

## IS KINNOW BETTER THAN ORANGE?

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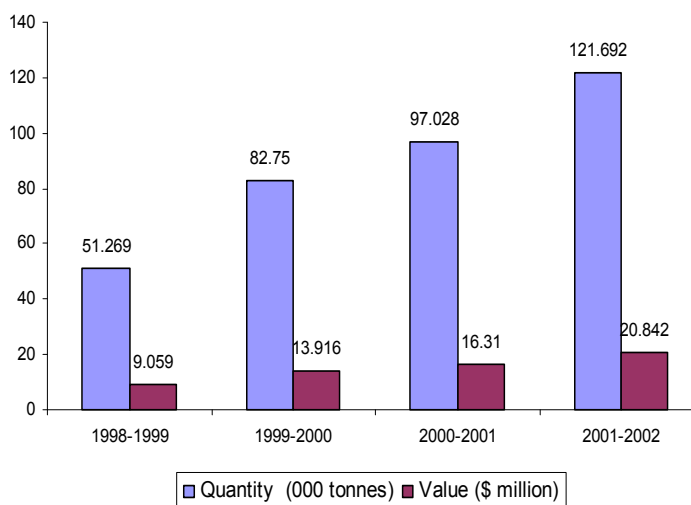
The awareness about importance of balanced food for the maintenance of good health has prompted extensive research in the field of horticulture. Fruits being rich in food components have attained a pivotal position in formulation of balance diet formula. Thus, as a result, there is wide spread realization about the use of fruits in the daily food which has increased their demand during the previous century.

During the recent past, local as well as international demand of fruits has increased tremendous boost in the daily food and thus the international trade has become well organized as a regular feature.

Presently, the total fruit production of the world is 400.4 million tonnes in which citrus fruits contribute 98 million tonnes indicating the largest share (24.47%) in the world fruit production. Same is the case with reference to its share in the horticultural trade. The international trade of fruits and vegetables is worth of over \$ 77 billion in which citrus fruits have a maximum single share of \$ 8 billion (10.38%) with the total trade of more than 10 million tonnes as fresh citrus fruits while processed products are in addition to that.

As far as, citrus industry of Pakistan is concerned, it has profound impact of

the international demand and this has expanded many times during the last two decades. Presently, over 2 million tonnes of citrus fruits are produced annually and is ranked at 11<sup>th</sup> position in the citrus producing countries of the world. Of the total fruit production of 6.0 million tonnes in the country on an area of 0.66 million hectares, citrus cultivars ranked at top being on 199.0 thousand hectares with annual production of over 2 million tonnes. Citrus alone captures a highest share of 30% of the total fruit production and acreage, while in the total production of citrus cultivars, share of Kinnow is more than 65%. This gives a clear impression that Kinnow has a



**Fig. 1: Increasing Trend in total citrus export**

major importance in citrus industry of Pakistan and the share of other citrus fruits in production as well as export is just nominal.

Kinnow mandarin has a notable position in the country's citriculture on account of its attractive colour, heavy

juice contents of about 50%, aromatic flavour, excellent sugar acid blends, exquisite taste and a rich source of vitamin C. The juice as well has nice and delicate aroma and pleasant taste. Modern day's science is unanimous in its opinion categorizing Kinnow like the other citrus fruits as "Scurvy Preventives" beneficial to blood purification and obesity curatives. With passage of time it is gaining good fame abroad hence its export is on increase every year.

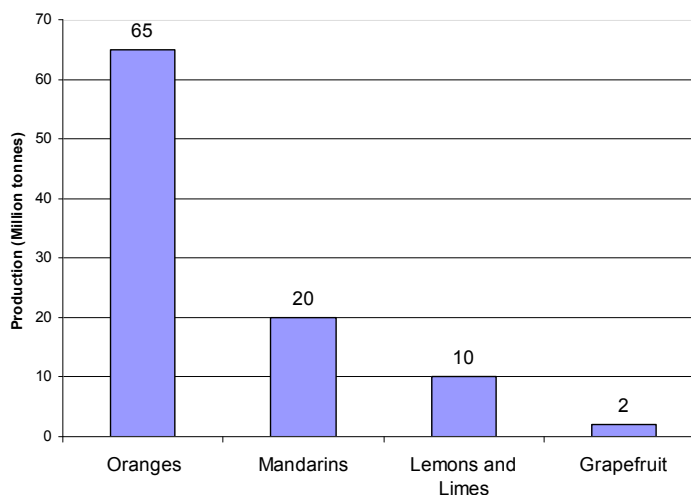
It is good luck for Pakistan that it is the largest Kinnow producing country in the world. Central Punjab is best suited for Kinnow production regarding topography, soil, water and climatic conditions. Out of citrus grown in the country, 95% comes from Punjab province with over 70% being Kinnow mandarin alone.

In the world citrus trade, Pakistan is at 18<sup>th</sup> position during the year 2003. Total quantity of fruits exported from Pakistan was 289.6 thousand tonnes, worth of \$ 89.18 million during this year. In this export, share of citrus in terms of quantity was 121.692 thousand tonnes (42.0% by quantity) and of value \$ 20.842 million (23.3% by value). The trend is on ever increase for the last several years, thus, it is evident that citrus is attaining prime importance in export fruit market of Pakistan (Fig. 1). Of the total export of citrus fruits, more than 95% share is of Kinnow.

Against production, however, only 6.64% of our citrus is exported while this share goes over 50% in several countries. This is apprehended that this

small share could be due to vulnerability of Kinnow to damage and bruises during handling which makes it difficult and expensive to export. The low prices of Kinnow in international market as compared to other citrus fruits like oranges is another factor of concern. Kinnow is loose skinned like other mandarins and is easily damaged. This is the reason that average unit price of our kinnow is not more than \$ 171 tonne<sup>-1</sup> in the international market where as some fresh citrus exporting countries are earning average unit price even higher from \$ 500 tonne<sup>-1</sup> to \$ 700 tonne<sup>-1</sup>. This is because the sweet orange is their major unit of citrus export.

The other reason of being low priced fruit is its seediness which annoys the consumers. Moreover, export quality



**Fig. 2: World Citrus production (2002)**

standards are seldom followed which brings bad reputation in general. As, our export is limited only to Kinnow, Pakistan's share in world citrus export remains only 0.009%, as against other major citrus exporting countries which mainly grow and export sweet orange (Table 1). Even, if we manage Kinnow export properly by following the export quality standards, the problem of

seediness and vulnerability to bruises in Kinnow remains which precludes attaining high value export.

If, on the other hand, compared in the world citrus trade and production scenario, the concept is totally different as against trend of Pakistan. The share of mandarins in the world citrus production, export and processing is far less than oranges. It is dominant by oranges and its share is 69.38% whereas mandarins contribute 16.32% only (Fig. 2).

The situation is not without reason. Oranges are available in wide range with respect of quality including seedlessness and adaptability. Being easier to handle after harvesting they reach in export market safe and can be supplied as per desire of the consumers. Thus these fetch more profit.

The other major sector of citrus business is manufacture and export of juice and concentrates. Presently, world trade of fruit juices stands at \$ 4 billion and 50% of this gigantic market is shared by citrus juices. Pakistan exported 675 tonnes of citrus juice worth of US\$ 612.59 thousand in 2001. The average unit price was of \$ 907.5 per tonne. At present, negligible amount of our citrus production is processed. The only reason is that, in the world, frozen concentrated orange juice (FCOJ) is in a great demand. This demand is expected to rise in view of increasing world population and prosperity as well as due to an urge for taking the balanced diet.

There are only few countries lead by Brazil exporting FCOJ in the world market. Israel is the largest producer of grapefruit concentrate and Italy is known for its lemon concentrates. We have the edge of being the only producer of frozen concentrated Kinnow juice which is in great demand due to its attractive

colour and high quality. But, there are some problems regarding its processing. i) Generally citrus fruits like oranges are easily processed due to less number of seeds but Kinnow mandarin is a high seeded cultivar containing 15-30 seeds/fruit. Even most efficient processing machines fail to extract juice from highly seeded citrus fruits. Processing machines separate seed core from Kinnow but, even then, some seeds are crushed in juice this will then require de-bittering which cost heavily and makes the juice expensive. ii) Another major problem with Kinnow juice is that if it is processed for juice, an unavoidable amount of pulp remains in suspension making the quality and appearance of juice low standard. iii) Due to alternate bearing habit, duration of crop being very short, it offers a short crushing season to the processors. No investor in Pakistan likes to have a \$ 10-15 million investment that can be used only for 3.0-3.5 months per year and has to compete with plants in Brazil and Florida which continue for 6-7 months during the year. This is only because most citrus producing countries of the world have different good varieties of oranges with different time of ripening. It becomes the main cause of their successful juice industry.

**Table 1: World fresh citrus export (2002)**

<b>Commodity</b>	<b>Quantity (million tonnes)</b>
Oranges	5.3
Mandarins	1.6
Limes and Lemons	1.1
Grapefruit	1.0

Therefore, it may be suggested that we should manage to switch over to orange production rather than emphasizing our research and

investment on mandarins. This way it may be expected that our citrus industry may play a better role in earning more foreign exchange and feeding the industries for the uplift of economy of Pakistan.

Geographically, we are located at a convenient distance from selling points in Middle East, Europe and Far East. Saudi Arabia alone, imports more than 10 thousand tonnes of frozen concentrate of orange juice and about 300 thousand tonnes of fresh citrus fruits. Europe and Japan are the biggest consumers of concentrated orange juices. Brazil, being the leading producer and exporter of concentrated orange juice has built “container farms” in these markets. If Pakistan wants to capture its export share of fresh as well as of concentrate juice of citrus in such international markets, it will have to think about increasing the area and production of sweet oranges and, of course, processing and export as well.

The future of citriculture in Pakistan is bright. The challenge is to capture our share of the world orange trade, enough to put ourselves in the top ten. There is a need to plan for long term to introduce sweet orange cultivars in our citrus industry and develop effective package of production technology.

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