

Kinow: The popular orange from Pakistan

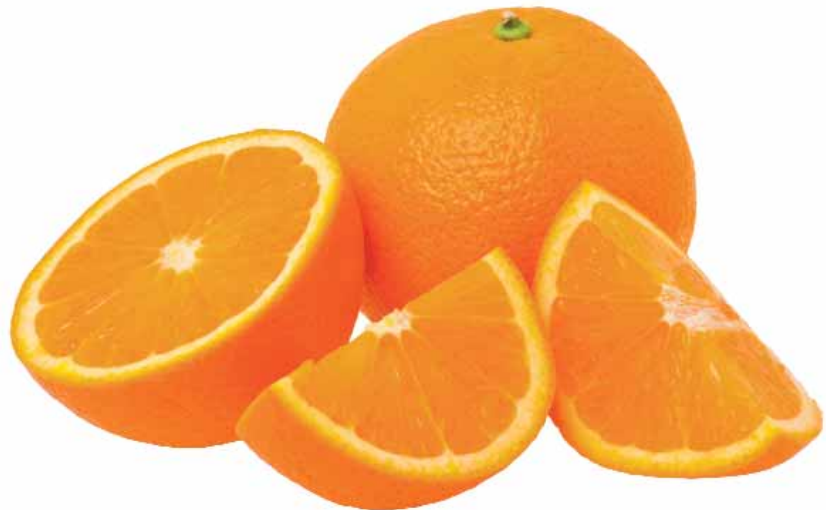
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Orange trees are the most cultivated fruit trees in the world. Oranges are popular because of their natural sweetness, wide variety of types and diversity of uses – from juices and marmalades to face masks and candied orange slices.

An orange has over 170 different phytochemicals and more than 60 flavonoids, many of which have been shown to have anti-inflammatory properties and strong antioxidant effects. The exact location of origin of citrus fruits is not clearly identified, although most researchers place it in South-East Asia, at least 4000 years BC. There are actually different legends about the origin of citrus. The spread of citrus fruits from Asia to Europe was slow. First, citrus fruits were taken to North Africa and then, probably by the fall of the Roman Empire, they entered the South of Europe, where they flourished in the middle Ages. Citrus fruits were brought to America by the Spaniards (Columbus took seeds of citrus fruits with him in his second trip) and the Portuguese in their exploration trips to the New World, around year 1500. It is believed that the word "Orange" originates from Sanskrit.

Orange in Pakistan (Mostly Termed as Kinow) is a variety of Mandarin (citrus fruit) often grown in Punjab Pakistan and to a lesser extent in north Indian states, mainly Punjab and Rajasthan. The Kinow was developed by H.B. Frost at the University of California at Riverside in 1935, by cross-pollinating the King Tangor and the Willow Leafor Mediterranean Mandarin. Courtesy of the parent stock, another name of this hybrid Citrus is Wilking.

Harvesting In Pakistan: Pakistan is blessed with a climate ideally suited to the farming of all kinds of fruits - rich in taste and juicy. Farmers have been developing new varieties of fruit by grafting one exotic variety with other. Sunny winters in Pakistan yield a large variety of citrus fruits. Season of



Kinow in Pakistan starts from December and last till April. It has a soft skin which is easy to peel and has a lovely fragrance. Kinow is very delicious in taste and if treated with proper fungicide and wax and careful handling and storage of Kinow at about 4 Degree Centigrade can retain its freshness until 2 months. Following are the main varieties of Orange cultivated in the country: Succri; Mausami; Washington Navel; Jaffa; Red Blood; Ruby Red and Valencia Late

Post-Harvest Issues: According to the report of Pakistan National Commission on Agriculture, defects and inadequate facilities in postharvest handling transport storage and marketing cause up to 20-40 percent loss of fruit and vegetables. Following are the prominent causes of Pre & Post-Harvest loss of Kinow in Pakistan.

- ❖ Poor Farm Management
- ❖ Improper harvesting
- ❖ Absence of anti-fungal treatment
- ❖ Delays in the lifting of harvested crop
- ❖ Poor non-refrigerated transportation
- ❖ Below standard Fruit markets (Sabzi-mandies)
- ❖ Absence of proper cold storage facility
- ❖ Inadequate Packing

Area under cultivation of Orange & Kinow and production per annum both have

increased side by side however, there is no noticeable increase in yield per acre Percentage share of exportable quality in total picked fruit also remained low. At the same time post-harvest losses are very high. Major factors responsible for this state are inappropriate planning strategies during planting, poor sanitation, poor farm management and lack of proper infrastructure for post-harvest handling.

In addition to the lack of technical know-how at growers' level specialized extension supports on Orange & Kinow cultivation are virtually not available. Research output is still in its infancy and the little work done by agricultural development institutions like, Agriculture University (Faisalabad), Agriculture Research Institution (Tando-Jam) so far, is extremely inadequate. Surveys have shown that our scientists have made no noticeable improvements in the genetic engineering and in so many years have not been able to produce better varieties or have not managed any organized plan to train growers in the field of better farm management. Above all there is a lack of any coordination and sharing among different departments and organizations working with the same objectives of horticulture develop-

ment. In addition there is a strong need to provide basic infrastructure like refrigerated transport, cold storage, processing, commercial scientific packing, and international marketing. Sunny winters in Pakistan yield a large variety of citrus fruits.

Orange Distribution & Marketing

Channel In Pakistan: Current Status Harvested Orange is currently being marketed and consumed through the following three different Channels: (a) Wholesale (Sabzi-mandi) markets. Wholesales markets of fruits and vegetables are commonly known as 'Sabzi-mandies', and these markets exist in almost every major city. Seasonal crops are brought mostly by 16 middlemen (Theka-i-Dar), and in some cases by grower himself in trucks or trolleys to the place of auction, 'Aarat', specified in these markets. Here the commodity is auctioned and the price is mostly based on the principle of supply and demand. 'Arti' (Person who do auction) and 'pandi' (Loader) takes their percentage share from the total auctioned price. (b) Juice manufacturing factories. Juice processing plants consume approximately 10% per season of the total available crop of Orange & Kinow.

Waxing and Processing of Orange & Kinow are done to maintain its freshness and to enhance its shelf life. According to an estimate shelf life is enhanced to 90 days provided 5-10 degree centigrade is maintained. At present fresh Orange & Kinow are being processed at both local and imported processing units These are concentrated mostly in Sargodha (Bhalwal).

Storage life: The storage life of Kinow varies from 60 days, late harvest, to 90 days, early harvest, if placed inside cold storage at

5 degree Celsius with plus minus variation of 2 degree Celsius, and relative humidity 85 to 90 percent.

Exports of Kinows from Pakistan

The key markets for Pakistani Kinow are Afghanistan, Russia, UAE, Saudi Arabia, Ukraine, Philippines, and Sri Lanka. Russia accounts for 41% of total Kinow exports from Pakistan. In fact, the Russian ban on fruit and vegetable imports from western countries is proving lucrative for Pakistan.

Pakistan has exported 0.24 million tons – 80% of the 0.3-million-ton export targetkinows this year – since December 2014, the month when shipments formally started.

The cheaper price of the fruit was another reason for enhanced exports to Moscow this year.

According to Waheed Ahmed, Chairman All Pakistan Fruit and Vegetable Exporters, Importers and Merchant Association (PFVA) Research and Development, Pakistan was likely to meet the export target of 0.3 million tons and earn \$200 million during the season. According to Waheed, the horticulture sector is flourishing with the passage of time and by introducing research and development and new varieties of citrus fruits, the country may easily export oranges worth \$1 billion.

For that purpose, the PFVA has signed a memorandum of understanding (MoU) with the internationally renowned research institute CABI and Pakistan's Agricultural Research Council. Besides, the association is coordinating with various universities and research institutions to improve the quality of fruits and vegetables in the country. ♦

Exports of Kinnows from Pakistan				
Countries	2013-14		2012-13	
	Qty M T	Value US\$	Qty M T	Value US\$
Afghanistan	143,444	57,370,210	195,729	75,362,630
Russian Federation	70,136	39,842,210	77,874	36,027,150
UAE	49,600	16,905,690	30,451	7,556,520
Saudi Arabia	14,764	5,011,110	15,462	4,231,030
Ukraine	13,644	7,609,550	22,494	10,543,890
Qatar	1,549	624,510	1,269	332,600
Sri Lanka	7,201	2,379,380	6,913	1,693,300
Philippines	8,436	3,765,730	6,565	2,317,620
Iraq	5,494	1,059,680	8,303	635,710
Oman	5,361	1,711,040	3,195	758,800
Kuwait	5,267	1,968,340	5,282	1,301,220
Total	342,391	145,633,160	416,183	153,348,580