

Proceedings:

International Conference on
Mango and Date Palm: Culture and Export.
20th to 23rd June, 2005.
Malik *et al.* (Eds), University of Agriculture, Faisalabad.

ECONOMICS OF MANGO AND DATES EXPORTS FROM PAKISTAN

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1. INTRODUCTION

Mangoes and dates are among the internationally traded prominent fruits. Pakistan is the 5th largest mango as well as date producing country in the world. The world mango production is estimated at 26.3 million tons. India, China, Thailand, Mexico and Pakistan are the top 5 mango producers (Table 1):

India is by far the largest mango producer in the world. Mexico and Brazil are the largest producers in the Americas. China, Thailand and Pakistan are the largest Asian producers (after India). Nigeria is Africa's largest producer.

As regards dates, Egypt, Islamic Republic of Iran, Saudi Arabia, UAE and Pakistan are the first five leading producing countries in the world (Table 2).

Information contained in Table 1 and 2 above shows that Pakistan ranks 5th in production of both mangoes and dates in the world.

2. FRUIT AND VEGETABLE PRODUCTION OF PAKISTAN

Pakistan is blessed with vast agricultural resources on account of its fertile land, well-irrigated plains, extremes of weather, and centuries old tradition of farming. Its diverse climate enables production of a wide range of horticultural commodities around the year. Production of fruits and vegetables in Pakistan has exhibited an overall increasing trend. The annual production of fruits and vegetables is estimated around 12 million tons (Table 3).

Production of mangoes represents 17.6% and dates 10.7% of the national fruit production. The value of horticulture crops (fruits, vegetables and condiments) at current factor cost is estimated at Rs.116.645 billion (equivalent to US\$ 2 billion) which is 26% of the total value of agricultural crops. The value of mangoes and dates at current factor cost is Rs. 20.077 billion. This constitutes 17.2% of the total value of fruits, vegetables and condiments and 27.5% of the total value of fruits.

3. TIME WINDOW

The harvest calendars for dates and mangoes for main producing countries are presented in Tables 4 and 5, respectively.

It is apparent from Tables 4 and 5 that harvest seasons of mangoes and dates in Pakistan coincide with most of the main producing countries; hence enormous competition in the international market due to augmented supplies by the competitors.

4. SIZE OF INTERNATIONAL TRADE OF MANGOES AND DATE

4.1 Mango Trade

The size of mangoes exports trade amounted to about 191 million tons in 2003. The international trade (including re-exports) in mangoes increased from 158,000 tons in 1990 to 576,000 tons in 1999 (265% increase). Mango is fourth most rapidly growing trade after taro, single strength citrus juice and cassava tapioca. USA is the main import market with a share of 34%, followed by Europe 25% and Gulf 13% (Figure 1).

Mexico is the main exporting country with market share of 24%, followed by Brazil 13% and Pakistan 7% (Figure 2).

4.2 Dates Trade

The size of global date trade in 2003 was estimated at about 352 million tons. India is the largest importer with market share of 38%, followed by UAE 9%, Morocco and France each sharing 5% (Figure 3).

Among the export market players, IR Iran leads with 34% market share, followed by Pakistan 20%, Tunisia 11%, Saudi Arabia and Algeria 7% each (Figure 4).

5. EXPORT PERFORMANCE OF PAKISTAN

5.1 Horticulture Exports Trend

Like production, the export of fruits and vegetables from Pakistan has also shown an overall increasing trend. Information on volumes and value of horticultural commodities exported from Pakistan is presented in Table 6.

Table 6 shows that export of mangoes and dates amounted to 142,897 tons of a value of US\$ 46,159,000.00. This represents 27.1% of the total volumes and 34.5% of total value of horticulture products exported in 2003/04.

The export of dates from Pakistan almost exclusively takes place from Khairpur in Sindh (Aseel date) where processing facilities exist. However, dates (*Begam Jangi*) are also sourced from Turbat in Balochistan whenever Sindh reaps poor crop. Inclement weather has been matter of concern during the past few years thereby damaging crop in Khairpur. Pest attack both in Balochistan and Sindh further aggravated the problem. This reportedly adversely impacted dates export which declined over the past few years.

5.2 Mango and Date Export Flow Chart

The export flow charts for mango and dates are illustrated through Figure 5 and Figure 6, respectively:

Mango processing is done on hot water treatment plant which is mandatory for export to China and Islamic Republic of Iran. In other cases, hot water treatment is applied against anthracnose while washing, waxing and grading (by weight) for improving presentation. The proportion of hot water treated and mechanically washed, waxed and graded mangoes is not much due to limited facilities. There are only three mango grading/waxing plants located in Karachi.

The Government of Pakistan under the Trade Policy 2003/04's Initiatives has decided to, *inter alia*, establish 2 agro processing zones each at Multan (Punjab) and Mirpur Khas (Sindh) for facilitating export of mangoes and other horticulture commodities. The infrastructure planned for the APZs include vapour heat treatment plant along with cold storage, washing, waxing and grading facilities. In addition, 3 dates processing plants, one each in Khairpur, D. I. Khan and Turbat along with cold storage facilities are also being developed under the Trade Policy 2003/04 Initiatives. These facilities when developed would help enlarge exports and improve economics including per unit price.

5.3 Direction of Mangoes and Dates Exports

Mangoes and dates are exported to a number of countries. However, Gulf and Saudi Arabia are main market for mangoes followed by England in Europe. The USA is main buyer of

fresh processed dates followed by India while dry dates are mainly exported to India. Region/Country-wise distribution is presented in Table 7.

There is need to diversify exports and access new markets in order to absorb increasing volumes and release pressure on the traditional markets like Gulf in case of mangoes and India in case of dates (dry).

5.4 Mode of Shipment

Mangoes are partly sea freighted and partly shipped by air. With the improvement in sea cargo services in terms of availability of containers and reduced transit time, exporters prefer to send their cargo by sea. Generally shipments to Gulf markets which lie in close proximity are shifting from air to sea. Table 3 presents mode of shipment for mangoes:

Apart from space limitations, the freight charges by air are exorbitantly high. This directly adversely impact competitiveness in the international market (Table 9).

The air freight is more than 5 times the sea freight. It is estimated that in CandF price of mangoes ex-London, air freight constitutes more than 50%.

Dates have sufficient shelf life and are thus shipped by sea.

5.6 Unit Export Price

The per unit export price of mangoes to main destinations is presented in Table 10.

The reason for low per unit price of mangoes exported to Oman, Dubai and Kuwait is reported to be over supplies and poor presentation. The quality of mango shipped by non-reefer containers also deteriorates and adversely impact prices.

The average unit prices of mangoes exported by the main competing countries are contained in Table 11.

The average unit price of Pakistani mangoes is the lowest and 41% less than the world average.

The average unit price of dates exported from Pakistan is presented in Table 12.

The unit vale of fresh dates is much higher than dry dates. Therefore, there is need to set up state-of-the art processing facilities for enlarging export of fresh dates. Similarly, dry dates are prepared in very crude fashion. The use of improved dry dates processing methods like steam boiling will improve quality and marketability leading to price premiums. Moreover, processing facilities at present are confined to Khairpur. These should be introduced in Turbat, Panjgoor and D. I. Khan which too main date producing areas.

Table 13 contains information on unit price of main date exporting countries of the world.

6. SUGGESTIONS

Mangoes and dates would remain among the leading exportable commodities owing to availability of adequate volumes and rapidly increasing demand in the international market. Therefore, the process of improvement in product quality, shelf life, post-harvest management and marketing practices has to be continued in order to sustain in the international market and enlarge share. This would certainly entail short, medium and long term strategies.

In the context of foresaid analysis, following suggestions are made for improving economics of export of mangoes and dates from Pakistan:

6.1 Direct Procurement from the Orchard

At present produce for export is predominantly from the wholesale market. This increases direct costs due to repeated handling like re-sorting, re-grading, re-packing, loading/unloading, transportation, temporary storage and delays. The exporters informed that the out-grade ratio was 20% when the produce had been sourced from the wholesale. This ratio reduced to 2 to 3% when procurement was made directly from the orchard. Therefore, the procurement system must change from predominantly market based to direct sourcing from the production areas.

6.2 Compliance to international Sanitary and Phytosanitary (SPS) measures

There is a growing concern about potential hazards to human health, livestock and agriculture/environment associated with the importation of foods. Many importing countries have therefore introduced necessary quarantine measures to ensure food quality and safety. The presence of fruit flies especially *Bactrocera zonata* and *Bactrocera dorsalis* in mangoes is a matter of concern. In addition, countries like Malaysia and Sri Lanka have expressed concern about mango stone weevil. Use of wood packaging has been banned in Europe. Corrective measures need to be taken for the management of quarantine pests at the farm level through good agricultural practices, followed by required post-harvest treatments like vapour heat treatment against mango fruit flies.

There is generally a large price differential between good, average, and poor quality mangoes on the domestic as well as the export markets. Customers are becoming increasingly selective for high quality fruit. Customers are now looking to products safe to eat and less chemical prone during pre and post-harvest operations.

6.3 Infrastructure

Inadequate physical infrastructure not only hinders the pace of exports but also adversely impacts export economics in the form of low prices fetched in the international market. Facilities like vapour heat treatment for mangoes, CA storage and CA reefer containers for mangoes are non-existent in the country and should be provided. Similarly, processing facilities for dates are not only limited but confined to Khairpur only. There are no storage facilities for dates in all the date producing areas. It is proposed that processing facilities in Khairpur should be augmented, while processing facilities in Turbat, Panjgur and D. I. Khan and cold storage facilities in the foresaid date processing areas should be developed. The establishment of two agro processing zones, one each in Mutant and Mirpur Khas, and three dates processing plants one each in Khairpur, Turbat and D. I. Khan under the Trade Policy Initiatives should be expedited. This apart from rendering services to the interested traders will induce private investment in this field.

6.4 Improved/Standardized packaging and presentation

The world market is continually making higher demands for presentation, greater shelf life and uniform grading of fruit but also is requesting for more competitive commercial conditions including prices to develop consumption. Packaging has thus an important role in export trade. Poor packaging has direct impact on sales and prices. Pakistan is perhaps the only country using wooden crates for export of horticulture produce. In addition, non-standardized packaging obstructs market transparency and adversely impacts prices. The exporters who are using standardized imported corrugated boxes opined that there is net price appreciation from 5 to 10%. Government has allowed duty drawback facility on importation of corrugated boxes for re-exporter but many exporters feel that the system is cumbersome. Therefore, they use locally manufactured box which collapses during transit.

6.5 National branding and promotion

The branding has been a successful tool in enlarging exports. The business size of an individual exporter is so small to create an independent brand and promote it internationally. There is need to develop a national brand based on minimum parameters of produce quality, grading and packaging. The adoption of national brand by the traders should be voluntary. However, the compliant exporters should be given some incentives to attract them initially. The Government is working on national branding and has re-designed grade and quality standards for mangoes to conform to internationally traded standards. The implementation of this scheme should be expedited.

6.6 Market diversification (access to new markets)

The trade volumes of mangoes are directed to Gulf states while dates to India. This is causing over supplies. There is need to diversify the markets and access new markets. Pakistan has successfully accessed Russian Federation and Ukraine for Citrus fruit (Kinnow). MOUs have been signed with China and Iran for mangoes and citrus fruit. An FTA has been signed with Sri

Lanka which includes citrus, mango and dates. Access to new markets will help reduce pressure on traditional markets, absorb increased production volumes and in turn enhance exports.

6.7 Shipment of Mangoes by Sea (Reefer Containers)

Improvement in sea cargo handling has encouraged export by sea. Therefore, export to import markets in close proximity like Gulf and Saudi Arabia has almost shifted from air to sea. Efforts are underway to extend this facility to distant markets as well. However, so far exports to distant markets including Europe and Far East are preferred by air.

Due to poor post-harvest handling and inadequate research to study behavior in controlled reefer atmosphere, Pakistan mangos have limited shelf life. This result in mangoes being air lifted but air cargo is expensive and has a limited capacity.

The leading mango exporting countries have consolidated their position on the world markets during the last 10 years in spite of the fact that their export volume has increased 3 folds. New players like Ecuador and Ivory Coast appeared on the list. They were exporting almost nothing in 1991. Brazil now exports 12 times more volume than in 1991 and Peru 14 times more while Pakistan has only increased its export volume 4 times. The growth factor for many of these countries has been to build efficient packinghouses and a reliable cold chain and to shift from exporting by air to exporting by reefer containers. Pakistan should accelerate efforts to ship mango by reefer container to distant markets in Europe.

TABLES

Table 1: World mango production 2004

Country	Production (Mil. Tons)	% of World Production
World	26.3	
India	10.8	41.1
China	3.6	13.7
Thailand	1.8	6.8
Mexico	1.5	5.7
Pakistan	1.1	4.2

Source: FAO Statistics

Table 2: World date production 2004

Country	Production (Mil. Tons)	% of World Production
World	6.77	
Egypt	1.10	16.3
IR Iran	0.88	13.0
Saudi Arabia	0.83	12.3
UAE	0.76	11.2
Pakistan	0.65	9.6

Source: FAO Statistics

Table 3: Production of fruits and vegetables in Pakistan (Ave 1999-2004) (Metric Tons)

Fruit/Vegetable	Punjab	Sindh	NWFP	Balochistan	Pakistan
Fruits					
Mango	650,352	371,453	2,542	12,798	1,037,145
Citrus	1,751,036	28,076	37,495	13,669	1,830,276
Banana	15,778	113,553	12,291	8,065	149,687
Guava	444,524	53,651	32,721	7,563	583,459
Dates	94,120	288,902	6,691	240,568	630,281
Apple	2,563	206	117,369	246,997	367,125
Others	621,833	61,172	252,823	412,080	1,302,908
Sub-total	3,580,196	917,013	461,932	941,740	5,900,881
Vegetables					
Potato	1,548,791	2,963	115,577	54,314	1,721,645
Onion	225,000	596,600	183,000	380,200	1,384,800
Tomato	62,226	32,838	146,207	30,114	294,112
Others	2,019,782	164,765	212,534	200,275	2,579,624
Sub-total	3,855,799	802,166	657,318	664,903	5,980,181
Total	7,435,995	1,719,179	1,119,250	1,606,643	11,981,062

Source: Ministry of Food, Agriculture and Livestock, Government of Pakistan

Table 4: Harvest calendar of main dates producing countries

Country	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Algeria	√	√	√							√	√	√
Egypt								√	√	√	√	
Iran	√	√						√	√	√	√	√
Iraq									√	√	√	√
Mexico									√	√	√	
Morocco	√	√	√							√	√	√
Pakistan							√	√	√	√		
Tunisia	√									√	√	√
USA										√	√	√

Source: Info Fresh

Table 5: Mango Harvest Calendar of Main Mango Producing Countries

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pakistan					√	√	√	√	√			
Philippines				√	√	√	√	√				
Mexico			√	√	√	√	√	√	√			
Madagascar	√	√										
Malaysia				√	√	√	√					
Kenya				√	√	√						
Jamaica					√	√						
Indonesia	√											√
India				√	√	√	√					
Guatemala				√	√	√	√					
Egypt									√	√	√	
Chile	√										√	√
Brazil	√										√	√
Australia	√										√	√
Peru	√	√	√									√
Venezuela				√	√	√	√					
South Africa	√	√	√									
Rest of Africa			√	√	√	√	√					
St. Lucia						√	√	√	√			
Thailand				√	√	√	√	√	√	√	√	
USA						√	√	√	√			

Source: Trade and Transport Facilitation Project, UNCTAD, Karachi-Pakistan

Table 6: Exports of Horticulture Commodities from Pakistan

Commodities	2001/02		2002/03		2003/04	
	Tons	US\$ '000'	Tons	US\$ '000'	Tons	US\$ '000'
Fruits						
Kinnow	121,692	20,842	94,806	21,704	149,587	30,763
Apples	818	299	250	78	97	61
Mango	47,541	14,036	58,844	17,626	77,468	23,426
Dates Fresh	4,654	2,080	3,353	1,655	2,645	1,284
Dates Dried	72,817	25,546	67,791	23,449	62,784	21,449
Fresh Nuts N.S	25,674	7,019	18,552	6,191	40,085	10,546
Dried Fruits	6,036	9,211	2,942	8,766	2,794	11,229
Oranges	890	208	247	78	1,672	303
Other Fruits	9,663	3,848	16,222	3,608	17,286	3,618
All Fruits	289,785	83,089	263,007	83,155	354,418	102,679
Vegetables						
Potatoes	56,987	6,091	68,348	6,818	56,042	5,807
Onion	53,379	5,427	63,711	6,086	49,078	6,332
Other Fresh Vegetables N.S	2,210	702	32,070	6,651	49,381	9,584
Mushrooms	45	3,399	49	3,285	25	2,002
Garlic	2,479	1,542	2,161	836	681	204
Other Vegetables	15,294	1,833	18,941	2,819	7,333	1,753
All Vegetables	130,394	18,994	186,280	26,495	162,540	25,682
Fruit and Vegetable Juices	6,621	3,788	8,785	5,026	10,246	5,612
Total Fruits and Vegetables	426,800	105,871	458,072	114,676	527,204	133,973

Source: Federal Bureau of Statistics, Government of Pakistan

Table 7: Region/Country-wise Export of mangoes and Dates from Pakistan

Commodity	Country	Share
Mangoes	Gulf and adjoining states	53%
	Saudi Arabia	17%
	U.K and Other European Countries	18%
	Others	12%
Dates (Fresh)	USA	34%
	Europe	30%
	China	12%
	Others	24%
Dates (Dry)	India	91%
	USA	3%
	Others	6%

Source: Federal Bureau of Statistics, Government of Pakistan

Table 8: Mangoes exports: mode of shipment

Sector	Air	Sea (Reefer)	Sea (Non Reefer)
Middle East	40%	30%	30%
Far East	100%	-----	-----
Europe	100%	-----	-----
Others	100%	-----	-----

Source: Key Informants Survey

Table 9: Air and sea freight comparison (Mangoes)

Destination	Air	Sea (Reefer)
Dubai	0.47	0.08
Jeddah	0.70	0.12
Rotterdam	1.20	0.14
Cdg Paris/Leharve	1.20	0.14
Toronto	1.62	0.18
Flexto/Heathrow	1.20	0.14

Table 10: Average unit price of mangoes export from Pakistan 2003/04

Importing Countries	Quantity (Tons)	Value (000 US\$)	AUP(US\$/Kg)
Dubai	33,604	9,395	0.28
Saudi Arabia	13,224	4,810	0.36
Oman	9,245	2,098	0.23
UK	8,052	2,834	0.35
Kuwait	2,568	739	0.29

Source: Federal Bureau of Statistics, Government of Pakistan

Table 11: Average unit price of main mango exporting countries 2003

Country	Exports(Tons)	Value (000 US\$)	AUP (US\$/Kg)
Philippines	36,206	31,188	0.86
China	8,872	5,039	0.57
Mexico	194,591	99,834	0.51
Brazil	103,598	50,849	0.49
India	41,577	19,273	0.46
Thailand	8,736	3,395	0.39
South Africa	17,407	6,584	0.38
Pakistan	47,561	14,424	0.30
World	346,078	174,698	0.51

Source: Computed from FAO Statistics

Table 12: Average unit price of dates exports from Pakistan 2003/04

Country	US\$/Kg
<i>Fresh Dates</i>	
USA	0.61
Canada	0.70
UK	0.47
Average	0.49
<i>Dried Dates</i>	
India	0.34
Overall	0.34

Source: Federal Bureau of Statistics, Government of Pakistan

Table 13: Average unit price of dates for main exporting countries 2003

Country	US\$/Kg
Oman	5.06
Israel	3.92
France	2.51
Tunisia	1.99
Algeria	0.68
Saudi Arabia	0.54
Pakistan	0.36
Iran	0.29
UAE	0.28
World	0.77

Source: Computed from FAO Statistics

FIGURES

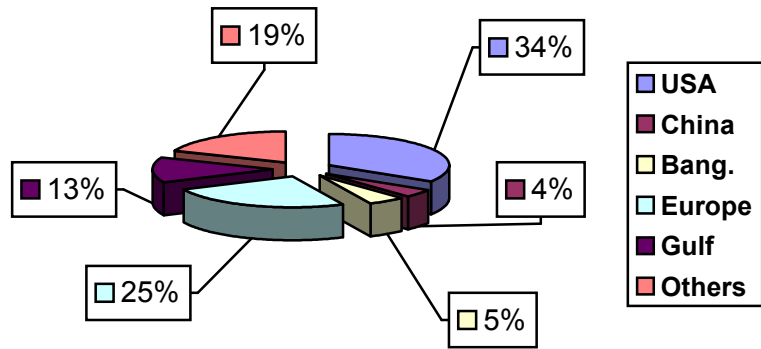


Figure 1: Major Mango Importing Countries (2003)

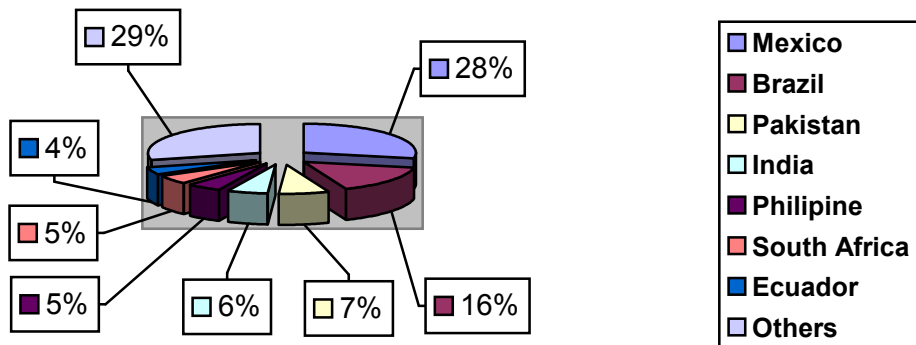


Figure 2: Major Mango Exporting Countries (2003)

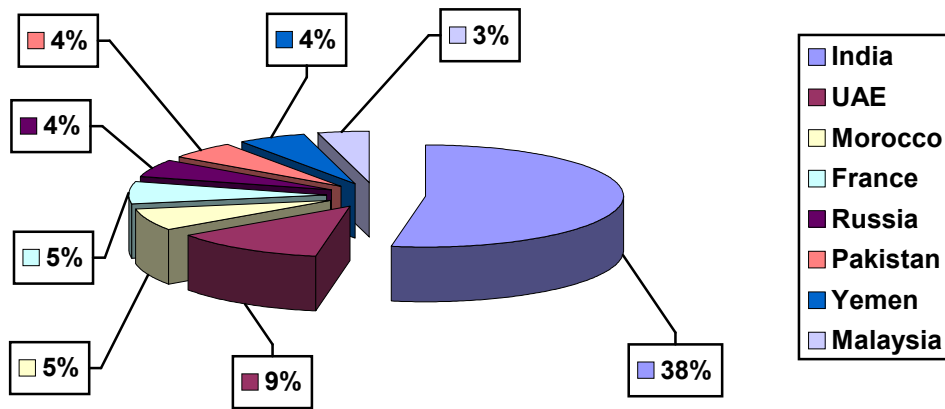


Figure 3: Major Date Importing Countries (2003)

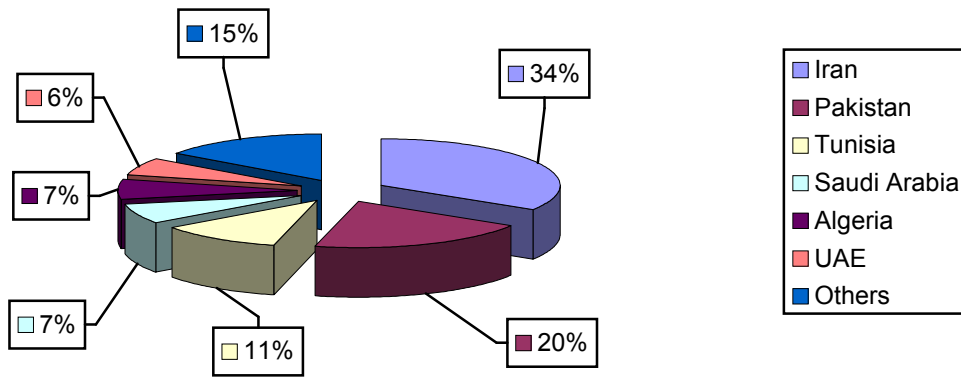


Figure 4: Major Date Exporting Countries (2003)

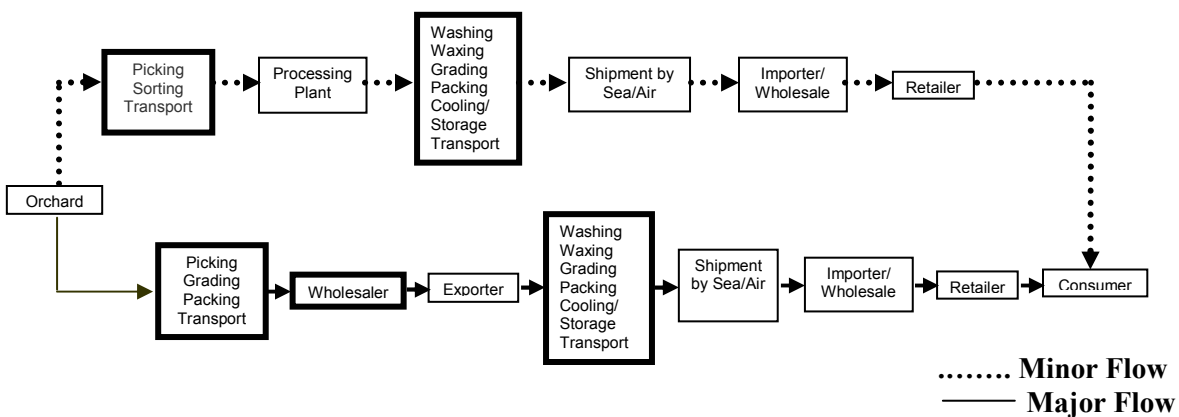


Figure 5: Mango Export Flow Chart

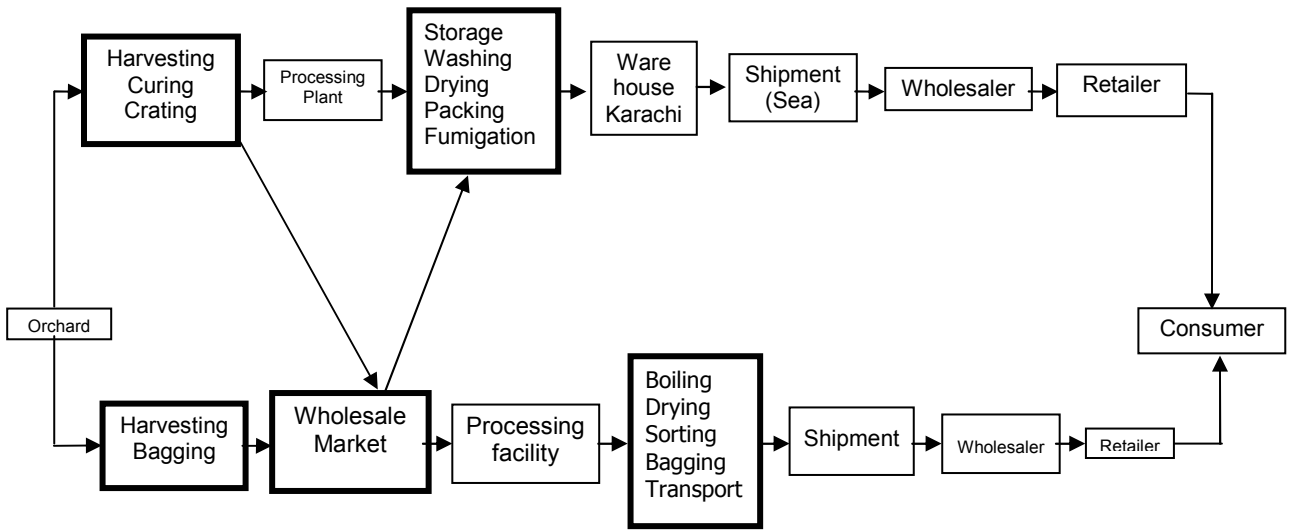


Figure 6: Dates Export Flow Chart