holding in Districts Kangra and Sirmour in Himachal Pradesh.

Orchardists Size	Period of Contract				Total No of orchards given on contract	Sample size	% of orchards given on contracts
	One year	Two year	Three year	Four year & above			
Kangra district							
Marginal	9 (100.0)	-	-	-	9 (100.0)	10	90.00
Small	16 (100.0)	-	-	-	16 (100.0)	17	94.12
Medium	7 (100.0)	-	-	-	7 (100.0)	10	70.00
Large	1 (100.0)	-	-	-	1 (100.0)	3	33.33
All	33 (100.0)	-	-	-	33 (100.0)	40	82.25
Sirmour district							
Marginal	3 (100.0)	-	-	-	3 (100.0)	9	33.33
Small	2 (100.0)	-	-	-	2 (100.0)	5	40.00
Medium	1 (100.0)	-	-	-	1 (100.0)	2	50.00
Large	-	-	-	-	-	-	-
All	6 (100.0)	-	-	-	6 (100.0)	16	37.50

Note: Figures in parenthesis showing the percentage

Table: 5.6 No. of Statement in which Contractual Amount is paid on Different Size of Holding in Districts Kangra and Sirmour in Himachal Pradesh.

Orchard size	One Instalments	Two Instalments	Three Instalments	Four & above instalments	Total No. of orchards given on contract
Kangra district					
Marginal	5 (55.55)	2 (22.22)	2 (22.22)	-	9 (100.0)
Small	9 (56.25)	4 (25.00)	3 (18.75)	-	16 (100.0)
Medium	-	3 (42.86)	4 (57.14)	-	7 (100.0)
Large	-	-	1 (100.0)	-	1 (100.0)
All	14 (42.42)	9 (27.27)	10 (30.30)	-	33 (100.0
Sirmour district					
Marginal	2 (66.67)	1 (33.33)	-	-	3 (100.0)
Small	1 (50.00)	1 (50.00)	-	-	2 (100.0)
Medium	-	-	1 (100.0)	-	1 (100.0)
Large	-	-	-	-	-
All	3 (50.00)	2 (33.33)	1 (16.67)	-	6 (100.0)

Note: Figures in parenthesis showing the percentage to total.

Table: 5.7 Reasons for caring orchard to pre-harvest contractor on different size of farm in Kangra and Sirmour district in Himachal Pradesh.

(Multiple Response)

Farm Size	Labour problem	To avoid market problem	To avoid risk and uncertainty	Busy in other farm operation	To lock after other domestic work	Unaware about the marketing	Other	Total No of orchards given on contract
Kangra District								
Marginal	7 (77.78)	3 (33.33)	9 (100.0)	4 (44.44)	2 (22.22)	2 (22.22)	-	9 (100.0)
Small	8 (50.00)	7 (43.75)	12 (75.00)	6 (37.50)	5 (31.25)	4 (25.00)	-	16 (100.0)
Medium	2 (28.57)	3 (42.86)	4 (57.14)	2 (28.57)	2 (28.57)	1 (14.28)	-	7 (100.0)
Large	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
All	18 (54.54)	14 (42.42)	26 (78.79)	13 (39.39)	10 (30.30)	8 (24.24)	-	33 (100.0)
Sirmour District								
Marginal	2 (66.67)	2 (66.67)	3 (100.0)	1 (33.33)	1 (33.33)	1 (33.33)	-	3 (100.0)
Small	1 (50.00)	1 (50.00)	2 (100.0)	1 (50.00)	1 (50.00)	1 (50.00)	-	2 (100.0)
Medium	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
Large	-	-	-	-	-	-	-	- (100.0)
All	4 (66.67)	4 (66.67)	6 (100.0)	3 (50.00)	3 (50.00)	3 (50.00)	-	6 (100.0)

Note: Figures in parenthesis are the percentage to total.

Chapter –6

MARKET CHARGES AND PRICE SPREAD IN MARKETING OF KINNOW AND SANGTRA

The objectives 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 the share of intermediaries connecting the two. Generally, there is a wide gap between the price paid by the consumer and that received by producer. The sole idea of efficient marketing revolves directly or indirectly around the maximization of gap between the two prices. 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, it differs from state to state because of the regulations of markets but in the same state for different markets these are the same. The market charges are comparatively unimportant in the primary and terminal markets and therefore only secondary markets have been studied. Although, the growers dispatch their produce to various nearby markets, however this study include only six markets namely Chandigarh, Dehradun, Yamuna Nagar, Poanta Sahib, Jassur and Pathankot as proposed by Directorate of Horticulture, Navbahar, Shimla-171002.

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

Commission of the Commission Agent

The commission agents charge at the rate of 3 to 5 per cent 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 different market is four percent in Chandigarh, 3 per cent in Dehradun and rest of the markets it is 5 per cent only. Although the commission can be charged only from buyers, in actual practice commission was being charged from both buyers and sellers as presented in Table 6.1. The rate of commission also varied from seller to seller according to mutual understanding and the quantity sold.

Market Fees

The commission agent is supposed to charge market fee from the purchaser ranging from 1 to 2 per cent on the sale value of goods in different markets. This fee has to be deposited with market committee. The market fees differ from state to state. This fee is charged at the rate of two percent in Chandigarh, Yamuna nagar and Pathankot one and half per cent in Dehradun where as in Poanta Sahib and Jassur it is one percent only (Table 6.2).

Other Charges

Some states like Haryana and Punjab charge one per cent of sale value of goods as a rural development fund. This charge is also deposited with market committee and is payable by buyers only. The markets under Chandigarh, U.P. and Himachal Pradesh do not have any such charge except market fees (Table 7.3).

Loading – Unloading

A sum of Rs.2.00 per credit piece is charged from the seller as handling charges for each rate to be sold in different markets. This charge is levied on seller and is not approved by the market authorities.

Price Spread and Marketing Margins

The difference between the prices received by the orchardists and price paid by consumer for Sangtra and Kinnow comprising cost of marketing and rendering market services such as assembling, grading, transportation, 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 functions 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.

Price Spread for Sangtra and Kinnow

(i). Kangra District

The price spread/margins have been worked out for Pathankot and Jassur market. Table 6.4 presents the marketing cost incurred by the orchardists for Sangtra and Kinnow and Table 6.5 the total marketing cost incurred by different functionaries. The proportionate share of different functionaries

is given in Table 6.6. While table 6.7 show the producers share and marketing margins of Sangtra and Kinnow in different selected markets at consumer price prevalent in both the markets.

The major components of marketing cost are picking, grading, packing, packing material, transportation cost, commission of commission agent and state tax, octroi etc. It may be observed (Table 6.4) that cost of marketing incurred by orchardists of Kangra was Rs.47.94 and 49.74 for Sangtra in Jassure and Pathankot, respectively. The difference in these costs was mainly due to the difference in transportation charges and commission charged, rest of the costs were the same for each market. Table further reveals that the marketing costs for Kinnow in the above said markets were comparatively marginally lower than Sangtra. This is due to the fact that the Kinnow fetches lower prices than Sangtra consequently lower amount of commission thereon.

The producer share in consumer rupees for Sangtra (Table 6.5 and 6.6) has been observed to be 55.07 and 55.37 in Jassur and Pathankot markets, respectively. In the same market the producer share in consumer rupees is marginally higher in Jassure and marginally lower in Pathankot market. In these markets the retailer's margin is 13.04 per cent for both Sangtra and Kinnow. But in absolute term retailers' margin is Rs.34.83 and Rs.37.75 per crate (20 Kgs.) in Jassur and Pathankot, respectively. However, the Kinnow in these markets is Rs.35.70 and Rs.36.87 per crate.

The Kangra producers realized higher (Table 6.7) returns in Pathankot market for both Sangtra and Kinnow. The main reason for lower prices in Jassur market is that only Himachal fruits is mainly delta in the market. In Pathankot market, Nagpuri Sangtra also competes with local produce which has high quality and is costlier. This increases the prices of local produce also in Pathankot market. The prices of Kinnow have been observed to be marginally lower than Sangtra mainly because the consumers have lower preference for Kinnow.

(ii) Sirmour District

The price spread/margins have been worked out for Poanta Sahib, Yamuna Nagar, Chandigarh and Dehradun markets as most of the produce of Sirmour district is sent to these markets. Table 6.8 to 6.11 present the marketing cost incurred by orchardists, total marketing cost, proportion of various marketing costs in consumer rupee, producers share and marketing margins etc. of Sangtra and Kinnow in different selected markets at prevalent consumer price.

It may be observed from the table 6.8 that cost of marketing incurred by orchardists of Sirmour have been Rs.50.28, Rs.69.03, Rs.59.28 and Rs.60.08 for Sangtra in Poanta Sahib, Yamuna Nagar, Chandigarh and Dehradun markets, respectively. The marketing cost of Kinnow has been observed to be almost the same. The major item of expenditure is packing material followed by transportation cost and commission of commission agent.

The producer's share in consumer's rupees for Sangtra (Table 6.9 & 6.10) are 54.70, 46.02, 46.63 and 51.52 per cent in Poanta Sahib, Yamuna Nagar, Chandigarh and Dehradun markets respectively. The total marketing cost (Table 6.11) incurred by different agencies and/or individuals have been estimated at Rs.88.28, 120.93, 103.78 and 103.53 per crate of 20 kg in Poanta Sahib, Yamuna Nagar, Chandigarh and Dehradun market respectively for Sangtra. The cost mainly depends upon the distance of market from producing area and charges levied by intermediaries. Further, the producers of Sirmour district realized highest net price for Sangtra in Dehradun market (Rs.149.92, followed by Poanta Sahib, (Rs. 149.72), Yamuna Nagar (Rs.135.97) and Chandigarh (Rs.120.02) while similar for Kinnow. The highest price realized at Poanta Sahib (Rs.144.97), followed by Chandigarh (Rs.144.02) and Yamuna Nagar (Rs.131.22).

It may be concluded that the rise or fall in producer's share is more than proportional to the rate of rise or fall in price level. This is so because several costs remain constant and do not change with price. Scrutiny of data revealed that benefits of rise in price do not percolate fully down to the growers as middlemen reflecting the inefficiency of marketing mechanism intercept their gains.

From the above discussion, it may further be concluded that marketing costs are generally high which offer some scope for improvement. In the present marketing system of Himachal citrus fruits, most of the benefits are reaped by the middlemen. It is suggested that an attempt be made to strengthen the marketing system by organizing cooperative societies, particularly for small growers. This will help in minimizing the margins of the intermediaries and will ultimately ensure better producer's share in consumer's rupee.

Table: 6.1 Commission of Commission Agent Charged for Citrus Fruits in Selected Markets.

(Percentage of sale proceed)

Name of the markets	Proscribed Commission		Actual Commission	
	Payable by seller	Payable by buyer	Payable by seller	Payable by buyer
1.Chandigarh	-	4	4	4
2.Dehradum	-	3	3	3
3.Yamuna Nagar	-	5	5	5
4.Poanta Sahib	-	5	5	5
5.Jassur	-	5	5	5
6.Pathankot	-	5	5	5

Table: 6.2 Market Fees Charged by Market Committee of Selected Markets for Citrus Fruits.

(Percentage of Sale Proceed)

Name of the markets	Proscribed market fees		Actual market fees	
	Payable by seller	Payable by buyer	Payable by seller	Payable by buyer
1.Chandigarh	-	2	-	2
2.Dehradum	-	1.50	-	1.50
3.Yamuna Nagar	-	2	-	2
4.Poanta Sahib	-	1	-	1
5.Jassur	-	1	-	1
6.Pathankot	-	2	-	2

Table: 6.3 Other Charges Charged By Market Committee/Authority In The Different Selected Market.

(Percentage of Sale Proceed)

Name of the market	Prescribed other charges			Actual other charges		
	Percentage	Payable by	Name of the other charge	Percentage	Payable by	Name of the other charge
1.Chandigarh	-	-	-	-	-	-
2. Dehradun	-	-	-	-	-	-
3.Yamuna nagar	1	Buyer	Haryana rural develop ment fund	1	Buyer	Haryana rural develop ment fund
4.Poanta Sahib	-	-	-	-	-	-
5. Jassur	-	-	-	-	-	-
6.Pathankot	1	Buyer	Rural development fund	1	Buyer	Rural develop ment fund

Table: 6.4 Marketing Cost Incurred by Orchardists of Kangra in Marketing of Sangtra and Kinnow in Different Selected Markets.

(Per crate of 20 kg.)

Cost Items	Sangtra		Kinnow	
	Jassur	**Pathankot**	**Jassur**	**Pathankot**
1. Picking, Packing and Grading	14.24 (29.70)	14.24 (28.63)	14.24 (29.52)	14.24 (28.77)
2. Packing Material	8.00 (16.69)	8.00 (16.08)	8.00 (16.58)	8.00 (16.16)
3. Carriage up to forwarding point	5.00 (10.43)	5.00 (10.05)	5.00 (10.36)	5.00 (10.10)
4. Transportation cost up to market	6.00 (12.52)	9.00 (18.09)	6.00 (12.44)	9.00 (18.18)
5. Commission of commission agent	11.70 (24.40)	10.50 (21.11)	12.00 (24.87)	10.25 (20.71)
6. Miscellaneous (State tax Octroi etc.	3.00 (6.28)	3.00 (6.03)	3.00 (6.22)	3.00 (6.06)
Total marketing cost	47.94 (100.0)	49.74 (100.0)	48.24 (100.0)	49.49 (100.0)

Note: Figures in parenthesis showing the percentages to total cost.

Table: 6.5 Marketing Costs for Sangtra and Kinnow in Different Selected Markets in Kangra Fruit Growing Areas.

Channel: Grower- Commission agent –Retailer-Consumer.

(Rs.Per crate of 20 kg.)

Particulars	Sangtra		Kinnow	
	Jassur	Pathankot	Jassur	Pathankot
1.Net price received by grower	147.06	160.26	151.76	155.51
2.Expenance incurred by grower				
- Picking packing & grading	14.24	14.24	14.24	14.24
- Packing material	8.00	8.00	8.00	8.00
- Carriage up to forwarding point	5.00	5.00	5.00	5.00
- Transportation cost up to market (including handling charges	6.00	9.00	6.00	9.00
- State tax, octroi, Loading and unloading at destination	3.00	3.00	3.00	3.00
- Commission of the commission agent	11.70	10.50	12.00	10.25
Sub-Total	47.94	49.74	48.24	49.49
3. Wholesale price	195	210	200	205
4. Retailers expenses				
- Carriage and handling charges	6	6	6	6
- Market fees, commission and other charges	11.70	14.70	12.00	14.35
- Retailers losses @ 10%	19.50	21.00	20.00	20.50
Sub-Total	37.20	41.70	38.00	40.85
5. Retailers margin	34.83	37.75	35.70	36.87
6. Consumer's price	267.03	289.45	273.70	282.72

Table: 6.6 Marketing Costs for Sangtra and Kinnow in Different Selected Markets in Kangra Fruit Growing Areas.

Channel: Grower- Commission agent –Retailer-Consumer.

(Percentage to consumer price)

Particulars	Sangtra		Kinnow	
	Jassur	Pathankot	Jassur	Pathankot
1.Net price received by grower	55.07	55.37	55.45	55.03
2.Expenance incurred by grower				
- Picking packing & grading	5.33	4.92	5.20	5.04
- Packing material	3.00	2.76	2.92	2.83
- Carriage up to forwarding point	1.87	1.73	1.82	1.77
- Transportation cost up to market (including handling charges	2.25	3.11	2.19	3.18
- State tax, octroi, Loading and unloading at destination	1.12	1.04	1.10	1.06
- Commission of the commission agent	4.38	3.63	4.38	3.62
Sub-Total	17.95	17.18	17.62	17.50
3. Wholesale price	73.02	72.55	73.07	72.51
4. Retailers expenses				
- Carriage and handling charges	2.25	2.07	2.19	2.12
- Market fees, commission and other charges	4.38	5.08	4.38	5.08
- Retailers losses @ 10%	7.30	7.25	7.31	7.25
Sub-Total	13.93	14.41	13.88	14.45
5. Retailers margin	13.04	13.04	13.04	13.04
6. Consumer's price	100.0	100.0	100.0	100.0

Table: 6.7 Producer Share and Marketing Margin in Sangtra and Kinnow in Different Selected Markets in Kangra Fruit Growing Areas.

Channel: Grower- Commission agent –Retailer-Consumer.

(Rs. Per crate of 20 kg.)

Particulars	Sangtra		Kinnow	
	Jassur	**Pathankot**	**Jassur**	**Pathankot**
1. Net Amount Received by Grower	147.06 (55.08)	160.26 (55.37)	151.76 (55.45)	155.51 (55.00)
2. Marketing Cost				
(a) Growers	47.94 (17.96)	48.74 (16.84)	48.24 (17.63)	49.49 (17.50)
(b) Retailers	37.20 (13.93)	41.70 (14.41)	38.00 (13.88)	40.85 (14.45)
Total	85.14 (31.89)	90.44 (31.24)	86.24 (31.51)	90.34 (31.95)
Per Kg.	4.26	4.52	4.31	4.52
3. Marketing Margin				
(a) Retailers	34.83 (13.04)	37.75 (13.04)	35.70 (13.04)	36.87 (13.04)
(b) Retailers per kg.	1.74	1.89	1.79	1.84
4. Consumer's price	267.03 (100.0)	289.45 (100.0)	273.70 (100.0)	282.72 (100.0)

Note: Figures in parentheses are the percentage to consumer price

Table: 6.8 Marketing Cost Incurred by Orchardists of Sirmour in Marketing of Sangtra and Kinnow in Different Selected Markets.

(Per crate of 20 kg.)

Cost Items	Sangtra				Kinnow			
	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun
1.Picking,packing and grading	14.78 (29.34)	14.78 (21.41)	14.78 (24.64)	14.78 (24.60)	14.78 (29.54)	14.78 (21.49)	14.78 (24.24)	-
2.Packing material	8.00 (15.91)	8.00 (11.59)	8.00 (13.33)	8.00 (13.31)	8.00 (15.99)	8.00 (11.63)	8.00 (13.12)	-
3.Carriae up to forwarding point	8.00 (15.91)	8.00 (11.59)	8.00 (13.33)	8.00 (13.31)	8.00 (15.99)	8.00 (11.63)	8.00 (13.12)	-
4.Transportation cost up to market	6.50 (12.93)	21.00 (30.42)	15.00 (25.00)	16.00 (26.63)	6.50 (12.99)	21.00 (30.53)	15.00 (24.60)	-
5.Commission of commission agent	10.00 (19.89)	10.25 (14.85)	7.20 (12.00)	6.30 (10.49)	9.75 (19.49)	10.00 (14.54)	8.20 (13.45)	-
6. Miscellaneous State tax, octroi etc.	3.00 (5.97)	7.00 (10.14)	7.00 (11.67)	7.00 (11.65)	3.00 (6.00)	7.00 (10.18)	7.00 (11.48)	-
Total marketing cost	50.28 (100.0)	69.03 (100.0)	59.98 (100.0)	60.08 (100.0)	50.03 (100.0)	68.78 (100.0)	60.98 (100.0)	-

Note: Figures in parenthesis showing the percentages to total cost.

Table: 6.9 Marketing Cost for Sangtra and Kinnow in Different Selected Markets in Sirmour Fruit Growing Areas.

Channel: Grower- Commission agent –Retailer-Consumer.

(Rs.Per Crate of 20 kg.)

Cost Items	Sangtra				Kinnow			
	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun
1.Net price received by grower	149.72	135.97	120.02	149.92	144.97	131.22	144.02	-
2.Expenance incurred by grower								-
- Picking, packing & grading	14.78	14.78	14.78	14.78	14.78	14.78	14.78	-
- Packing material	8.00	8.00	8.00	8.00	8.00	8.00	8.00	-
- Carriage up to forwarding point	8.00	8.00	8.00	8.00	8.00	8.00	8.00	-
- Transportation cost up to market (including handling charges	6.50	21.00	15.00	16.00	6.50	21.00	15.00	-
- State tax, octroi, Loading and unloading at destination	3.00	7.00	7.00	7.00	3.00	7.00	7.00	-
- Commission of the commission agent	10.00	10.25	7.20	6.30	9.75	10.00	8.20	-
Sub-Total	50.28	69.03	59.98	60.08	50.03	68.78	60.98	-
3. Wholesale price	200.00	205.00	180.00	210.00	195.00	200.00	205.00	-
4. Retailers expenses								-
- Carriage and handling charges	6.00	15.00	15.00	13.00	6.00	15.00	15.00	-
-Market fees commission and other charges	12.00	16.40	10.80	9.45	11.70	16.00	12.30	-
- Retailers losses @ 10%	20.00	20.50	18.00	21.00	19.50	20.00	20.50	-
Sub-Total	38.00	51.90	43.80	43.45	37.20	51.00	47.80	-
5. Retailers' margin	35.70	38.53	33.57	38.02	34.83	37.65	37.92	-
6. Consumer's price	273.70	295.43	257.37	291.47	267.03	288.65	290.72	-

Table: 6.10 Marketing Cost for Sangtra and Kinnow in Different Selected Markets in Sirmour Fruit Growing Areas.
Channel: Grower- Commission agent –Retailer-Consumer.

(Percentage to consumer price)

Cost Items	Sangtra				Kinnow			
	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun
1.Net price received by grower	54.70	46.02	46.63	51.52	54.29	45.46	49.54	-
2.Expenance incurred by grower								-
- Picking, packing & grading	5.40	5.00	5.74	5.08	5.53	5.12	5.08	-
- Packing material	2.92	2.70	3.11	2.75	3.00	2.77	2.75	-
- Carriage up to forwarding point	2.92	2.70	3.11	2.75	3.00	2.77	2.75	-
- Transportation cost up to market (including handling charges	2.37	7.10	5.83	5.50	2.43	7.27	5.16	-
- State tax, octroi, Loading and unloading at destination	1.10	2.37	2.72	2.40	1.12	2.42	2.41	-
- Commission of the commission agent	3.65	3.47	2.80	2.16	3.65	3.46	2.82	-
Sub-Total	18.37	23.36	23.30	20.64	18.74	23.83	20.97	-
3. Wholesale price	73.07	69.39	69.94	72.16	73.03	69.29	70.51	-
4. Retailers expenses								-
- Carriage and handling charges	2.19	5.08	5.83	4.47	2.25	5.20	5.16	-
-Market fees, commission and other charges	4.38	5.55	4.20	3.25	4.38	5.54	4.23	-
- Retailers' losses @ 10%	7.31	6.94	6.99	7.22	7.30	6.93	7.05	-
Sub-Total	13.88	17.57	17.02	14.93	13.93	17.67	16.44	-
5. Retailers margin	13.04	13.04	13.04	13.06	13.04	13.04	13.04	-
6. Consumer's price	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table: 6.11 Producer Share and Marketing Margin in Sangtra and Kinnow in Different Selected Markets in Sirmour Fruit Growing Areas.

Channel: Grower- Commission agent –Retailer-Consumer.

(Rs. Per Crate of 20 kg.)

Cost Items	Sangtra				Kinnow			
	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun	Poanta Sahib	Yamuna nagar	Chandigarh	Dehradun
1. Net Amount Received by Grower	149.72 (54.70)	135.97 (46.02)	120.02 (46.63)	149.92 (51.52)	144.97 (54.30)	131.22 (45.46)	144.02 (49.54)	-
2. Marketing Cost								-
(a) Growers	50.28 (18.37)	69.03 (23.37)	59.98 (23.30)	60.08 (20.65)	50.03 (18.74)	68.78 (23.83)	60.98 (20.97)	-
(b) Retailers	38.00 (13.88)	51.90 (17.56)	43.80 (17.02)	43.45 (14.93)	37.20 (13.93)	51.00 (17.67)	47.80 (16.44)	-
Total	88.28 (32.25)	120.93 (40.93)	103.78 (40.32)	103.53 (35.58)	87.23 (32.67)	119.78 (41.50)	108.78 (37.42)	-
Per Kg.Marketing cost	4.41	6.04	5.19	5.18	4.36	5.99	5.44	-
3. Marketing Margin								-
(a) Retailers	35.70 (13.04)	38.53 (13.04)	33.57 (13.04)	38.02 (13.06)	34.83 (13.04)	37.65 (13.04)	37.92 (13.04)	-
(b) Retailers per kg.	1.78	1.93	1.68	1.90	1.74	1.88	1.90	-
4. Consumer's price	273.70 (100.0)	295.43 (100.0)	257.37 (100.0)	291.47 (100.0)	267.03 (100.0)	288.65 (100.0)	290.72 (100.0)	-

Note: Figures in parentheses are the percentage to consumer price.

Chapter – 7

PROBLEMS AND PROSPECT OF KINNOW AND SANGTRA IN PRODUCTION AND MARKETING

The area and production of citrus fruit has increased manifold during last three decades particularly of Sangtra and Kinnow. The increase in area and production has also brought many problems with regard to production and marketing of fruits. Profit from citrus fruit cultivation depends upon many factors like productivity, time of picking, care taken in grading and packing, time taken in transportation, type of storage etc. Keeping all these factors in view, major problems of citrus fruit orchardists of Himachal Pradesh are discussed in the present chapter.

1. Poor Production Technology

It was observed during the course of investigation that most of the Sangtra, particularly small orchards were not in good condition because of poor variety and low yield. And majority of farmers have planned to up root these orchards. The lack of irrigation, insecticide, pesticide and some time the industrial pollution in Sirmour district are main problems faced by the growers. Due to lack of irrigation, the fruit setting and growth are badly damaged and this affects quality and quantity of fruits.

2. Grading and Packing

It was observed that in citrus fruits growing areas, pre-harvest contractors are more popular. This ultimately affect the return to producer. The practice of marketing loose fruit has been proving very harmful for orchardists. This should be discouraged. Because of proper grading and packing orchardists from Nagpur region are getting good prices of their produce as compared to Himachal growers. The sample orchardists of Kangra and Sirmour area were asked about the problem which they are facing with regard to grading and packing of Sangtra. About 85.71percent of total orchardists of Kangra district and 70 per cent of sample orchardists of Sirmour district reported higher wage, shortage of skilled labour and non availability of labour is the main problem (Table 7.1). Therefore the grading and packing of Himachal citrus fruits need improvement on priority basis.

3. Packing Material

Another important function in the process of marketing is that of packing. Once the commodity reaches the market in well packed form the buyers offer better prices viz a viz other lots which are not well packed. Sangtra being perishable in nature needs good packing during transportation from producing area to the terminal markets. In Himachal Sangtra and Kinnow generally sold in loose form or same times in crates this fetches lower prices thus fruits should be packed in boxes/ baskets. The orchardists of both the areas face shortage of baskets/boxes during the peak season (Table 7.2). Small orchardists reported the major problem of unavailability of packing material on time and at desired place. Some of the small orchardists suggest that packing material should be available on credit also.

4. Storage Problem

Fruits are generally cold stored in the peak season and are taken out at the time of scarcity which fetches higher prices to the producer. But unfortunately it was learnt that Himachal (Kinnow and Sangtra) Sangtra cannot be stored on account of its poor keeping quality. It was observed during the course of study that cold store facility is not available in producing areas and also lack of suitable produce proved as bottleneck in the process of cold storing. In this regard suitable step are needed to develop small air cold storage at orchardists level as well. This would avoid distress sale by orchardists of Himachal Pradesh at the time of glut in the market (Table7.3).

5. Transportation Problem

The problem faced by the citrus fruits growers of Kangra and Sirmour with regard to transportation of citrus fruit is unavailability of vehicles on time and transportation charges are high (Table 7.4). As all the citrus fruit growing areas are not connected with mateled road and for this reason transporters hesitate to go to these areas. The vehicles which ply on such roads generally charge exorbitant freight rates.

6. Problem of Market Intelligence

The farmers of both the study areas (Kangra and Sirmour) were asked if they get adequate information about the price and arrivals of citrus fruits during the season in various markets or not. Majority of farmers reported that they do not get adequate information and that to is only for limited markets (Table 7.5). The problem was reported mostly by small and marginal farmers. However, large farmers manage to get desired information from different markets.

7. Problems of Malpractices

The citrus fruits growers reported that if they sell their produce through some middlemen, they get very little of their sale because of malpractices adopted by commission agents and other market functionaries. Most of the small orchardists of both the areas reported that the commission agents generally quote lower prices than the actual at which the produces has been sold. In most of the markets commission agents deduct more charges than the prescribed ones and some time they also deduct undue charges.

Suggestions

Keeping in view the existing problems of production and marketing of citrus fruits from Himachal Pradesh, the following points need attention of growers and concerned departments.

1. Horticulture department should take effective step to rejuvenate ill orchards and if possible department should provide possible help in order to improve these orchards. The farmers should be advised to up root the existing orchards and plant new ones by providing adequate technical know how and financial assistance. The production technology for the citrus fruit has to be developed on the lines of temperate fruits like apple etc. It also learnt from market functionaries that keeping quality of Himachal Sangtra is very low and it should be increased by making improvement in existing varieties.

2. In the present marketing system of Himachal citrus fruits, most of the benefits are reaped by middlemen. Most of the fruit producers have small orchards and as such they can not afford to adopt more efficient methods of grading, packing and transportation. They are also not in a position to bargain much with market functionaries. Therefore, it is suggested that an attempt should be made to strengthen the marketing system by organizing cooperative marketing societies. This will help in minimizing margins of the intermediaries and with ultimately ensure better producer's share in consumer's rupee.

3. It has been observed that the properly graded and packed produce fetches better price than the loose and un-graded. Farmers get low net returns for the same quality and quantity of fruit packed in baskets and gunny bags as compared to fruit packed in

boxes. The use of baskets and gunny bags for packing of fruits should also be discouraged and replaced by cfb cartons as for as possible for better returns.

4. To arrest temporal and spatial price fluctuations, there should be provision of adequate scientific storage facilities. Credit facility should be made available to the growers against their produce stored.

5. Market committees should enforce all the Bye Laws effectively to safeguard the interest of producers/sellers as well as the consumers.

Table: 7.1 Problem of Grading and Packing of Citrus Fruits as Perceived by Growers .

(Multiple Response)

Problems					
Particulars	**Storage of skilled labour**	**Higher wages**	**Non availability of labour**	**No problem**	**Sample size**
Kangra districts					
Marginal	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
Small	-	1 (100.0)	1 (100.0)	-	1 (100.0)
Medium	1 (33.33)	2 (66.66)	1 (33.00)	1 (33.33)	3 (100.0)
Large	1 (50.00)	2 (100.0)	1 (50.00)	-	2 (100.0)
Total	3 (42.86)	6 (85.71)	4 (57.14)	-	7 (100.0)
Sirmour districts					
Marginal	2 (33.33)	4 (66.66)	2 (33.33)	2 (33.33)	6 (100.0)
Small	1 (33.33)	2 (66.66)	1 (33.33)	1 (33.33)	3 (100.0)
Medium	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
Large	-	-	-	-	-
Total	4 (40.0)	7 (70.00)	4 (40.00)	3 (30.00)	10 (100.0)

Note: Figures in parenthesis are the percentage of total sample.

Table 7.2 Problem of Packing Material of Citrus Fruits as Perceived by Grower.

(Multiple Response)

Particulars	Shortage of packing material	High price	Net available in time	Net available at desired place	No problem	Sample size
Kangra district						
Marginal	1 (100.0)	-	1 (100.0)	1 (100.0)	-	1 (100.0)
Small	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
Medium	1 (33.33)	2 (66.66)	2 (66.66)	1 (33.33)	1 (33.33)	3 (100.0)
Large	1 (50.00)	1 (50.00)	1 (50.00)	2 (100.0)	-	2 (100.0)
Total	4 (57.14)	4 (57.14)	5 (71.42)	5 (71.42)	1 (14.28)	7 (100.0)
Sirmour district						
Marginal	1 (16.67)	1 (16.67)	2 (33.33)	3 (50.00)	3 (50.00)	6 (100.0)
Small	1 (33.33)	1 (33.33)	1 (33.33)	1 (33.33)	1 (33.33)	3 (100.0)
Medium	-	-	1 (100.0)	1 (100.0)	-	1 (100.0)
Large	-	-	-	-	-	-
Total	2 (20.00)	2 (20.00)	4 (40.00)	5 (50.00)	4 (40.00)	10 (100.0)

Note: Figures in parentheses are the percentage of total sample.

Table: 7.3 Problem of Storage Facilities of citrus Fruit as Perceived by Grower.

(Multiple Response)

Particulars	Problems			
	No storage facilities	Inadequate storage facility	No problem	Total sample
Kangra district				
Marginal	1 (100.0)	1 (100.0)	-	1 (100.0)
Small	1 (100.0)	1 (100.0)	-	1 (100.0)
Medium	2 (66.66)	2 (66.66)	1 (33.33)	3 (100.0)
Large	1 (50.00)	1 (50.00)	1 (50.00)	2 (100.0)
Total	5 (71.42)	5 (71.42)	2 (28.57)	7 (100.0)
Sirmour districts				
Marginal	3 (50.00)	3 (50.00)	3 (50.00)	6 (100.0)
Small	2 (66.66)	2 (66.66)	1 (33.33)	3 (100.0)
Medium	1 (100.0)	1 (100.0)	-	1 (100.0)
Large	-	-	-	-
Total	6 (60.00)	6 (60.00)	4 (40.00)	10 (100.0)

Note: Figures in parentheses are the percentage of total sample.

Table: 7.4 Problems of Transportation of Citrus Fruits as Perceived by Growers.

(Multiple Response)

Particulars	Problems					
	Lack of vehicles	**Vehicles not available in time**	**Village not linked with metalled road**	**Higher transportation charges**	**No Problems**	**Total sample**
Kangra districts						
Marginal	1 (100.0)	1 (100.0)	-	1 (100.0)	-	1 (100.0)
Small	-	1 (100.0)	-	1 (100.0)	-	1 (100.0)
Medium	1 (33.33)	2 (66.66)	-	2 (66.66)	1 (33.33)	3 (100.0)
Large	1 (50.00)	1 (50.00)	-	1 (50.00)	1 (50.00)	2 (100.0)
Total	3 (42.85)	5 (71.42)	-	5 (71.42)	2 (28.57)	7 (100.0)
Sirmour district						
Marginal	2 (33.33)	3 (50.00)	-	3 (50.00)	3 (50.00)	6 (100.0)
Small	-	2 (66.66)	-	2 (66.66)	1 (33.33)	3 (100.0)
Medium	-	1 (11.00)	-	1 (11.00)	-	1 (100.0)
Large	-	-	-	-	-	-
Total	2 (20.00)	6 (60.00)	-	6 (60.00)	4 (40.00)	10 (100.0)

Note: Figures in parentheses are the percentage of total sample.

Table: 7.5 Problems of Market Intelligence of Citrus Fruits as Perceived by Grower.

(Multiple Response)

Particulars	Problems				
	Late information	Information available for limited markets	Inadequate information	No Problem	Total Sample
Kangra district					
Marginal	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
Small	1 (100.0)	-	1 (100.0)	-	1 (100.0)
Medium	2 (66.66)	-	2 (66.66)	1 (33.33)	3 (100.0)
Large	1 (50.00)	-	1 (50.00)	1 (50.00)	2 (100.0)
Total	5 (71.42)	1 (14.28)	5 (71.42)	2 (28.57)	7 (100.0)
Sirmour district					
Marginal	3 (50.00)	1 (16.66)	3 (50.00)	3 (50.00)	6 (100.0)
Small	2 (66.66)	2 (66.66)	2 (66.66)	1 (33.33)	3 (100.0)
Medium	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
Large	-	-	-	-	-
Total	6 (60.00)	4 (40.00)	6 (60.00)	4 (40.00)	10 (100.0)

Note: Figures in parentheses are the percentage of total sample.

Table: 7.6 Problems of Malpractices in Citrus Fruits Marketing as Perceived by Growers.

(Multiple response)

Particulars	Problems						
	Deduct more charges	**Part payment**	**Multiplicity of charges**	**Deduct undue charges**	**Do not take the consent of the grower while selling**	**Quote lower prices than actual prices**	**Total sample**
Kangra district							
Marginal	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	-	1 (100.0)
Small	-	-	1 (100.0)	-	1 (100.0)	-	1 (100.0)
Medium	2 (66.66)	1 (33.33)	3 (100.0)	-	2 (66.66)	1 (33.33)	3 (100.0)
Large	1 (50.00)	1 (50.00)	2 (100.0)	1 (50.00)	1 (50.00)	1 (50.00)	2 (100.0)
Total	4 (57.14)	2 (28.57)	7 (100.0)	2 (28.57)	5 (71.42)	2 (28.57)	7 (100.0)
Sirmour district							
Marginal	1 (16.66)	2 (33.33)	6 (100.0)	2 (33.33)	3 (50.00)	1 (16.66)	6 (100.0)
Small	1 (33.33)	-	2 (66.66)	-	2 (66.66)	1 (33.33)	3 (100.0)
Medium	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)	1 (100.0)
Large	-	-	-	-	-	-	-
Total	3 (30.00)	3 (30.00)	9 (90.00)	3 (30.00)	6 (60.00)	3 (30.00)	10 (100.0)

Note: Figures in parentheses are the percentage of total sample.