PEACH MARKETING IN NWFP

Jahan Zeb and Zaheerullah Khan

ABSTRACT
Peach occupy the most important place in the stone fruits and is temperate in nature. Swat and Peshawar valleys enjoy the central position in NWFP in supplying peach fruit of high quality and grade. This study was conducted to find out the marketing channels adopted by the peach growers and determine the performance of existing marketing system in the two valleys of NWFP during the year, 2006. Results indicate that farm size of the sampled respondents ranged between 0.8 to 20 acres with an average of 6.6 acres. This shows that most of the orchards growers in the study area fall in below substances level of land holdings. It is remarkable that more than half (52.3%) of the orchards area was devoted to peach orchard which showed its importance in the study area. Majority of the Peach growers (78%) in the study area, sold their produce to pre harvest contractors. The reason may be that the area growers had lack of financial resources, labours, marketing information and time. Contractors purchased peach produce from the growers and sold it in the whole sale markets of Lahore (42% of the total purchased), Rawalpindi (26%), Peshawar and Mingora (32%). Results accomplished also indicate that the producer and contractor received a highest portion 54% and 24%, respectively of the consumer's rupee.

Keyword: Peach, NWFP, Pakistan, Marketing, Net Margin

INTRODUCTION
Agro climatic condition of Pakistan ranging from tropical to temperate allow growing 21 different kind of fruits of which apples, almonds, walnut, dates peaches, plums, citrus, mango, guava, Loquat, Litchi and banana etc; are relatively more common (Raja and khokhar, 1993).

Peach (Prunus persica) is the most important among the stone fruit and is temperate in nature. It is considered the native of china and probably developed in Persia.

It is delicious in taste and attractive in flavor and Aroma. It contains 10-14 percent sugar, 2 % protein and rich in ascorbic acid, Vitamin A and B besides iron, phosphorus and calcium.

Cling and free stone are two important cultivated type of peaches produced world-wide. In Pakistan peach is mainly grown in NWFP, Baluchistan and some low chill and early maturing cultivars in Potwar area of Punjab. In Peshawar and Swat region early grand, Florida king 6-A and 7, 8, 9 numbers are the most popular cultivars. Whereas in Baluchistan, Golden early, Shah Pasand and Shireen are grown.

Like other areas of the country, peach is also the major fruit in terms of area and production in Peshawar and Swat valley of NWFP (Table I).

Literature shows that in Pakistan like other developing countries, marketing function are performed in a traditional way and markets for agriculture products not functioning efficiently, such that there are great differences between prices paid by the consumer and received by producers (Siddique, 1979., Abid,1980 and Khushk and Smith, 1996). Producers always complain that the major portion of consumer prices goes to the market intermediaries and the middlemen claimed that they received the right reward for their service provided in adding form, time, place and possession utilities.

Peach produced in NWFP is marketed immediately after harvesting. High temperature and humidity, however, cause high post harvest losses. Estimates suggest that losses are ranged 20 -30%. Peach supplied to various cities of the country by the growers themselves and through Beoparies (middlemen). The Peach in Swat and Peshawar valleys is marketed in Mingora, Peshawar, Rawalpindi and Lahore. Keeping in view the importance of peach crop, the present study was planned with the following objectives

Objectives
i. To identify the present marketing channels adopted by the growers and determine the performance of existing marketing system.
ii. To evaluate the marketing margins of all the agencies involved in peach marketing.
iii. To find out the marketing problems faced by the peach growers.
iv. To develop policy recommendations on the basis of the findings of this research study.

MATERIAL AND METHODS
Data Collection
This study is based on primary data collection from a

* Restructuring of Horticultural Research and Development Project in NWFP, ARI Tarnab, Peshawar – Pakistan.
survey of peach producers and marketing intermediaries in order to assess the marketing system in NWFP. Separate questionnaires for farmers and different marketing agencies were developed and pre-tested in the field. In NWFP, peach orchards are particularly located in Swat and Peshawar valleys. In total seventy five peach producers, fifteen wholesalers and ten retailers belonged to the study area were interviewed for collecting primary data (Table II).

Analytical Work Frame
There are many paradigms to determine the marketing efficiency such as productivity measure, market margin analysis, welfare analysis and structure-conduct-performance (SCP). Due to time and financial constraints the analysis was confined only to market margin analysis.

Market Margins Analysis
Marketing margins are the differences between prices at different market levels. Marketing margins was estimated on the basis of data obtained on prices at different stages of the marketing chain. Beside this, marketing margins were calculated by computing the absolute margin or price spread, which is essentially the same as the difference between the prices, paid and received by each specific marketing agency. The following formula was used to compute percentage-marketing margins as earned by each market intermediary involved in the marketing of farm products.

\[ Mm = \frac{(Ps \times 100)}{Sp} \]

Where ‘Mm’ indicates the marketing margins earned by a specific agency, ‘Ps’ stands for price spread availed by that agency and ‘Sp’ represents sale price of the same agency for the same commodity.

Breakdown of consumer’s Rupee
Breakdown of consumer’s rupee is a phase applied to the manner in which consumer’s one rupee expenditure on a specific commodity is divided among the marketing agencies and producer. It shows that portion of a consumer’s rupee earned by various marketing agency such as Growers, pre-harvest contractors, commission agent, wholesaler and retailers. This was calculated by expressing the net margin of a specified agency as a proportion of the retail price. The following formula was used to determine the breakdown of consumer’s rupee.

\[ Bder = \frac{Ps}{Rp} \]

Marketing Costs
Marketing costs are the expenditure incurred by various market intermediaries from the time when commodity leaves the farm until it reaches the consumers. Such costs are necessarily incurred to create form, time, place, and possession utilities in the products to make them marketable. To determine whether the marketing margins (amount received by the different marketing agencies for providing their services) were reasonable, it was essential to calculate the ‘costs’ of these agencies. The costs incurred by the fruit producers and other marketing intermediaries have impact on prices as well as on the margins of the market intermediaries.

The major components of marketing cost include grading, loading, unloading, transportation, commission charges and market taxes. These costs were computed on a per kg basis. Each marketing agency was inquired about the amount it spent per crate and the cost of each agency was calculated by using the following formula.

\[ MC = \frac{AS}{q \ h} \]

Where ‘M’ stands for marketing cost of a specific unit quantity, ‘As’ for actual amount spent and ‘q h’ represents quantity handled. All marketing costs were calculated by estimating the above formula except for commission charges. To calculate commission charges, the following formula was used.

\[ Cc = (Sp \times R \ c) \ q \ m \]

Where Cc’ stands for commission charges, ‘Sp’ denotes sale proceeds of peach marketed, ‘R’ represents rate of commission and ‘q m’ quantity marketed.

Net Margin
The net margins of a specific agency are the net earnings, which it earns after paying all marketing costs. Net earnings of various market agencies involved in the marketing of peach was computed with the following formula.

\[ Nm = Ps – Mc \]

Where, ‘Nm’ stands for net margins, ‘Ps’ indicates the price spread availed by the specific agency and ‘Mc’ represents marketing costs incurred by the same agency.
The replies of the respondents were codified and the data was entered in the computer, using SPSS software package. Keeping in view the specific objectives of the study, data was analyzed using relevant techniques of data analyses, in Statistical Package for Social Sciences (SPSS) software package.

RESULTS AND DISCUSSION

Farm Size and Orchard’s Area

Operational land holdings play a significant role in adoption of new technology. Farmers with higher holdings can spare more area than those with small holdings to grow and cultivate new crops (Mureithi et al. 1992, Kapronczai and Tomka, 1991 and Thakur et al. 1990).

Results indicate that farm size of the sampled respondents ranged between 0.8 to 20 acres with an average of 6.6 acres. This shows that most of the orchards growers in the study area fall in below substances level of land holdings. The reason below substances level of land holdings may be the rapid population growth and fragmentation of land holding. It is remarkable that more than half (52.3%) of the orchards area is devoted to peach orchard (2.3 acres) which shows its importance in the study area. On the remaining (47.7%) orchards area comprised apples (Swat valley), plum and persimmons are grown in Swat and Peshawar valleys. In Swat valley the area under orchards is double as compared to Peshawar as indicated in Table III.

Peach Varieties

Swat and Peshawar valleys enjoy the central position in NWFP in supplying peach fruit of high quality and grade. Literature shows that there was a collection of more than 42 peach varieties found in NWFP. From the available material, Earli Grande, Loring Floridasen, NJ241 NJ 238, 6A, 7, 8, 9 numbers, Florida King, Tex A6-69 and Tex Y-55 varieties have been recommended for the growers in view of their good quality fruit and vigorous growth of plants. About 10 important commercial varieties of peach were commonly grown by the sampled respondents in the research area and these could be placed in to three groups as early, mid and late season varieties. It was also observed in the field that about 65% of the peach area was covered by 6A, Tex y-55 (mid season varieties and 7, 8, 9 numbers (late season varieties) in Swat valley, while the remaining 35% area covered by others varieties such as 4, 5 numbers, Earle grand and Florida king (early season varieties).

In Peshawar valley, all of the respondents grew early and mid season varieties.

Yield

Data collected from the sampled respondents show that the Peach growers had received higher yield from mature peach trees compared to the young trees. This was due to the fact that young trees gave less yields. According to the growers peach trees become fully mature and produced the best yield (6270 kg/acre) after 10 years. It is remarkable that yield per acre in Swat valley (5530 kg/acre) which is higher than Peshawar valley (4640 kg/acre) as shown in Table IV. During discussion with the respondents it was also observed that no variation were found in the management practices and input use among the two valleys.

Marketing Channel

Awareness of marketing as a concept and as a vital and dynamic element in economic development has greatly increased in the developing countries. The improvement in the functioning of commodity markets as well as the improved performance of the marketing system is now generally recognized as important, strategic elements in agricultural and economic development. Changes of attitude to marketing have come about particularly during the last decade, when many developing countries have had to undergo stringent economic reforms (Mittendorf, 1992). The existing peach marketing channels are presented in Fig. 1. Private organization and individuals carryout the peach marketing viz; producers, contractors, commission agents, wholesaler and retailers were the principle market agencies in the peach marketing system. The existing peach marketing channels had been identified and their brief function is described here as under.

Peach Producers

Majority of the Peach growers (78%) in the study area, sold their produce to pre harvest contractors. The reason may be that the area growers had lack of financial resources, labours, marketing information and time. The area farmers sold their produces to pre harvest contractor in flowering or fruit immature stage. They also have strong relationships with the contractors, so that the area growers disposed their produces in times. While (17%) and (5%) growers sold their produces to whole sale market and both pre harvest contractor and whole sale market, respectively. Results indicate that there is no significant differences between Swat and Peshawar valley farmers regarding peach sale to different market intermediaries (Fig. 1)

Contractor

Pre-harvest contractor can be described as merchant or middleman buying the peach orchards from the
growers and selling in the whole sale markets. They estimated farm yield and marketing cost including supervision, labour, post harvest losses and transportation cost etc. Contractors in the research area had close contact with the commission agents in the whole sale markets. They purchased peach produce from the growers and sold it in the whole sale markets of Lahore (42% of the total purchased), Rawalpindi (26%), Peshawar and Mingora (32%) as shown in Fig.1.

Commission Agent
Commission agent is the principal agency around which all marketing activities rotate. They had sufficient space in the whole sale market for auction and storage. They were simply selling the produce brought by the producers and contractors and charged 7% on the total sale of each individual.

Wholesaler
Wholesalers usually performed their business in the wholesale and terminal markets. The wholesaler is the major agency in marketing of agricultural products. They have close contact with commission agents and retailers and supply produce to processing industries, exporters and retailers according to their demand.

Retailers
All market activities come to an end with the retailer, who buy and sell small quantity of the produce to the consumers at their local area. There were two types of retailers, some had small fruit shops in the consumption areas and others were hawkers selling fruit on the road sides or in the streets by moving from one place to another. Most of the retailers had close contact with the commission agents in the whole sale market and purchased the produce on credit basis and return the same after selling the product.

Marketing Margins Analysis
Margin analysis as a proportion of consumers price, is frequently used to assess the extent to which consumer prices are transmitted back to the producers. Marketing margins depend on the length of the marketing chain and the extent to which the produce is stored or processed (Shephred, 1993). Marketing margin may be calculated in two ways: absolute cash margins and percentage margins. The absolute cash margins is a good indicator of the trend of marketing costs (Swarp, et al’ 1985).

Peach prices
Results show that peach growers were not benefited from price variation, because they sold their peach orchard to contractors at the time of flowering. On the other hand contractors received a maximum price of Rs. 155 per 10 kgs of peach. All Marketing intermediaries except producer received highest prices of peach produced (Table V).

Absolute Cash Margin
Marketing margins are the differences between prices at two market levels and are commonly used to examine the differences between producer and consumer prices for a commodity. Marketing margins represent the price charged by market agencies for their services including buying, packing, transportation, storage and processing. Under competitive market conditions the market margins are the result of demand for marketing services and equal to the minimum cost of services provided plus normal profit (Scarborough and Kydd, 1992).

The absolute cash margin of producers was calculated as the sale price of the peach per 10 kg harvested by the contractor. The absolute cash margin of the contractor is the sale price in the market less purchase price and commission per 10 kg. Absolute cash margin of wholesalers and retailers was complicated. The margin varied from one variety to another and one grade to other. So the margin was calculated by simple averages for all varieties and grades (Table VI).

Share in Consumer’s Rupee
The consumer’s one rupee expenditure on a specific commodity is divided among the marketing agencies and producer. It shows that portion of consumer’s rupee, which is earned by the producer or goes to various marketing agencies such as contractors, commission agents, wholesalers and retailers.

The share in consumer’s rupee was calculated by expressing the net margin of a specific agency as a proportion of the retail price. Results indicated that the producer and contractor received a highest portion 54% and 24%, respectively of the consumer’s rupee (Fig. 2).

Marketing Cost
Marketing costs are composed of the total costs incurred on marketing of produce by each agency. One way of defining costs is as all the expenses incurred in organizing and carrying out the marketing process. Another definition is as the charges which are paid for any marketing activity such as, assembling, transportation, storage, grading, processing, wholesaling and retailing. The most important factors, which influence marketing costs, are distance between production and consumption
markets, conditions of the roads, seasonality, perishability, packaging, storage and processing (Smith, 1992). Marketing cost of peach was analyzed at each stage.

The average marketing costs paid by producers was estimated as Rs. 18/10 kg and contractor had cost of Rs. 29/10 kg. Wholesalers had costs of Rs. 3/10 kg (transportation of produce from the auction floor to shop, rent and license fees). Retailers had costs of Rs.8/ 10Kgs such as transportation of produce from market to sale area and rent of shop or barrow etc.

**Market Margins Analysis**
Marketing Margins calculated for different marketing intermediaries involved in peach marketing in the research area are as below.

Marketing Margin (Mm) for contractors = 30.30  
Marketing Margin (Mm) for Whole sellers = 3.60  
Marketing Margin (Mm) for Retailers = 15.0

The above estimates reveals that the contractors got thirty percent margin in the one step promotion of Peach produce, which seems to be very high.

**Net Margin**
Net Margins calculated for different marketing intermediaries involved in Peach marketing in NWFP are as below;

Net Margin (Mm) for Contractors = 18  
Net Margin (Mm) for Whole seller = 03  
Net Margin (Mm) for Retailers = 22

The above estimates reveals that the net marketing margin for the contractors and retailers is high as compare whole sellers.

**Marketing Problem faced by the Respondents**
Lack of finance and distant markets were the major problems mentioned by the peach producers (81%) in the research area, while monopolistic behavior of marketing intermediaries and low prices in local markets was the third major problem as indicated by the peach producers (19%).

**CONCLUSION AND RECOMMENDATIONS**
Peach is one of the major cash crops and income’s source of the area growers. Farm size of the growers in the research area was below the subsistence’s level, besides this they also lacked financial resources. It is remarkable that more than half (52.3%) of the orchards area was devoted to peach orchard (2.3 acres) which showed its importance in the study area. Majority of the growers sold their produce to pre harvest contractors and not availed the benefit of price variations. The producer and contractor received a highest portion 54% and 24%, respectively of the consumer’s rupee.

There is a need to improve the peach marketing and all the agencies involved should be trained and educated in modern packaging, grading and product presentation techniques, meeting the international standards in order to make them able to fetch better prices.

It is highly recommended to arrange the adequate credit facilities at lower interest rate of return to the peach growers in order to reduce marketing loses and pre harvest sale of their orchards.

Efforts should be made to increase the shelf life of peach to reduce the post harvest losses.
Jahanzab and Zaheerullah Khan. Peach marketing in NWFP ……

Fig. 1 Peach Marketing Channel in NWFP

Fig 2. Share in consumer's Rupee
Table I: *Area, production and yield per hectare of Peach in NWFP.*

<table>
<thead>
<tr>
<th>Years</th>
<th>Area (000 hec)</th>
<th>Production (000 Tones)</th>
<th>Yield (Tones/hec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>1.3</td>
<td>14.8</td>
<td>11.38</td>
</tr>
<tr>
<td>2001-02</td>
<td>1.9</td>
<td>20.9</td>
<td>11.0</td>
</tr>
<tr>
<td>2002-03</td>
<td>5.4</td>
<td>60.2</td>
<td>11.15</td>
</tr>
<tr>
<td>2003-04</td>
<td>5.2</td>
<td>56.8</td>
<td>10.92</td>
</tr>
</tbody>
</table>

Source: Agric. statistics of Pakistan 2003-04

Table II: *Distribution of sample for Peach Marketing Survey, 2005*

<table>
<thead>
<tr>
<th>Type of Respondents</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peach growers</td>
<td>Swat Valley</td>
</tr>
<tr>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Whole sellers</td>
<td>10</td>
</tr>
<tr>
<td>Retailers</td>
<td>5</td>
</tr>
</tbody>
</table>

Table III: *Farm size and Area under peach by different valleys of NWFP*

<table>
<thead>
<tr>
<th>Valleys</th>
<th>Operational area (acres)</th>
<th>Area under Orchards (acres)</th>
<th>Area under peach (acres)</th>
<th>Orchards area under Peach in (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swat</td>
<td>7.1</td>
<td>5.4</td>
<td>2.8</td>
<td>51.8</td>
</tr>
<tr>
<td>Peshawar</td>
<td>5.5</td>
<td>2.5</td>
<td>1.5</td>
<td>60.0</td>
</tr>
<tr>
<td>Total</td>
<td>6.6</td>
<td>4.4</td>
<td>2.3</td>
<td>52.3</td>
</tr>
</tbody>
</table>

Table IV: *Average yield (kg/acre) of the sampled respondents by different valleys of NWFP*  

<table>
<thead>
<tr>
<th>Plants age</th>
<th>Yield in kg/acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swat</td>
<td>Peshawar</td>
</tr>
<tr>
<td>3—6 years</td>
<td>4600</td>
</tr>
<tr>
<td>7—10 years</td>
<td>5200</td>
</tr>
<tr>
<td>Above 10 years</td>
<td>6800</td>
</tr>
<tr>
<td>All</td>
<td>5530</td>
</tr>
</tbody>
</table>

Table V: *Average sale Price (Rs/Karate) at different market Intermediaries by different valleys of NWFP*  

<table>
<thead>
<tr>
<th>Marketing intermediaries</th>
<th>Swat</th>
<th>Peshawar</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer</td>
<td>100</td>
<td>115</td>
<td>108</td>
</tr>
<tr>
<td>Contractor</td>
<td>150</td>
<td>160</td>
<td>155</td>
</tr>
<tr>
<td>Whole seller</td>
<td>165</td>
<td>175</td>
<td>170</td>
</tr>
<tr>
<td>Retailer</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>
Table VI: Absolute Cash Margin of Producers and market Intermediaries by different valleys of NWFP.

<table>
<thead>
<tr>
<th>Marketing intermediaries</th>
<th>Swat</th>
<th>Peshawar</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer</td>
<td>100</td>
<td>115</td>
<td>108</td>
</tr>
<tr>
<td>Contractor</td>
<td>50</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>Commission Agent</td>
<td>8</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Whole seller</td>
<td>7</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Retailer</td>
<td>35</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>Retail price Rs</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

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