

Citrus Fruit (Kino): Punjab produced 98% of production

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Agriculture sector is a vital component of Pakistan's economy as it provides the raw materials to down the line industries and helps in poverty alleviation. This sector contributed 19.8% in GDP and it remains by far the largest employer absorbing 42.3% of the country's total labour force.

The citrus fruit ranks at the top in production and trade among all fruits produced the world over. It is highly prized and remunerative fruit, cultivated almost all over the world. Brazil is the biggest citrus fruit production country in the world. World most of the oranges production is in Brazil and citrus is rich in orange.

Production

Citrus fruit (mandarins, Clementine & oranges) is the most important tree fruit crop in the world. It is consumed direct as a fruit as well as juice (fresh & concentrates). Citrus fruits include oranges, mandarins (Kino), grapefruit and lemons, of which mandarins (Kino) is of significance to Pakistan. Kino is a cross between 'King' 'Willow leaf' species of Citrus Fruit, successfully experimented at the Citrus Research Centre, University of California, USA in 1951. Both of these parents have Indo-China origins. The soil and climatic conditions in Pakistan have given 'Kino' a unique flavor which distinguishes it from other comparable cultivars (mandarins) grown in the World.

Currently, in Pakistan citrus fruits are grown on an area of 206,569 hectares with



production of 2.36 million tons in 2015-16. Citrus is divided into different groups Sweet oranges, Mandarin, Grape fruit, Lemon and Lime which are being grown commercially. Citrus fruit is grown in all four provinces of Pakistan but Punjab produces over 98% of the crop because of its greater population, favorable growing conditions and adequate water.

More than 98% of citrus fruit is produced in Punjab and 70% of it is under kino. In fact kino has monopolised the citrus farming in the country.

Major citrus growing areas in Pakistan:

Pakistan has several varieties of citrus fruit, in addition to the popularity known as Kino all of which may interest importers in Asia and Europe. Kino is rightly called the king of all the varieties of easy peelers and excels the best varieties of the world. Pakistan is the 12th largest producer of citrus and the largest producer of Kino in the

world. Its juice content 44% to 47.5% which is the highest for all easy peelers varieties. The sugar content is 12 – 13% and each 100ml of kino contains 20-25 mg of vitamins-C.

Pakistan produced Kino 80% more than other Citrus fruit and application of modern techniques at all stages of growth and during the post-harvest phase could not only add value to the fruit to attract premium price but also increase export volume to fetch much needed foreign exchange to the country.

Citrus cultivars are grown in varying quantities in countries with tropical or sub-tropical climate. Citrus stands first in area and production among the world's tree fruits. In Pakistan also, citrus fruits are the most important fruit crops grown on the area of 206,569 hectares with production of 2.5 million tonnes. Citrus fruit is grown in all four provinces of Pakistan but Punjab produces over 98% of the crop because of its greater

Production of Citrus Fruits					
Year	Punjab	Sindh	KPK	Baluchistan	Total
2010-11	1,912,039	30,900	32,295	6,957	1,982,191
2011-12	2,076,831	30,943	32,587	6,979	2,147,340
2012-13	1,930,082	31,394	33,289	6,920	2,001,685
2013-14	2,097,734	30,883	31,631	7,471	2,167,719
2014-15	2,328,090	29,688	30,871	6,921	2,395,570
2015-16	2,315,895	3,125	31,259	7,350	2,357,629

Source: Fruit, Vegetables and Commodities of Pakistan.

Area under Citrus Fruits					
Year	Punjab	Sindh	KPK	Baluchistan	Total
2010-11	184,227	4,908	2,823	1,376	193,334
2011-12	183,568	4,917	2,940	1,421	192,846
2012-13	183,296	5,140	1,970	1,395	191,801
2013-14	183,216	5,100	2,989	1,396	192,701
2014-15	182,558	4,930	3,147	1,504	192,139
2015-16	183,210	4,980	3,198	15,181	206,569

Source: Fruit, Vegetables and Commodities of Pakistan.

population, favorable growing conditions and adequate water. Citrus is divided into different groups Sweet oranges, Mandarine, Grape fruit, Lemon and Lime which are being grown commercially.

Area under different varieties indicates that about 86% of the citrus is covered by Kino variety followed by the Musambi (10%), Feutral (4%) Blood Red (1%). The harvesting season lasts for 4 months, starting from mid-December to mid of April. However, according to a rough estimate of industry, approximately 20% - 40% of the produce is wasted during pre & post- harvest stages. Mismanagement of diseases, unfavorable weather, delay in harvesting, absence of proper roads and cold storage facilities, glut formation in the market and other similar factors are responsible for this loss.

Improving the yield of citrus in terms of quantity as well as quality, with the ever-limiting resource of cultivated land, is very important to meet the needs of the increasing population as well as export.

In the mainstream market segment, the Pakistani Kino has to compete with seedless mandarin and clementine from Spain, Morocco, Argentina and South Africa. Though smaller in average size and harder to peel, mandarins from competitors are claiming a larger market share because of being seedless. In the European market, Pakistani citrus has an insignificant 0.09% share. As a table fruit, Pakistani Kino's availability in the European market is irregular. Kino is mainly used as a raw material for juice by a few big companies in Europe, but it is not consistently imported as a table fruit.

The country is exporting only 10% of its total Kino production which can be increased thrice the existing export volume provided farmers adopt scientific methods from growth to post harvest stages.

The export figures for these fruits are increasing every year with leaps and bounds.

Export of Kino Fresh and Oranges			
Value: US\$ 000			
Country	Kino Fresh	Oranges	Total
2013-14	152,257	1,026	153,283
2014-15	171,827	130	171,957
2015-16	170,581	486	171,067
Source: Trade Development Authority of Pakistan			

During the year 2015-16 Kino exported from Pakistan was 372,160 tonnes worth Rs.17.78 billion (US \$70.58 million). Major international markets for Pakistani Kino's during 2015-16 were Afghanistan, Azerbaijan, Indonesia, Mauritius, Oman and Philippines).

In the ethnic segment, Kino supplies are intermittent. As the Kino has to be marine-shipped in container-loads, importers usually take chances with only one or two shipments during the entire season. They are risk-averse and hesitate to place consecutive orders with a gap of 1-2 weeks before evaluating the response to their first container shipment.

As Food safety is the prime concern in the European market. Food products must comply with stringent sanitary and phytosanitary (SPS) requirements. The European consumer is quite demanding regarding the taste, quality and presentation of food products. The consistency of fruits in terms of size, shape, weight, colour and level of ripeness are important parameters for consumers in making their buying decisions.

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water. Citrus is divided into different groups Sweet oranges, Mandarine, Grape fruit, Lemon and Lime which are being grown commercially. Major Kino (Citrus) growing areas in Pakistan are as under:

PUNJAB: Districts of Sargodha, Jhang, Sahiwal, Lahore, Multan,

Gujranwala, Sialkot, Mianwali
SINDH: Districts of Sukkur, Nawabshah, Khairpur
KHYBER PAKHTUNKHWA: Peshawar, Mardan, Swat, Hazzara, Nowshera, Swabi
BALUCHISTAN: Sibbi, Makran, Kech.

Citrus are the fruits belonging to the Rutaceae family and mostly from the genus Citrus which are usually mix of sweet and acidic fruits. They are widely cultivated fruits in the world with areas under cultivation and production increasing greatly from 2010-2016.

There is a huge demand from both the fresh and processed oranges by the consumer. Food exports are also linked with food tastes, which are deeply cultural in nature. The export of food 'taste' has to precede the export of the food 'product' itself. Pakistani food products sold abroad are mainly consumed by South Asian communities, and the volume of these exports to a country is directly proportional to the size of the ethnic community there.

For entry into the mainstream segment of the EU market, 'taste development' has to be the fundamental element of the strategy to promote Kino.

Unless seedless Kino is available in commercial quantities, a 'pull marketing' strategy at the shelf-level is required to develop consumers' tastes to such a level that they are

Country-wise Exports of Kino (Fresh)				
Quantity: Tonnes				
Value: Rs. 000				
Country	2015-16		2014-15	
	Quantity	Value	Quantity	Value
Afghanistan	144,151	5,798,413	151,820	6,049,537
Azerbaijan	370	18,248	--	--
Indonesia	21,195	1,125,333	19,253	872,842
kuwait	5,695	251,426	9,049	341,640
Mauritius	1,179	66,546	1,134	58,012
Oman	4,715	208,989	6,264	199,997
Philippines	16,811	88,0945	12,292	52,029
Qatar	2,394	112,813	1,592	62,617
Russia	98,141	5,843,293	96,366	5,656,217
Saudi Arabia	11,437	504,171	9,278	321,727
Turkey	6,265	260,687	5,645	197,634
U.A.E	46,797	2,015,552	57,984	19,774
Banglades	1,796	81,813	1,912	66,589
All others	11,214	613,617	20,721	3,487,341
Total	372,160	17,781,846	393,310	17,385,956
Source: Trade Development Authority of Pakistan				

ready to accept seeds in a Kino that has a superior taste.

For taste development, an extensive campaign of tasting arrangements and free sampling at points of sale would be required. Such a campaign at a small scale is being organised by Pakistan's Trade Office in the Netherlands for the last four years, but it needs to be substantially broadened.

The disadvantage of seeds can also be offset by positioning Kino as a 'juicy mandarin,' instead of a 'table fruit' in the mainstream European market. Citrus press filters seeds at the squeezing stage and thus the consumer is spared the annoyance of spitting the pits at the consumption point.

Currently, orange varieties in the EU are already categorised into 'table oranges' and 'juicy oranges'. A similar distinction can be made between table mandarins and juicy mandarins.

In the ethnic market segment, the availability of Kino needs to be increased. Currently, supplies are intermittent, and a regular demand-supply pattern is not established. Pakistan's Trade Offices in European countries can help overcome this problem by coordinating with importers to stagger their shipments during the entire season.

The process after going through various developments and modifications ultimately culminated in producing a seedless mandarin type. These seedless mandarin varieties are being multiplied for further distribution among the farmers and expressed the hope that production would start from 2011. The production of seedless 'kino' varieties, the country's exports would be multiplied and it



would attract the European markets. Once the seedless variety starts bringing fruits, it will help generate precious and much needed foreign exchange for the country, as it will attract the attention of western markets where people otherwise don't prefer 'kinos' due to seeds.

At present, the 'kino' exports of the country are mainly consumed by Pakistani immigrants living abroad and the seedless variety would make it famous among the locals there also. 'Kino' is a major export item among citrus types; however, its export share in the world market is as low.

Fruit Plant Certification

- i. FSC&RD has registered six (6) new fruit plant nurseries (Gilgit, Chakwal, Abbottabad, Haripur to promote production and dissemination of disease free and true-to-type nursery fruit plants.
- ii. Registration cases of two fruit plant nurseries are in progress.
- iii. The number of fruit plants certified in the above mentioned tenure is 12,400.
- iv. Arrangements are under way to carry out sampling and virus indexing of the fruit plan Germplasm Units (GPUs).
- v. Minimum Fruit Plant Certification Standards for citrus, mango and guava are drafted and submitted to National Seed Council for approval.
- vi. Minimum Fruit Plant Certification Standards for grapes, olive and palm are being drafted.

The citrus production in future must make more efficient use of limited area of good land provision, for more rapid recovery of investment capital, in order to provide maximum average net return. The tree spacing has become an increasingly important consideration in citrus rootstock management also because of the benefits of higher tree density on early production and financial returns.

The grower can get earlier return on investment; better spray coverage at less cost, easy harvesting and return to fulfill production sooner after tree damage or removal by high-density plantation.

References

- 1. Pakistan Bureau of Statistics.
- 2. Trade Development Authority of Pakistan
- 3. Ministry of Commerce, Government of Pakistan.
- 4. Fruit, Vegetables and Commodities of Pakistan. ♦

Top 10 Largest Citrus Producing Countries in the World

Rank	Country	Production (Tonnes)
1	Brazil	20,682,736
2	China	19,617,527
3	U.S.A	10,017,652
4	Mexico	6,851,407
5	India	6,286,257
6	Spain	5,703,453
7	Iran	3,739,056
8	Italy	3,579,263
9	Nigeria	3,325,958
10	Turkey	3,102,485

Source: Trade Development Authority of Pakistan

Country-wise Exports of Oranges
Quantity: Tonnes
Value: Rs. 000

Country	2015-16		2014-15	
	Quantity	Value	Quantity	Value
Afghanistan	337	17,712	208	9,812
Bahrain	198	8,323	--	--
Ukraine	157	7,517	104	3,386
U.A.E	79	4,494	--	--
Russia	47	2,198	--	--
Saudi Arabia	47	2,198	--	--
Sri Lanka	95	3,755	--	--
All others	37	2,350	--	--
Total	997	48,547	312	13,198

Source: Trade Development Authority of Pakistan