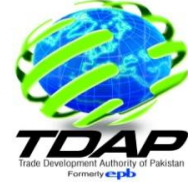


GOVERNMENT OF PAKISTAN
TRADE DEVELOPMENT AUTHORITY OF PAKISTAN
MULTAN OFFICE.



“REPORT ON MANGO OF SOUTHERN PUNJAB”



Made By: SYEDA ALINA ZAHRA GILANI
(PRODUCT/MARKETING OFFICER)

Supervised By: SYED JAWWAD HUSSAIN SHAH
(DIRECTOR, MULTAN OFFICE)

MANGO

1. PRODUCT DESCRIPTION

Multan is an historical city known for its mangoes all over the world. Its delicious mangoes are equally liked in Pakistan and in the rest of the world. Mango is the best gift from Multan. It is connected with world through International Airport. It occupies almost central position in Pakistan's map. It is connected with the whole of the country through Pakistan Railways, National Highway and under construction motorway.

Mangoes are one of the world's favorite fruits for food, juice, flavor, fragrance, and color. The fruit is variable in size and color, and may be yellow, orange, red or green when ripe, depending on the variety. Mangoes are sweet, with a unique taste that varies with variety. The texture of the fruit also varies from a soft and pulpy like an over-ripe plum, to firmer, like a cantaloupe or avocado. Mango is grown in slightly less than 90 tropical and sub tropical countries in the world. Asia is considered home land of the fruit. It produces three fourth of world mangoes out of which two third is being produced in India.

Many of the world's most popular varieties of mangoes for export – for example Chaunsa, Langra, Desi, Sindhu – preferred for their taste, texture and shelf life, are already being produced in Pakistan.

2. TYPES

There are many known varieties of Mangoes in Pakistan. Some of the most popular ones are listed below:

- LANGRA
- AMAN DUSEHRI
- ALPHANSO, BOMBAY
- SAMMAR BAHISHT
- FAJRI KALAN
- MUHAMMADWALA
- SAMMAR BAHISHT CHAUNSA
- RATAUL (ANWAR)

3. AVAILABILITY OF PRODUCT IN THE WORLD:-

Top Producers of Mango

Rank	Area	Production (MT)
1	India	13649400
2	China	3976716
3	Thailand	2374165
4	Indonesia	2013123
5	Mexico	1855359
6	Pakistan	1753686
7	Brazil	1154649
8	Philippines	884011
9	Bangladesh	802750
10	Nigeria	734000
11	Egypt	466436
12	Yemen	387906
13	Kenya	384461
14	Viet Nam	370000
15	Cuba	355200
16	Peru	322721
17	Haiti	295000
18	Madagascar	220000
18	United Republic of Tanzania	220000
20	Democratic Republic of the Congo	208440

Source: FAO 2008

4. GLOBAL TRADE IN THIS SPECIFIC PRODUCT:-

Pakistani mango is considered among the best in the world, for its aroma, taste, size and appearance, yet it could never become a big export. World's top exporters of mango are given below:

World Top Exporters of Mango

Product : 080450 Guavas, mangoes and mangosteens, fresh or dried

Sources : ITC calculations based on COMTRADE statistics.

Exporters	Trade Indicators					
	Value exported in 2009, in USD thousand	Trade balance in 2009 in USD thousand	Quantity exported in 2009	Quantity Unit	Unit value (USD/unit)	Share in world exports, %
World	1111511	-216953	1418820	Tons	783	100
India	205436	205393	267617	Tons	768	18.5
Mexico	136942	133708	232643	Tons	589	12.3
Netherlands	100809	-34608	80548	Tons	1252	9.1
Brazil	97686	97675	110355	Tons	885	8.8
Hong Kong, China	85727	-27055	104441	Tons	821	7.7
Thailand	71410	71303	144079	Tons	496	6.4
Peru	70930	70930	69191	Tons	1025	6.4
Pakistan	33179	33179	81450	Tons	407	3
Belgium	29623	-4709	14615	Tons	2027	2.7

World Top Importers of Mango

Product : 080450 Guavas, mangoes and mangosteens, fresh or dried

Sources: ITC calculations based on COMTRADE statistics.

Importers	Trade Indicators					
	Value imported in 2009, in USD thousand	Trade balance in 2009 in USD thousand	Quantity imported in 2009	Quantity Unit	Unit value (USD/unit)	Share in world imports, %
'World	1328464	-216953	1146712	Tons	1158	100
'United States of America	301527	-286601	295653	Tons	1020	22.7
'China	152789	-150647	124997	Tons	1222	11.5
'Netherlands	135417	-34608	65491	Tons	2068	10.2
'Hong Kong, China	112782	-27055	126350	Tons	893	8.5
'United Kingdom	77308	-75094	48111	Tons	1607	5.8
'Germany	70734	-59962	40660	Tons	1740	5.3
'Canada	55895	-55812	41544	Tons	1345	4.2
'France	55557	-40905	27448	Tons	2024	4.2
'Japan	46892	-46589	11233	Tons	4174	3.5

5. PAKISTAN'S POSITION IN GLOBAL TRADE:-

Export of Mango from Pakistan to the World

Product code	Product label	Pakistan's exports to world			Pakistan's exports to world		
		Value in (\$) 2007	Value in (\$) 2008	Value in (\$) 2009	Value in (\$) 2007	Value in (\$) 2008	Value in (\$) 2009
'080450	Mangoes	29027	26635	28974	29027	26635	28974

SUCCESS STORY

AL-ABBAS ENTERPRISES.

498 Nashband Colony, Khanewal Road, Multan.

Mobile # 0300-8630807

E-mail: alabbas.enterprisespk@yahoo.com

M/s. Al-Abbas was established in year 2000. Its countries of export of Mangoes are UK, France, Ireland, Belgium, Doha-Qatar and Switzerland. The first year's consignment of mangoes was of 5 tons. The next year it increased to 85 tons; the following year it jumped to 1000 tons. Then it ranged between 2000-5000 tons per year. The consignments are sent by-air to the European Countries and by-sea to the Gulf countries.

M/s. Al-Abbas initially started selling mangoes locally to Karachi, Lahore and Islamabad. After success in the domestic market, Mr. Ghulam Abbass the owner visited UK and gifted mangoes to his friend in UK. From his visit to London he got inspiration of exporting mangoes to international market. In 1997 he went to UK to study market & buying behavior of the people. After complete analysis he sent his first consignment to the UK market, where he faced problems in selling but he was successful as he penetrated into the market with competitive pricing strategy and supplying most delicious Pakistan mangoes of Pakistan. Slowly and slowly he established his own mango outlet in UK in the name of M/s. Al-Abbas UK Ltd. Now he is selling his mango at his own outlet and as well as in the fruit markets of UK.

He never faced any financial crisis as he was backed by a strong family background. The only problems he faced are of general natures which are faced by every fruit exporter such

as timely availability of space and fluctuation in freight charges. Unexpected increase in freight charges is a big problem for mango exporters.

According to him mango export needs a lot of struggle due to its perishability and uncertainty of prices. So exporters have to be vigilant in every matter from fruit ripening to fruit plucking, washing, packing and sending consignment to the destination and marketing.

He recommended that Vapour Heat Treatment (VHT) plant should be installed by the Government. as early as possible so that new markets like Japan and America may be approached.

6. ROLE OF GOVT. NGO's DONORS AGENCIES AND GOVT

DEPARTMENTS:-

1) TDAP

TDAP gives substantial subsidy to the exhibitors in providing stall at 50% or more subsidized rates and also sponsors a large number of delegations to be sent abroad.

TDAP gives every delegate 100 US\$ per night stay and one way air ticket; meeting with their respective business counter parts in the country visited are arranged by concerned embassy and commercial counselor. In fact, this is more beneficial to the delegate, than the monetary assistance. Meetings with potential buyers, trade bodies are of vital importance to the delegates.

2) SMEDA

SMEDA took initiative and planned to develop a common facility center in collaboration with Punjab Small Industries Corporation (PSIC), and MCC&I so that stakeholders may get benefit of value addition and contribute to national economy by earning better returns on indigenous agro produce. The project of Agro Food Processing Facilities (AFP), Multan is a non-profit organization aimed at providing processing facilities for domestic fruits / vegetables and guidance in latest processing techniques being used in developed countries. AFP provides processing facility for pulp extraction of various fruit like mango, guava, apple etc.

3. **PARAS**

Pakistan Radiation Services (PARAS), Pakistan's first facility to provide irradiation services for food products is a company constituted by Pakistan Atomic Energy Commission (PAEC) and Pakistan Horticulture Development & Export Board (PHDEB) under the name of "PARAS Foods Private Limited. Started in April, 2009 with a plan that envisions financial self-reliance, PARAS has the capacity to annually irradiate 60,000 tons of fruit, vegetables etc. Horticulture and agro-processing are target sectors.

4. **Punjab Govt.**

Punjab Govt. has also contributed towards the development and growth of fruits and vegetable in its province. Through its multifarious agencies. It has recently established one cold storage at Lahore and four are approved for Rahim Yar Khan, Islamabad, Faisalabad and Multan airports.

Kinnow and mango pack houses & cold storage are proposed at Bhalwal and Multan.

Mango Research institute at Shujabad has been working for the last many years. Punjab Govt. has decided to upgrade and improve its efficiency.

5. **USAID**

Among the notable NGO's USAID FIRMS is doing a lot of work in this field. USAID is working towards increasing incomes and generating additional employment in the major mango-growing areas of Southern Punjab and Northern Sindh. This will provide a boost to Pakistan's overall economy where the mango industry currently contributes USD 150 million per year to the GDP. USAID has worked alongside Pakistani farmers to maximize the output of the 2010 growing season. Assistance included the following:

- Training programs in pre and post-harvest practices were critical for export market success. 44 trainings were conducted in all major growing clusters in Sindh and Punjab, reaching more than 2,700 mango growers.
- Major investments in on farm infrastructure helped growers to achieve Global Good Agricultural Practice (Global Gap) Certification.

- Facilitating exports to European markets.
- Promoting value-added products.
- Assisting flood-affected mango orchards.

FIRMS launched its MUAVAN Mango Program to upgrade Pakistan's mango export supply chain to meet the higher quality standards required by major supermarket chains in the USA and Europe. FIRMS signed an MoU with PARAS which states that, in exchange for free irradiation of up to 40 tons of mango on behalf of growers/exporters of trial shipments, FIRMS agreed to upgrade the PARAS facility to enable it to receive a USDA/APHIS inspector to complete the approval process. FIRMS completed this initial work in early February, 2010, prior to the preliminary visit to the facility of the USDA/APHIS regional representative from New Delhi. In addition, FIRMS agreed to provide assistance in developing a marketing plan for PARAS. The challenge of this consultancy is to develop a marketing strategy and plan that if, implemented by PARAS using best practice corporate systems, processes, managerial practices, and appropriately hired, qualified personnel, will result in financial sustainability.

6. PHDEC

The objective is to work for production, development and export of horticulture products which include fruits, vegetables, flowers and herbs.

To develop export of fresh and processed horticultural products by:

- Promoting and developing competitiveness of horticulture industry of Pakistan with focus on exports of value added fresh and processed horticultural products.
- Information dissemination on international compliances on food quality and safety and by capacity building of the stakeholders through trainings and technical assistance for adherence to such compliances.
- Promoting technological upgrading and human resource development for enhanced value added exports in all sub sectors of horticulture.
- Encouraging, facilitating and training the growers to grow for export.
- Facilitating adoption of international standards and certifications for compliance with import requirements of major importing countries.
- Promoting and facilitating market and product diversification in the horticultural export sector.

7. AVAILABILITY OF PRODUCT IN PAKISTAN VIZ AREAS:-**MANGO FRUIT KHARIF 2008-09 IN THE PUNJAB.****AREA:**

According to final estimate of Mango Fruit Kharif 2008-09 in the Punjab the area is placed at 277785 acres (112413 hectares) as against 2777381 acres (112250 hectares) planted last year. The acreage under the fruit is almost at par of the last year.

PRODUCTION:

The province of the Punjab is estimated to have produced 1324875 tonnes of Mango fruit during the current year as against 1373112 tonnes produced last year. The production has decreased by 3.51% over the previous year, which is due to unfavorable weather condition and severe wind storm that affected the average yield badly.

MANGO FRUIT IN THE PUNJAB FOR THE YEAR 2008-09

DIVISION / DISTRICTS	Area in Acres		Area in Hectares		Production in Tonnes	
	2008-09	2007-08	2008-09	2007-08	2008-09	2007-08
SAHIWAL DIV:	8085	8075	3272	3268	34581	33396
Okara	3050	3035	1234	1228	13888	13594
Sahiwal	4850	4850	1963	1963	19913	19008
Pakpattan	185	190	75	77	780	794
MULTAN DIV:	118430	118240	47926	47849	580654	585881
Multan	78000	78000	31565	31565	393028	401762
Lodhran	1000	1000	405	405	4666	4703
Khanewal	32900	32700	13314	13233	149813	146462
Vehari	6530	6540	2642	2646	33147	32954
D.G. KHAN DIV:	50642	50347	20494	20374	209265	218487
Muzaffargarh	47500	47300	19222	19141	195021	204792
Layyah	390	395	158	160	1820	1902
D.G. Khan	352	352	142	142	1406	1406
Rajan Pur	2400	2300	972	931	11018	10387
BAHAWALPUR DIV:	85100	85100	34438	34438	440136	473701
Bahawalpur	10750	10750	4350	4350	40525	44939
R.Y. Khan	71000	71000	28732	28732	381606	410757

Bahawalnagar	3350	3350	1356	1356	18005	18005
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8. DESCRIPTION OF AVAILABLE TYPES AND QUALITY:-

Types

There are 450 known Varieties of Mangoes in Pakistan. Some of the most popular ones are listed below:

LANGRA

It has originated as a superior chance seedling near Benares. Size medium to large, ovate, base round to slightly flatten, shoulders equal. Beak minute but distinct, sinus slight to absence, skin green and thin, flesh fibreless, yellowish brown in color, scented, highly melting, very sweet. Stone very small, flattened, oval. Weight of an average fruit is about ¼kg. Fruit quality very good, bearing heavy. Season (Early to mid Season). 1st to 3rd week of July. Heavy yielder.

AMAN DUSEHRI

It derives its name form village between Lucknow and Malihabad where it was originated as a superior chance seedling. Size small to medium, oblong, ventral, shoulder higher than dorsal, beak and sinus absent, color yellow when ripe, skin thin, pulp fibreless, flesh firm, very sweet, flavor nice. Stone very small, oblong, variety good to very best, bearing heavy, mid season (July), keeping and peeling quality good.

ALPHANSO, BOMBAY

This is a leading commercial variety of Bombay State and is one of the best in India. Because of its better adaptability to humid climate it has not been able to maintain its esteemed position in the dry districts of Pakistan. The Alphanso is successful in some districts of Sindh. Size medium, ovate, oblique, base obliquely flattened, Ventral structure boarder and much higher than dorsal, beak just a point, sinus not prominent, color of the ripe fruit yellow or brownish yellow, skin thin, pulp yellowish brown, flesh firm, taste very sweet, flavor excellent, almost fibreless. Fruit quality is good. Mid season variety harvested in July.

SAMMAR BAHISHT

It has originated as a superior chance seedling in Muzaffernager U.P. It got its name because of its pleasant flavor. Fruit medium, base slightly flattened, shoulders equal, sinus very light, beak point prominent, skin greenish yellow, thin, pulp yellow, very sweet,

sparsely fibrous, flavor pleasant to delicious. Stone medium and oblong, oval. Quality of the fruit is very good, keeping and peeling qualities well. Ripening season July-August.

FAJRI KALAN

It has originated as superior chance seedling in Bihar and got its name after the name of lady Fajri who selected and brought up its trees. Size big, oblong, obliquely oval, base rounded, shoulder unequal, with ventral higher than the dorsal, beak distinct, sinus very shallow with rounded apex. Skin thin, pulp color pale, fibreless, taste sweet with pleasant flavor. Juice moderate to abundant. Stone large, oblong. Fruit quality good to very good bearing late season August, Keeping quality good.

MUHAMMADWALA

Size small to medium, skin thick, yellow brown, pulp sweet, juicy, stone medium sized, fiber very little. Very hard variety. Season early August.

SAMMAR BAHISHT CHAUSA

It is originated as choicest seedling in a village Chausa in Malihabad, Tehsil of Lucknow. It is also known as “Kajri” or “Khajri”. There is resemblance between the foliage of Fajri and this variety but there are marked difference in fruit shape and quality. Fruit medium to large ovate to oval, base obliquely flattened, ventral shoulder raised than the dorsal, beak distinct, sinus shallow, apex round, skin medium in thickness, smooth, flesh firm, fibreless with pleasant flavor and sweet taste. Juice moderately abundant. Stone somewhat large oblong. Fruit quality good, bearing heavy, keeping quality medium to good. Ripening season in August (late)

RATAUL (ANWAR)

It has originated as a chance seedling in “Shohra-e-Afaq” Garden in Rataul. Now it has become popular in mango growing areas of Punjab because of its high flavor. Fruit medium, ovate, base flattened with equal shoulders, which are rounded, beak not prominent, absent in some cases, sinus absent, and apex round. Skin medium thick. Flesh firm, fibreless, flavor very pleasant, with very sweet taste. Juice moderately abundant. Some medium oval. Fruit quality very good. Ripening season in July (Mid-Season). Keeps well in storage.

SINDHRI

It is a leading variety of Sindh. Fruit shape ovalish long. Size big, length 15 cm, breadth 8cm. Thickness 7.4 cm. Weight 14.0 oz. Base obliquely rounded, cavity absent, Ventral

shoulder rising and round, dorsal ending in a curve. Skin color lemon yellow when ripe. Surface smooth. Pulp color Yellowish cadmium. Texture fine and firm fibreless. Stone medium size. Flavor pleasantly aromatic, taste sweet. Heavy yielder, early season.

BANGANPALI

Another variety of Sindh. Fruit shape is obliquely oval, Size is big, length about 14 cm. Breadth 9.1 cm Thickness 8.2 cm. Weight 22.0 oz. Base obliquely flattened. Cavity not prominent. Stalk inserted obliquely. Shoulders ventral typically razed, broader and much more higher than dorsal. Back almost rounded. Skin color dark green and glazy when unripe. Yellowish light green with very light crimson patches when ripe. Surface smooth, shining. Dots small distinct. Glands small, crowded.

NEELUM

Quality variety of Sindh. Fruit shape ovate, size small, length 7.7cm breath 5.9cm thickness 5.6cm weight 5.0oz. The base is rounded. Stalk inserted squarely. Cavity slight to absent, Shoulders unequal. Ventral is higher than dorsal, back rounded. Sinus slight to shallow, Beak acute to obtuse. Apex rounded Skin color sea green when unripe & yellow with reddish tinge when ripe. Surface smooth. Small dots with numerous small glands.

9. MANUFACTURING /VALUE CHAIN, PROCESSING:-

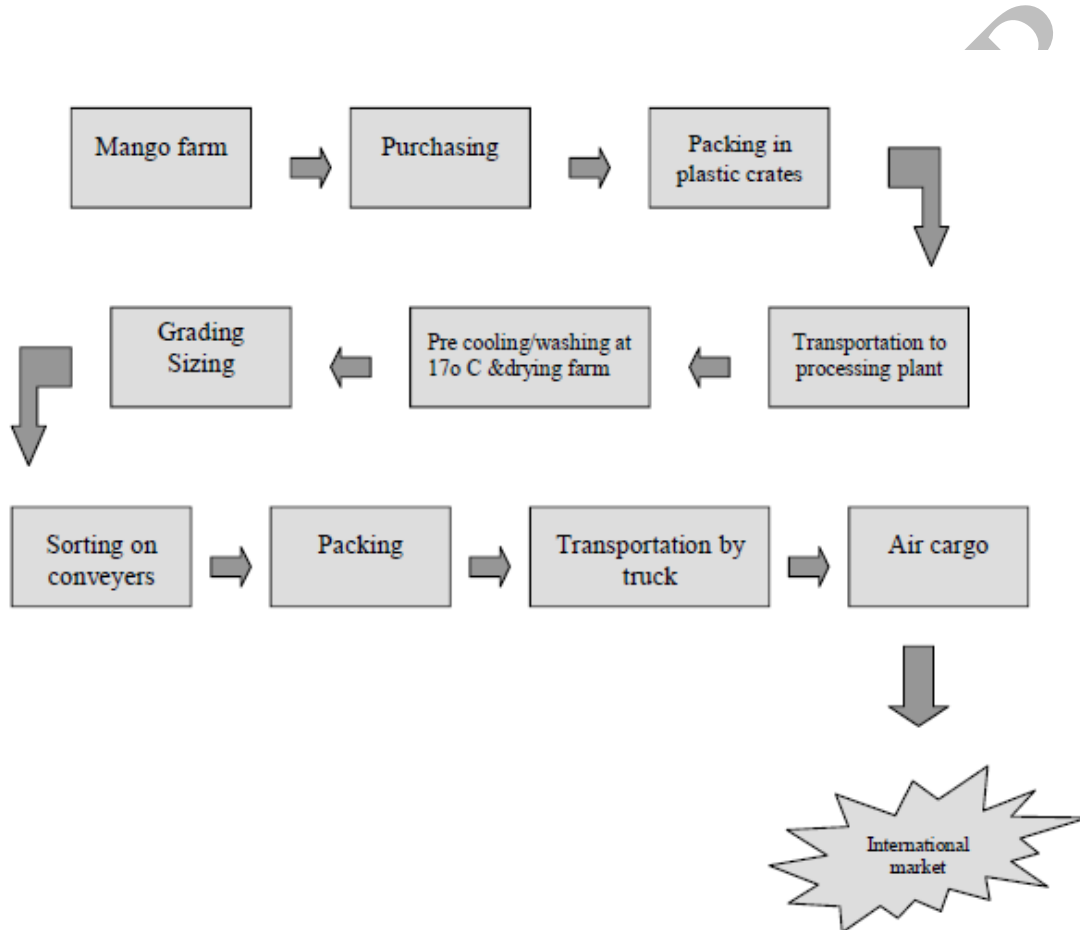
A value chain analysis of the mango export chain revealed that the actors like; input supplier, small scale and commercial scale producers, exporters, supermarkets and consumers play various roles and functions ranging from input supplying, producing, exporting, retailing and consuming. The analysis also revealed that there are different gross income, added value, gross margins and value share among the different actors in the chain. This is in agreement with what Roduner (2007) defines about value chain that a product before reaching the final consumer is transformed, combined with other products, transported, packaged, displayed etc, and in the process raw materials, intermediate products and final products are owned by various actors who are linked by trade and services, and each add value to the product.

From the value chain analysis it is realized that the actor who receives the highest value share is the producer followed by the exporter since they add more value to the product. However, the producer receives the least gross income because of his high cost of production (fixed and variable cost).

Additionally, from the analysis it is revealed that money exchange flows from upstream of the chain to downstream while there are two (2) – way information flow. In terms of traceability of quality issues, there is a movement of tracing from upstream to downstream and movement of tracking from downstream to upstream.

PROCESSING

Process Flow Chart



Harvesting

The main consideration during harvesting should be to ensure that mangoes are harvested at correct maturity and staining of latex (Sap) on the fruit is avoided. Mangoes should be harvested by cutting the stem 1 to 2 centimeters away from the fruit; this technique reduces latex exudation and staining, as well as the possibility of fungal organisms entering the fruit. The most suitable equipment comprises of a long mast with a cutting blade and a small bag under the blade to catch the fruit. Mangoes should never be knocked from the tree, dropped, or thrown onto the ground.

After harvest, latex should be allowed to drain away from the fruit; this is normally carried out by placing the mango with the stem downward on grass below the tree. The fruit can normally be placed directly into a ventilated field crate. The crate should not contain more than three layers of fruit. If possible, the fruit in the crate should be left under the tree until taken to the processing.

Hydro-Cooling/Cleaning

Hydro cooling is done to remove field heat from the fruit. It is important to remove the field heat as soon as possible. The heat reduction process is often carried at the time of cleaning mangoes on the farm with water. Field heat removal can also be done through “forced air cooling” and or in cold stores, but once the fruit moves through the cold chain, it should not be allowed to heat up again. In this process, it is assumed that field heat removal function will be performed at the processing facility. Mangoes delivered at the processing unit are gently dumped into water holding tanks (at normal water temperature) with overhead sprayers to wash and clean the field dust. The fruit is gradually cooled down at 17°C through different stages. The water may contain a mild solution of chlorine. This process helps stop latex flow and also reduce field heat. The time in residency of the fruit in the hydro-coolers is approximately 10-15 minutes. After hydro-cooling, washing and cleaning, mangoes are passed through drying tunnel that blows excess water off the fruit. Mangoes are then moved from the pre-cooling area to live belts that take it past the grader/sorters.

Grading, Sizing, and Sorting

Due to the normal ovate or oblong shape of mangoes, they do not lend themselves very well to mechanical graders, although weight based equipment works well.

At sizing and sorting stage, it is observed that mangoes should be of uniform size and color. Mangoes are sorted into color ranges and sizes by hand (normally this process is done on a conveyer belt which feeds fruit onwards to packing lines). After sorting mangoes are moved to the packing area. The fruit handlers wear soft white cotton gloves. Handling of the fruit involves sorting, hand wiping, cleaning.

Packing

The packers only pack one size of fruit so that packing personnel do not have to make decisions and therefore, they only put pre-sized mangos into the standard carton efficiently. Packing is done into mango cartons made of cardboard paper. Uniform size/weight

mangoes are individually wrapped in soft tissue papers before placing them into the carton. Typical sizes of 4.5 kg net weight mango cartons are (10.9 cm x 34 cm x 26.9 cm) and (10.2 cm x 43.2 cm x 27.9 cm). Smaller carton sizes for 4 kg & 2 kg net weight pack are now also being used. The carton should have a minimum bursting strength of 250-275 psi (lb per sq. inch). Ventilation and hand holes' openings should be designed to provide adequate handling, circulation of air and maximum cooling.

Mangoes are packed into the cartons by count. These counts are 6, 8, 10, 12, 14, 16, and 18 numbers of mangoes per carton, depending on the size of the mango. These counts must make the minimum guaranteed net weight. Mangoes are packed side by side, or on edge, rather than flat so as to maximize the number that will be accommodated in a single layer. Details of preharvest and post harvest processes are normally communicated to the buyer.

Cooling

Mangoes may be stored in refrigerated, humidity controlled facilities before and after packing. The proper temperature for holding Pakistani mangoes is 17 degrees Celsius at a relative humidity of 90-95% for mature green mangoes. At the mature green stage, mangoes may be stored for up to two weeks with no adverse affect.

Raising temperature to 21 degrees Celsius is frequently used to trigger ripening just before retail sale.

Depending on the cultivator, mangoes are placed in gassing chambers where ethylene gas is introduced to trigger additional color change. This is usually done just before shipping to market as it also induces ripening. However, this final preparation work is normally carried out by wholesale distributor at the time of delivery or by the retail chain after receipt of the fruit.

Ripening

The ripening of mangoes can be induced, according to destination and length of journey, by raising the temperature to 20 degree centigrade and/or by introducing ethylene into their holding atmosphere. But due to climatic conditions it is not recommended to ripe Pakistani mango before exporting it. In UAE due to high temperature there is no need to follow any processes to ripe the mangos. But in Europe ripening should be done after reaching the destination. For that purpose they have established ethylene chambers for ripening, Pakistani exporters acquire those chambers on rent for 1 or 2 days to ripe the their slots.

Mango is a valuable source of foreign exchange for many countries including Pakistan. Unfortunately, Mango is facing strange dilemma that on one side it has emerged as an important exportable commodity and on the other hand the economic life of our groves, productivity, yield and quality has gone down.

Although, soil and climatic conditions in Pakistan support mango production in terms of yield and quality, yet the country is not able to acquire the desired results. Number of factors contribute towards low production of mango. Unchecked use of unhealthy seeds forming diseased seedlings, insect attack (mango mealy bug, fruit fly, mango weevil, scales, mites), alternate bearing, mango malformation(vegetative or reproductive) and diseases (powdery mildew, anthracnose, quick decline, sooty mold, fruit rot and stem blight) are the greatest threat to the industry in major mango producing countries, including Pakistan. Also, low pollination, less fruit setting (less than 0.1%), high fruit drop percentage, unnecessary stresses (injury) and improper management practices during budding or grafting, time of irrigation, pruning and time of application of fertilizers are contributing substantially to the downfall of the industry. Adding to the ever increasing problems are the post-harvest losses contributing almost 40-50%.

These problems arise mainly due to non-availability of nutrients from the soil, inefficient use of resources, unawareness about the ripening and quality maintenance practices. Still, we are not able to cope with the problems arising due to ignorance of farmers and facilities involving storage and marketing. It is now, need of the hour that Government should take initiatives to educate farmers, formulate policies supporting infrastructural development, access to the markets and provision of facilities at low costs.

ISSUES/PROBLEMS/OBSTACLES:-

Pakistan is the world's sixth largest producer of mango, after India, China, Thailand, Indonesia and Mexico, and its share is around 5 percent in total mango production of the world. Although its mangoes are inherently attractive to consumers, the export volume is not significant (4 percent of production) and prices paid for export fruit are among the lowest in the world.

Also, the mangoes consigned to domestic and export markets suffer from fruit quality problems. A high incidence of disease breakdown and green-ripe fruit result in loss of

confidence by marketers, and reduced profits for everyone, from grower to retailer. According to them, the reason for these shortfalls is lack of supply chain management, combined with underdeveloped technical systems that are incapable of maintaining fruit quality, and lack of market intelligence, research and development.

The monitoring studies, conducted in international markets including UK, UAE and Singapore, and the domestic markets including Lahore, Karachi and Faisalabad, showed that there is even higher acceptance of Pakistani mango, provided the post-harvest quality concerns are addressed.

The government should also help by creating infrastructure like pack houses, modern grading facilities and common facility centers. Following problems are faced by exporters:

1. Fresh Mango Grading and Packing Facility

Unlike citrus, grading and packing facilities do not exist for mango in the mango growing areas. There are very few mechanized grading and packing facilities and most of those are located in Karachi. There is a potential for having investment in mango grading and packing facilities in mango growing areas of Punjab.

2. Mango Hot Water Treatment Plant

Mango is an important export fruit. Sanitary and phytosanitary requirements of the importing countries are becoming stringent with the passage of time. To meet those requirements, it is important to have hot water treatment facilities for mango; for taking care of the issue of fruit fly. There are some existing facilities in Karachi; however, there is need for establishing more facilities in mango areas of Punjab.

3. Mango Vapor Heat Treatment

Sanitary and phytosanitary requirements of mango importing countries differ. There are some countries like Japan which require vapor heat treatment instead of hot water treatment to ward off dangers of fruit fly. Therefore, this is also potential investment project.

4. Irradiation facility

One important means for meeting the sanitary and phytosanitary requirements for exporting mangoes is irradiation. This is especially important in the context of exporting mangoes to the largest export market of USA. One such facility has become operational in Lahore. There is need for establishing a larger facility in Karachi and Multan for mango,

which will be used for other horticulture/food products. Detailed feasibility study for this project has been developed by Pakistan Horticulture Development and Export Company.

5. Lack of cargo space and poor infrastructure

Due to shortage of cargo space and unreliable service of national carrier, meeting delivery schedules for exporters becomes difficult.

Exporters from Multan and other areas of Southern Punjab found it difficult to export without direct flights and adequate cargo space.

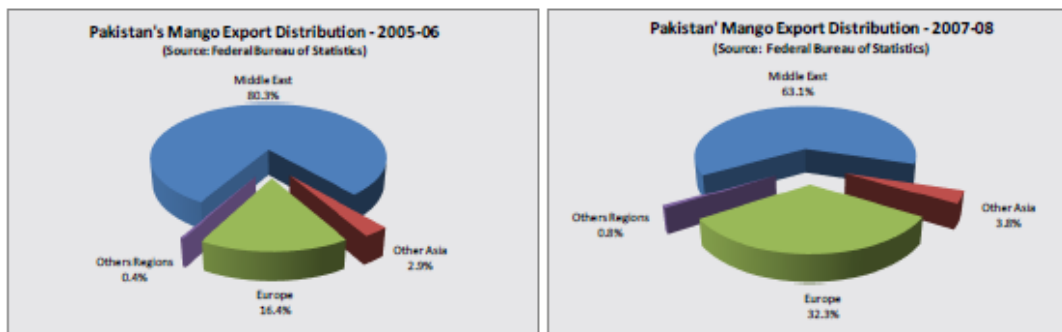
Mangoes are exported mainly by air, however, shortage of air cargo space calls for exploring alternate mode of transportation for mango exports. The mode of transportation by sea is another possibility for exporting mangoes to U.K. given that the size of consignment is large enough.

The un-ripened mangoes have storage life of about 25 days in cold storage, according to the market; it takes about 18 to 20 days for a shipment via sea to arrive at London from Karachi. This provides a fair period of time for mangoes to be ripened after their arrival at the destination port.

10. CURRENT CONSUMPTION OF PRODUCT IN PAKISTAN /PRODUCT USERS:-

Mango is widely used fruit both in raw form and in processed form. Ripe mango is eaten heartily all over the world and it is in fact its primary use. Processed products of mangoes occupy second position though these are also used at large scale. Leaving aside the wastage about 90-94% fruit is consumed locally. The rest of produce is exported in fruit form or processed form. Currently, approximately 3% of mangos are processed into value added product such as pulp for use in drinks and ice cream, canned mangoes and dried mangoes. It is also processed into preserves, juices, jams, jellies, nectars as well as crisp mango chips which are eaten as snacks. Mango is an excellent source of vitamins A, B and C and contains water, proteins, Sugar, fat, fibers and iron etc.

USA is the largest market for mango imports in the world accounting for about one fifth of the total global mango imports. However, Pakistan has not been able to enter into this market due to quality compliance issues. During the last three years, there has been a shift in distribution of Pakistan's mango exports shown in the following figures:



Within a period of two years, the share of Europe has doubled to become 32%; while the share of Middle East has shrunk to 63%. This trend is indicative of the diversification strategy adopted by Pakistani mango exporters. Within Middle East, UAE, Saudi Arabia and Oman are the large importers; while in Europe, UK is the largest importer of Pakistani mangoes.

Mangoes come in market early in the May and remain in market till August/September. The typical mango season is from June to September, with export surpluses available in July. Most of the traders do not follow the recommended processing methods.

The main orchards of mango are in district Multan, and district Rahim Yar Khan, which include: Rahimabad, Jamaldin wali, Sadiqabad, Shaikh Wahan, Mianwali Qureshian Zahirpir, Bagho Bahar, Tirandah Mohammad Panah.

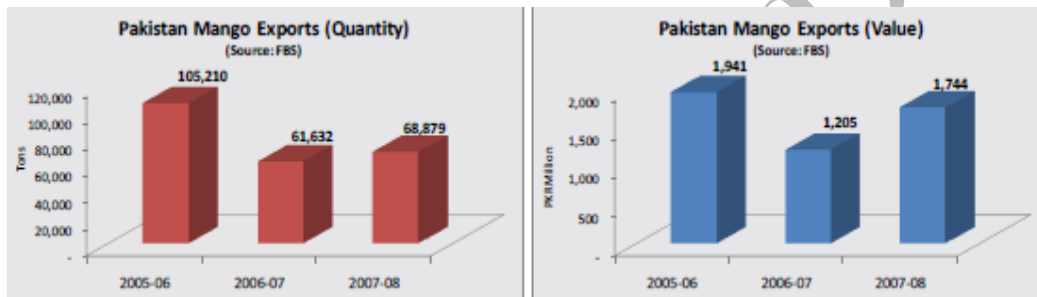
Whereas, Hyderabad, Tandojam, Tando Allahyar, Tando Jan Muhammad, Mirpur Khas, Digri, Umer Kot, Nawab Shah, Naushero Feroz, Khairpur Mirus, Ghotki, Bahawalpur, Shujaabad, Muzaffargarh, Khan Garh, KoatAddu, Khanewal, Sahiwal, Vihari, Okara, Faisalabad, Jhang, Toba Tek Singh and Sargodha are also very famous for mango production.

EXPORTS OF PAKISTAN 3 YEAR FIGURES:-**EXPORT FROM PAKISTAN**

H.S #	COMM.BY COUNTRIES	JULY - JUNE 2009-10			JULY - JUNE 2008-09			JULY - JUNE 2007-08		
		000.KG	000.RS.	000.\$	000.KG	000.RS.	000.\$	000.KG	000.RS.	000.\$
8045020	MANGOES	84,921	2,522,399	29,382	73,437	2,307,044	29,491	68,879	1,743,859	27,765
		84,921	2,522,400	29,382	73,437	2,307,046	29,491	68,879	1,743,859	27,765
	Afghanistan	1,781	55,979	652	1,592	46,081	589	8	80	1
	Australia	5	150	2	73	2,349	30	0	12	0
	Austria	90	3,458	40	80	2,903	37	85	3,174	51
	Bahrain	1,890	52,039	606	1,003	28,721	367	961	25,982	414
	Bangladesh	60	2,279	27	60	2,694	34	70	1,889	30
	Belarus	5	271	3	5	182	2	-	-	-
	Belgium	1,680	50,351	587	652	26,551	339	563	11,815	188
	Brunei Darussalam	16	738	9	18	642	8	15	435	7
	Cameroon	-	-	-	-	-	-	7	203	3
	Canada	1,097	46,496	542	801	32,085	410	509	17,743	282
	China	12	588	7	16	638	8	-	-	-
	Cyprus	1	42	0	0	12	0	-	-	-
	Czech Republic	-	-	-	-	-	-	1	19	0
	Denmark	87	2,773	32	146	4,667	60	246	7,127	113
	France	144	4,916	57	1,409	51,175	654	696	20,081	320
	Germany	2,211	83,034	967	1,766	67,062	857	1,436	46,079	734
	Greece	111	6,214	72	161	5,616	72	95	4,093	65
	Hong Kong S.A.Re.Chi	80	3,094	36	146	6,338	81	40	1,246	20
	India	-	-	-	24	753	10	-	-	-
	Indonesia	-	-	-	1	39	0	1	26	0
	Iran (Islamic R.)	2,687	92,213	1,074	7,482	237,879	3,041	1,491	36,450	580
	Ireland	19	801	9	43	1,855	24	4	141	2
	Italy	585	19,604	228	569	20,078	257	424	14,390	229
	Jordan	87	2,078	24	64	1,921	25	-	-	-
	Kazakstan	-	-	-	2	97	1	1	43	1
	Kenya	-	-	-	1	36	0	-	-	-
	Korea, Republic of	-	-	-	0	20	0	-	-	-
	Kuwait	707	18,605	217	1,034	30,466	389	675	16,239	259
	Kyrgyzstan/Kyrgyz R.	-	-	-	2	85	1	2	60	1
	Libyan Arab Jamuhir.	168	9,416	110	-	-	-	-	-	-
	Malaysia	397	14,939	174	347	12,624	161	346	12,199	194
	Maldives	210	7,209	84	133	5,202	66	101	2,554	41
	Nepal	7	219	3	17	612	8	-	-	-
	Netherlands	380	15,246	178	335	12,965	166	213	7,831	125
	New Zealand	0	38	0	-	-	-	-	-	-
	Norway	783	33,264	387	724	28,812	368	931	28,383	452
	Oman	5,727	142,054	1,655	3,679	97,164	1,242	5,649	109,867	1,749
	Qatar	2,570	78,576	915	1,885	64,716	827	2,360	66,079	1,052
	Reunion	2	60	1	-	-	-	-	-	-
	Russian Federation	14	573	7	-	-	-	18	456	7
	Saudi Arabia	17,885	484,473	5,643	14,248	394,865	5,048	13,884	320,762	5,107
	Singapore	579	17,547	204	381	13,187	169	575	16,673	265
	Slovenia	-	-	-	-	-	-	100	1,208	19
	South Africa	1	27	0	-	-	-	5	166	3
	Spain	39	1,573	18	40	1,438	18	24	739	12
	Sri Lanka	-	-	-	16	395	5	-	-	-
	Swaziland	3	150	2	3	167	2	3	114	2
	Sweden	493	17,053	199	433	15,736	201	338	9,902	158
	Switzerland	529	17,626	205	484	20,451	261	346	13,384	213
	Turkey	40	2,361	28	-	-	-	-	-	-
	U.S.America	-	-	-	3	97	1	30	1,353	22
	United Arab Emirates	25,949	657,471	7,658	18,790	493,213	6,305	19,936	415,142	6,610
	United Kingdom	15,791	576,802	6,719	14,771	574,457	7,343	16,693	529,720	8,434

Mango Export

Pakistan is the sixth largest exporter of mangoes in the world. In 2007-08, Pakistan exported 61,632 tons of mangoes; while in 2006-07, export figure was 105,210 tons. Pakistan's compounded annual growth rate of mango exports during the period 2000-07 remained as 3.2%, which was much lower than the export market growth rate of 9.0% during the same time period. This indicates that Pakistan has not been able to tap the growing potential of fresh mango export market. Two main mango varieties exported from Pakistan are Sindhri and Chaunsa; Sindhri being the main variety of Sindh. Three year trend of Pakistan's mango exports are shown in the figure below:



COUNTRIES OF EXPORT:-

The major export destinations for Pakistan mangoes are the Middle East, the U.K and Europe. The majority of exports are consumed by expatriate Pakistani and other Asians.

MODE OF EXPORT:-

The mode of export of mango fruit is by air. Mango is exported by sea to Arabian countries only. Since shipments to the European countries by sea have also started, it would help export of Pakistani mangoes in a big way. Pakistani fruits have huge potential in foreign markets and exporters must take advantage of the situation by adopting international standards.

The problems encountered by the exporters on account of shipment by air and sea are reportedly as follows:

By Sea

- Non-availability of reefers especially 20 feet containers
- Non-adherence to notified transit time
- Unilateral increase in freight amidst export season
- Off-loading cargo during transit

- Hidden charges (fuel adjustment, plug-in charges, container washing charges,
- Handling charges at port of discharge etc).
- Non-entertainment of claims on account of cargo loss/damage caused by
- Operational inefficiencies of the carriers like malfunctioning of reefer containers,
- Unreasonably extended transit time etc.

By Air

- Off-loading cargo at port of loading or other ports
- Space blocked for cargo to be loaded from other ports (for instance, space blocked at Karachi for cargo to be loaded from Multan or Faisalabad).
- Non-performance of commitments to accommodate non-regular/other shippers.
- Misuse/misinterpretation of indemnity bond leading to rejection of genuine claims.
- No/limited service for emerging markets (Al Mate, China)

GOVT INCENTIVES ON EXPORTS:-

Govt. of Pakistan is providing an incentive to Horticulture export enterprises by way of picking upto 8% or 50% (whichever is less) interest on loans obtained for cool chain and cold storage. This facility is available to all users, whether the unit is export oriented or not. TDAP will help exporters in opening export offices abroad by giving 50% of the rental and 50% of the salary.

LIST OF TOP MANGO EXPORTERS FROM PAKISTAN

S. #	Name of Company	Contact Person	Address	Email/ Website	Ph#/ Mob
1	M/s. Iftikhar Ahmed & Company, KARACHI	Mr. Waheed Ahmed,	New Fruit & Vegetable Market, Plot # 7, Super Highway, Karachi	email. iac@iac-fruit.com URL. www. iac-fruit.com	Cell: 0321-8272772, Tel: 92-21-36871092-93
2	M/s. Al-Abbas Enterprises, Multan	Mr. M. Abbass,	Khawat # 478, Rawan Road Tatepur, Multan.Pakistan	alabbas.enterprises@yahoo.com	Cell: 0300-8630807
3	CEO, M/s.Durani Associates, Karachi	Mr. A. Qadeer Khan Durrani,	Plot # D-25, Block – 6, F.B. Area. Karachi	Email. Durrani_associates@yahoo.com URL. www.durrani-fruits.com	Cell: 0321-8275648 Tele# +92 21 36349491
4	M/s. Roshan Enterprises,	Mr. Khalid Ejaz, CEO,	B 51, Rizwan Society,	roshan@roshan.com.pk	Cell: 0300-8251062

	KARACHI		University Road, Karachi (Pakistan)		Tel# 92-21-34645717
5	Union Fruits	Mr. Abdul Malik, Chairman, All Pakistan Fruits & Vegetable Association, Karachi	54 G, Gulzar Chowk, Manzoor Colony, Karachi (Pakistan)	Email. unionfruit@unionfruit.com URL. www.unionfruit.com	Cell: 0333-2141796 Tel# +92 21 35891509, 35891067
5	Chase International, Karachi	Mr. Abdul Wahid,	Suit # 6 & 7, Humera Mansion, G. Allana Road, Kharadar Karachi, Pakistan.	Email; info@chase.com.pk URL: www.chase.com.pk	Cell: 0300-2015923 Tel# +92 21 32312366-67
6	M/s Jehanzeb Muhmand & company, Karachi	Mr. Jehanzeb Khan Muhmand	R 211 2 nd Floor Regal Trade Square Saddar, Karachi.	jkexporter@yahoo.com	Cell: 0301-3032763
7	M/s Rishad Mateen & Company, Karachi	Mr. Abdul Mateen Siddiqui,	22,3rd floor, Mian Chambers, Shah rah e Liaquat, Karachi (Pakistan)	Email. rishadmateenrm@gmail.com URL. www.rishadmateen.com	Cell: 0300-8276284
8	F. A. International Karachi	Mr. Aslam Pakhali,	64/5 Bombay Bazar, Opp Shia Khoja Masjid Karachi	pakhali@cyber.net.pk	Cell # 0300-8259125
9	M/s Imtiaz Enterprises, Karachi	Mr. Imtiaz Hasan	No.27 , New Sabzi Mandi , Super Highway , Karachi Pakistan	http://www.imtiaz.biz Email : info@imtiaz.biz	Cell: 0300-2111495 Phone # 92-21-36380730
10	M/s Agrica MDS International	Mr. Binyameen Yousuf,	Shop 1 to 16, Veg. Mkt, S/H way Karachi	mdskarachi@hotmail.com	Cell: 0332-3000300 Tel#.92-21-4933649
11	M/s Imran Qasim Trading Est., Karachi	Mr. Imran Ali Zaidi	H-32, KDA Overseas Banglows Block-16-A Gulistan-e-Johar, Karachi	iqtraza@yahoo.com	Cell: 0302-8254671 Tel# 92-21-6975149
12	M/s Sahara Enterprises,	Mr. Muhammad	160/2, 11th Commercial St,	Sara- enter@gmail.c	Cell # 0307-8888887

Karachi.	Firdous,	Phase-IV, D.H.A, Karachi	om	Tel: +92 21 34550700
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LIST OF GAP CERTIFIED ORCHARDS

S. #	Name of Company	Contact Person	Address	Email/Website	Ph#/Mob
1	Lutfabad Mango Farm,	Major (R) Tariq Khan,	1795. D, Justice Jabbar St, Khurshid Colony, Multan, Pakistan	Isma ilz ai1 @g ma il.c om	Cell: 0302-8632863
2	Owner, Surbuland Mango Farm	Barrister Wasim Khan,	Lutaf Abad, B.Z, University Road, Multan Pakistan	nwkbadozai@yahoo.com nwkbadozai@gmail.com	Cell: 0300-8637704
3	Asim Agriculture Farm,	Mr. Imdad Nizamani,	Tando Allah yar Sindh, Pakistan	Imdad_nizamani2001@yahoo.com	Cell:0300-8372394 Tel: +92 22 3898222
4	Murtaza Agriculture Farm	Mr. Zain Shah,	Majeed Kilrio, Sakrund Distt: Nawabshah	Zainshah78@gmail.com	Cell: 0300-2024454
5	Hyder Shah Fruit Farms,	Mr. Junaid Shah	Hyder Shah Village, Tando Allah Yar, Sindh, Pakistan	junaidhydershah@live.com	Cell: 0344-3523177
6	Rangowon Wala Fruit Farm	Mr. Mahmood Rangoonwala	St 9, Gabool Town, Block 22, Federal B area Karachi Pakistan.	mehmood@terryworld.com	Cell: 0300-8252232 Tel: +92 21 36999973-4
7	JWD Fruit Farm	Syed Ahmad Mahmood	Jamal din wali Sadqabad dstt Rahim Yar Khan	Kmujib2010@gmail.com	
8	Ali Tareen Fruit Farm	Jahangir Khan	Ali Tareen Fruit	anbajwa@gmail.com	

		Tareen	Farm, Lohdarn		
9	Samza Fruit Farm	Zahid Hussain Gardezi	Al-Mamtaz, 12-13, Syed Muhammad Kaswar, Gardezi Road, Multan.	zahidgardezi@hotmail.com	
10	Muzafar Nagar Farm	Muzafar Hayat Khan	Khakwani, 1/Z, Quaid-e-Azam Road, Multan Cantt	Khakwani@gmail.com	
11	M. A Links	Muhammad Habib ur Rehman	Room No.2, Zakria Specilias Chambers Building, Nishter Road, Multan.	malinksmango@gmail.com	
12	Al-Abbas Enterprises	Malik Gulam Abbass	498 Naqshband colony, Khanewal	Alabbas.enterpris espk@yahoo.com	
13	Multan & Vehari Mango Growers Association	Farid Khan Khakwani	Sharif Manzil Kutchery Road, Multan.	skkhawani@msn.com	

13. LIST OF GLOBAL IMPORTERS- LIST OF PAKISTAN PRODUCT

BUYERS:-

MAJOR IMPORTERS OF PAKISTANI MANGO

Country	July-June 2006-07			July-May 2007-08			July-May 2008-09	
	000KG	000RS	000\$	000KG	000RS	000\$	000KG	000RS
France	1505	34450	568	418	11108	178	1248	44951
Germany	1082	30680	506	915	28713	461	1116	42740
United Kingdom	13051	328849	5421	11965	369042	5922	10006	37305
Oman	4533	63246	1043	3953	77114	1238	1754	40693
Qatar	1110	24160	398	1946	56151	901	1240	46145
Saudi Arabia	12412	226592	3735	8977	213938	3433	9084	26567
UAE	16239	247266	4076	15277	279717	4489	12474	29411
Bahrain	1230	233014	3684	791	21167	340	528	15323
Norway	874	24689	407	710	20978	337	521	18681

Kuwait	528	11426	188	427	10009	161	706	23222
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11. SWOT Analysis

Strengths

- Pakistan’s biggest cluster of mango production
- Favorable environmental conditions
- Easily available farm land
- Varieties like “Chaunsa” mango are recognized as one of the best varieties
- Pakistan is included among the top ten mango producing countries in the world
- Priority fruit crop supported by major programs
- Availability of raw material (mangoes) with a consistent growth in production
- Availability of farm labor and technical expertise

Weaknesses

- Irregular & inconsistent supply of quality fruits
- Short storage life and inadequate post harvest facilities
- Non availability of cold storage and reefer container facilities at airports & seaports
- Limited air space and high freight costs
- Low literacy rate in majority of mango growers
- Lack of modern agricultural practices
- Mismanagement of farm land (dependant upon the Farm Manager)
- Lethargic behavior of employees towards farm work

Opportunities

- Prospective markets within geographic proximity i.e., Middle Eastern countries.
- Domestic competition level is moderate for a modern processing unit.
- Presence of premium domestic markets.
- Lower tariff imposed by importing countries under GATT and by EU countries.
- Expansion opportunity in new markets like Far East and Central Asia.
- Rising local and international consumption and exports of mango from Pakistan
- Increased margin for growers; provided demand and supply gap in both national and international markets

- Export markets are open in post WTO era

Threats

- Competition from other mango producing countries.
- Trade protectionism, which may be applied by countries due to “fruit/white fly virus etc.
- Ruthless competition amongst local exporters.
- Trade restriction if imposed by the importing countries.
- Illegal supplies of mangoes by local exporters through ferryboats to Dubai
- Shortage of Water
- Fruit Fly problem

12. PROPOSALS FOR EXPORT PROMOTION:-

CURRENT ROLE OF TDAP-REGULATORY ISSUE:

- Govt. of Pakistan has made it mandatory not to export mango before 20th May.
- The export of mangoes to Europe, Canada, Iran, China, Kuwait and Bahrain by air shall be in 2, 3, 4,5,6,7 and 8 Kilograms with 5% variation on either side. Export of fruits in retail packing should indicate gross weight.

TDAP IMITATIVE:

- TDAP is providing facility to exporters for participation in exhibition and delegation.
- Seminars and workshops are conducted from time to time to educate growers and exporters of mangoes.

IDENTIFICATION OF NEW MARKET:

America, Japan, SAARC countries and central Asian states and China may be found as new markets for export of mangoes.

LAST YEAR FINANCIAL ACTIVITIES:

Last year this office organized one day seminar on “Pre-post on Harvest Technology and value addition of mangoes” at Bahawalpur in collaboration with BCCI. The expenditure incurred was Rs. 57235/-. There were eighty participants. It was a very successful. Report of the seminar is attached. Inspired by this Chamber of Commerce & Industry Rahim Yar Khan has also requested to organize such seminar at Rahim Yar Khan. It is under consideration.

CONCLUSION:-

As far reports on commodities are concerned there is no dearth of them. Similarly there are a lot of public and private organizations engaged in improvement in production and export of fruit and vegetable including mango. But practical work is not being done as it is projected. Moreover, there is utter lack of coordination between these departments, institutes, organizations. These should be under the umbrella of TDAP and should work in coordinated manner. There is no coordination between growers and exporters of fruits particularly of mango in Southern Punjab. Individually they show their concerns; but they do not have recognized association like chambers or other all Pakistan level organization; therefore, they fail to formulate concrete proposals. At present cold storage facilities may be provided in or in the vicinity of Multan airport. VHT plants may be provided in cluster of mango orchards along with plucking, grading, washing, packing facilities.

PROPOSED ACTION PLAN:-

It is proposed that a delegation of Mango exporters from Southern Punjab may be sent to Japan.

REPORT ON SEMINAR ON “PRE-POST HARVEST TECHNOLOGY AND VALUE ADDITION OF MANGOES” AT BAHAWALPUR.

As per schedule of events for the year 2009-10, Trade Development Authority of Pakistan, Multan organized one day seminar on the above mentioned subject in collaboration with Bahawalpur Chamber of Commerce & Industry, Bahawalpur on 15th June, 2010 at Bahawalpur Chamber of Commerce & Industry, Bahawalpur.

The seminar was presided over by President Ch. Muhammad Afzal. Waheed Raza Bhatti Director General (SRO) TDAP, Lahore was the chief guest.

Copy of the programme of the seminar is at Anx-A.

Speakers delivered lectures on the following topics:

1. Mr. Tanveer Ahmad ---- Imperatives of Successful Gardening, Analysis of Soil And water and Use of Fertilizers.
2. Akhlaq Ahmed Khan ---- Development of Value Added Products of Mango.
3. Mr. Tariq Malik ---- Disease Control, Harvesting Technique, Selection of Exportable Fruit/Gardening and Storage.
4. Syeda Alina Zahra Gilani ---- Role of Trade Development Authority of Pakistan.
5. Mr. Sohail Asghar ---- Export Marketing, Packaging and Transportation of Mangoes.

A lively open discussion was followed by speeches with a view to enhance interaction between resource persons and participants. In addition to the speeches of the speakers open discussion among the participants was encouraged for the sake of transfer of maximum information and knowledge. The quality of the discussion of the seminar was quite satisfactory as was shown by the participants during the questions/answer session after the speeches. 85 persons participated in the seminar.

Mr. Akhlaq Ahmed, Horticulturist Agriculture Research Centre, Bahawalpur discussed the problems like lack of registered nursery plants, improper irrigation, fruit drop, extreme weather conditions (Frost), poor marketing system, large tree size, improper plant protection and post harvest issues. He said that irrigation requirements are determined by the age of plant, phonological stage of the tree & weather conditions. He advised to always

irrigate dry soils & never to irrigate the wet soil. He also added that the exporters should export value added products instead of mango fruit.

Muhammad Tariq Malik, Entomologist Mango Research Centre, Shujabad-Multan stated that harvesting of fruits should be done on a clean dry day. Care should be taken to prevent snapping off the pedicel. Injuries to the fruits should be avoided at all stages of handling. Pruning is very important. He emphasized to keep the plant structure at manageable size. Fruit should not come in contact with soil during harvesting.

He continued that optimization & standardization of operational parameters of hot water treatment (HWT) System to control post harvest disease and insects of mango is an ongoing process at Mango Research Centre, Shujabad.

Muhammad Sohail Mazhar, Project Development Officer, Mango Supply Chain Management Project (ACIAR), Pakistan Horticulture Development & Export Company said that the project was developed as a joint initiative between the governments of Australia and Pakistan to remove the constraints limiting mango supply chain development in Pakistan. He added that traditional supply chain practices should not be adopted anymore to ensure quality product. Supply chain to the consumer should be a benchmark. This will bring modifications to packaging and transportation resulting in better quality fruit at retail.

Mr. Tanveer Ahmed, EDO Agriculture, Bahawalpur appreciated efforts of TDAP for organizing workshops and seminar. He said that the basic problem is of expertises and technology and the use of technology. Government of Punjab has decided to educate farmers by providing them free schools at their door steps. This training program will start in July 2011. He requested the exporters to avail such opportunities and adopt new technology. No change can take place without adoption of new technology. He added that Government has set up a laboratory for soil and water testing. Test charges are minimum. Gardeners must avail this soil and water testing facility to ensure speedy and healthy growth of plants.

Syeda Alina Zahra Gilani, Marketing Officer Trade Development Authority of Pakistan, Multan informed about the completion of run way and operation of wide bodied aircraft from Multan Airport in near future. This will solve the nagging problem of cargo. Now

exporters will be in a position to send their consignment direct to the Gulf and European countries. She said that TDAP is providing 6% R&D on FOB value of export of Agro Processed Items. Besides, TDAP arranges exhibitions, delegations and seminars. Audience was also informed about setting up of Food Processing Centre at Multan which will provide cold storage, packaging and grading facilities.

Proposal to improve exports of Mango:

1. Grading/ Packaging, Vapour Heat Treatment Plant and Preservation Plant must be established at a suitable place in the southern Punjab where exportable mangoes can be properly processed.
2. A vapour Heat Treatment Plant must be established at Multan and Rahim Yar Khan. It may help in increase of mango export to Far East countries specially Japan.
3. TDAP may set up a modern research and training institute for mangoes in Multan.
4. One window operation for export of Mangoes may be initiated to facilitate and give boost to mango exports.