

Growth, Import and Export strength of J&K Apple in India

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ABSTRACT

Apple is the most important fruit in J&K. As per the horticulture census 1999-2000, about 55% of the area is covered under apple in J&K. The area and production of apple in J&K has increased from 86651 hectares and 729022 metric tons in 1999-00 to 162971 hectares and 1726834 metric tons in 2016-17 respectively, which is an increase of 88.07% in Area and 136.87 % increase in Production over this period.

The Apple import has grown rapidly since the removal of quantitative restrictions in 1999. The imports and the exports of apples were almost equal during 1999-2005, but after that imports have taken over exports and have increased twice than the exports till 2008-2010. After that the imports have increased with a huge proportion, whereas the exports have continuously slipped down from 47493 MT in 2010 to 7278 MT in 2017. The worried thing is that imports have increased 33.95% in 2017 whereas exports dropped down to – 42.51% in 2017. The research revealed that there exist a significant relationship between the production and import of apple and between the production and export of apple.

Keywords: *Apple, horticulture, Production, import, export*

Introduction

Apple is the most important fruit in J&K. The cultivation of apple is done in all districts of Kashmir valley. Major contributors to the apple production are Baramulla, Shopian, Pulwama, Bandipora, Budgam, Anantnag, Kulgam etc. As per the horticulture census 1999-2000, about 55% of the area is covered under apple. It is also important in terms of production and provides the maximum marketable surplus. The area and production of apple in state has increased from 86651 hectares and 729022 metric tons in 1999-00 to 162971 hectares and 1726834 metric tons in 2016-17 respectively, which is an increase of 88.07% in Area and 136.87 % increase in Production over this period.

Almost all apples produced in Jammu and Kashmir are sold in India, Bangladesh and Nepal, used for fresh consumption, with only small quantities used for processing into products such as apple juice, jelly, or jam. Although there are a few government agencies and cooperatives, such as the Jammu and Kashmir Horticulture Produce, Marketing and Processing Corporation (JKHPMC), but this account for only small shares of the market. While India's apples and other fruit are marketed almost entirely by the private sector, so far, there has been little private investment in improving the quality of domestic apples to compete with imports. India, accounting for less than 5percent of total consumer food purchases involved in Apple marketing, most apples are sold through private marketing channels comprised of a large number of small-scale brokers and merchants. Information collected during field research suggests that India's apple marketing system entails significant marketing costs and, particularly, significant marketing margins for both domestic and imported apples.

Review of Literature

Zulfiqar Murtaza (2015), according to him there are factors which have clouded the performance of horticulture sector. The factors like global warming, use of more fertilizers and less manure, supererogatory use of pesticides and inefficient supply chain have contributed to defile the horticulture sector. The results have been shown empirically using Chi square analysis. The need of the hour is to use high quality fertilizers equivalent of manure (bio-fertilizers) or manure itself so that the soil nutrients will not be lost and quality of fruit remains same. The use of surplus pesticides also has resulted in deteriorating the quality of horticulture output.

Rather Tajamul Islam (2015-16), "According to area under Fruits in J&K State has increased from 85508 hectares in 1975-76 to 205543 hectares in 1995-96 and the production has increased from 375068 MTs in 1975-76 to 968640 MTs in 1995- 96, which further increased to 283084 hectares (area) and 1504011 (production) MTs in 2006-07. During 2015-16 the area under fruits in J&K was 337677 hectares and

production was 2493999 MTs, recording an increase of 64.28 % in area and 157.47 % in production during the last two decades”.

Malik (2013), According to him the improvement in the production is quite important but marketing has also an equal importance to develop a commercial crop, which is purely produced to sell in the market. But marketing has not received proper attention, also ignorance from government side, lack of infrastructure, research and development leads to negative effects. Study high lights the dimensions of supply chain management of apples in the Kashmir Valley.

Objectives

1. To analyse the Growth of Apple in Jammu and Kashmir
2. To analyse the Import and export of apple.

Hypothesis:

H₀: There is no significant relationship between production and export of Apple

H₀: There is no significant relationship between production and import of Apple

Research methodology

This Research is based on Descriptive and analytical research methodology. The study is based on secondary data and the data has been collected from the Horticulture Departments and websites related to the Horticulture.

Research Findings

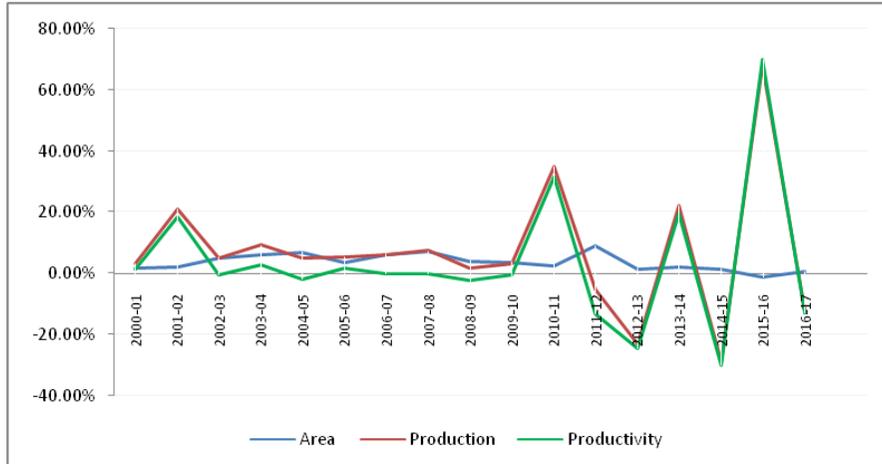
Table-1 shows the statistics regarding area, production and productivity of apples from the year 1999-2000 to the year 2016-17. In the year 1999-00, the area, production and productivity of apples in J&K was 86651 ha, 729022 M.T and 8.41 /ha respectively and In the year 2016-17 it was 127795 ha, 1311845 M.T and 10.60/ ha respectively. It can be observed that growth rate of area under apple was highest 9.18% in 2011-12 and the growth rate of production was highest 68.03% in 2015-16. Area under apple turned negative -1.02% in 2015-16 whereas production turned negative three times in 2011-12, 2012-13 and in 2014-15. From table-1, it can be observed that productivity of apple was highest as 13.07 per hectare in 2010-11. The growth rate of area under apple from 1999-00 to 2016-17 has increased up to 88.07%, production 136.87% and the productivity is 26.04%.

Table: 1) Area and Production of Apple from 1999-2000 to 2016-2017 in J&K

Year	Area (in Ha)	Change in Area	Growth %	Production	Change in Production	Growth %	'Area in Ha' 'Production in MT'	
							Productivity	Growth %
1999-00	86651	---	---	729022	---	---	8.41	---
2000-01	88149	1498	1.73%	751310	22288	3.06%	8.52	1.31%
2001-02	90080	1931	2.19%	909583	158273	21.07%	10.10	18.54%
2002-03	94874	4794	5.32%	953946	44363	4.88%	10.05	-0.50%
2003-04	100702	5828	6.14%	1041538	87592	9.18%	10.34	2.89%
2004-05	107925	7223	7.17%	1093275	51737	4.97%	10.13	-2.03%
2005-06	111881	3956	3.67%	1151712	58437	5.35%	10.29	1.58%
2006-07	119041	7160	6.40%	1222176	70464	6.12%	10.27	-0.19%
2007-08	127795	8754	7.35%	1311845	89669	7.34%	10.27	0.00%
2008-09	133102	5307	4.15%	1332812	20967	1.60%	10.01	-2.53%
2009-10	138191	5089	3.82%	1372973	40161	3.01%	9.94	-0.70%
2010-11	141717	3526	2.55%	1852412	479439	34.92%	13.07	31.49%
2011-12	154720	13003	9.18%	1756192	-96220	-5.19%	11.35	-13.16%
2012-13	157280	2560	1.65%	1348149	-408043	-23.23%	8.57	-24.49%
2013-14	160865	3585	2.28%	1647687	299538	22.22%	10.24	19.49%
2014-15	163432	2567	1.60%	1170306	-477381	-28.97%	7.16	-30.08%
2015-16	161773	-1659	-1.02%	1966417	796111	68.03%	12.16	69.83%

Source: Directorate of Horticulture Kashmir

Graph - 1 Trends in the Growth rate of Area, Production & Productivity of Apple



Import and Export of Apples

In the 1990's, the Indian economy entered a state of transition when the reform of highly protectionist domestic and trade policies led to more rapid growth in incomes and foreign trade. India eliminated quantitative import restrictions on apples in April 1999, when imports of apples and other fruit were opened to private trading under Open General License (OGL). Imports, which are sold at significantly higher prices than domestic apples, are rising at a fast pace, but remain small compared with domestic production. The United States and other major suppliers, primarily Australia, China, and New Zealand, are competing for shares of the market. Trade patterns are being affected by import prices, tariffs, and seasonal factors, while non-tariff policies— particularly Phytosanitary measures—are potential future factors

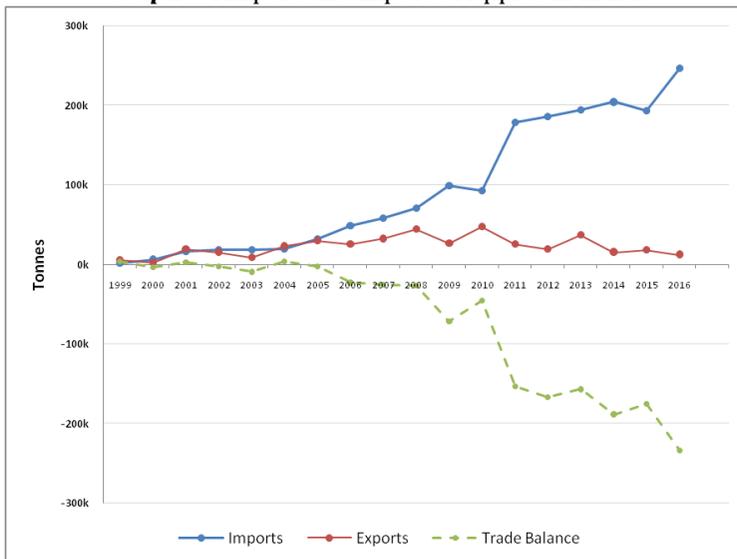
Table 3) Production, Import and export of Apple in India

Year	Import	% age change	Export	% age change	Total Trade	Trade Balance
1999	1953	-	5477	-	7430	+ 3524
2000	6586	237.22%	2847	- 48.02%	9433	- 3739
2001	17028	158.55%	19296	577.77%	36324	+ 2268
2002	18197	6.87%	15632	-18.99%	33829	- 2565
2003	18578	2.09%	9032	-42.22%	27610	- 9546
2004	19894	7.08%	23210	156.98%	43104	+ 3316
2005	32368	62.70%	30044	29.44%	62412	- 2324
2006	48982	51.33%	25971	-13.56%	74953	- 23011
2007	58401	19.23%	32655	25.74%	91056	- 25746
2008	71204	21.92%	44552	36.43%	115756	- 26652
2009	98895	38.89%	26739	-39.98%	125634	- 72156
2010	93264	-5.69%	47493	77.62%	140757	- 45771
2011	179015	91.94%	25749	-45.78%	204764	- 153266
2012	186368	4.11%	19477	-24.36%	205845	- 166891
2013	194335	4.27%	37165	90.81%	231500	- 157170

2014	204570	5.27%	15797	-57.49%	220367	- 188773
2015	193692	-5.32%	18321	15.98%	212013	- 175371
2016	246808	27.42%	12660	-30.90%	259468	- 234148
Total		12537.38%		131.15%		

Source: Food & Agriculture Organisation of the United Nations

Graph - 4 Import and Export of Apples in India.



The Apple import has grown rapidly since the removal of quantitative restrictions in 1999. The import rose steadily during 1999-2004 (calendar years)—after 2004 the import continuously increased till 2009, slightly declined in 2010 and thereafter the import showed a huge increase till 2014 —then little bit slipped down in 2015, but gained the momentum again in 2016 onwards.

From the Graph 4, it can be seen that the imports and the exports of apples were almost equal during 1999-2005, but after that imports have taken over exports and have increased twice than the exports till 2008-2010. After that the imports have increased with a huge proportion, whereas the exports have continuously slipped down from 47493 MT in 2010 to 7278 MT in 2017.

The worried thing is that imports have increased 33.95% in 2017 whereas exports dropped down to - 42.51% in 2017.

Table 4) - Country-wise import of Apples by India

Country Name	2015		2016		2017	
	Quantity	Value	Quantity	Value	Quantity	Value
	Quantity (in Tons)		Value (in US Dollar Thousand)			
Australia	0	0	62	60	59	48
Argentina	296	292	21	20	148	161
Brazil	699	708	380	330	804	752
Chile	19951	22207	31409	32866	23954	24551
China	27459	29794	125134	103892	147852	121372
France	1468	1652	853	815	3018	3002
Iran	3145	2552	2801	2079	3079	2341
Italy	11002	11769	11506	12314	21196	21437
New Zealand	14631	18983	12163	15549	9964	11972
Turkey	72	70	1568	1183	5143	4359
USA	27459	113976	45460	55518	92574	96452
Others	87510	7941	15451	13174	22814	20052
TOTAL	193692	209944	246808	237800	330605	306499

Source: Trade Map (Trade statistics for international business development), DGCI&S

Table 5) Country-wise Export of Apples by India

Country Name	Quantity (in Tons) Value (in US Dollar Thousand)					
	2015		2016		2017	
	Quantity	Value	Quantity	Value	Quantity	Value
Bangladesh	14421	5029	9497	3732	2524	1322
Nepal	3843	1697	2842	1404	4747	2380
Other	57	51	321	258	7	10
TOTAL	18321	6777	12660	5394	7278	3712

Source: Trade Map (Trade statistics for international business development), DGCI&S

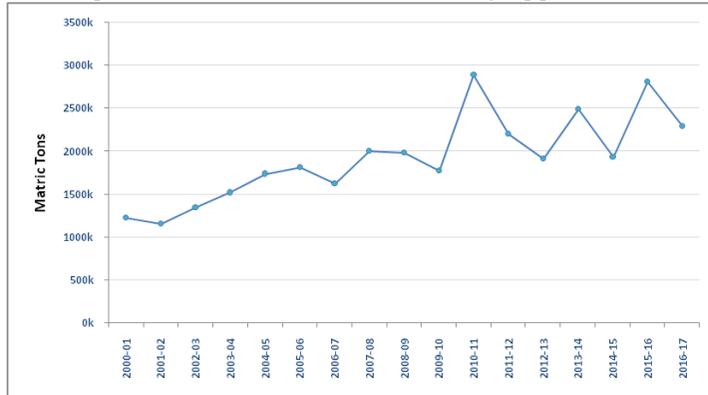
U.S apples imported by India are primarily Washington Red Delicious, with relatively small amounts of Golden Delicious and other varieties. Apples from Australia and New Zealand are mostly Gala or Red Delicious varieties. Chinese apples are primarily of the Fuji variety. China is the largest source of the apples imported to India. The US, China, and Chile account for around 80% of the apples that come into the country. In terms of exports, Indian apples don't seem to be as popular in the West — almost the entire volume of apple exports from India goes to Bangladesh and Nepal.

Increase in Import and decrease in export may have the following reasons

- i) Decrease in supply or reduction in production of apples
- ii) Quality of imported apples is higher than domestic apples
- iii) Domestic Apples may not be available in all the seasons
- iv) Increase in the demand of high quality Apples

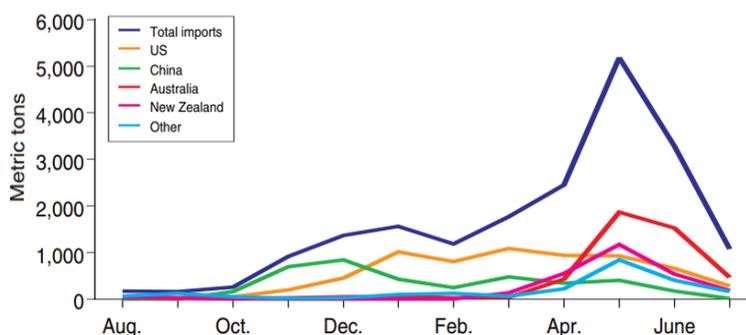
In graph 6.5, it can be seen that production was at peak during 2010-11 but after that it has declined very fast however, it has increased during 2013-14 and 2015-16 but has again declined during 2017-16. The growth rate of apple production is not stable due to the climatic changes and the damage of fruit caused by diseases like scab, mite, etc. Therefore reduction of apple production is one of the reasons for excess import and lesser export of Apples.

Graph - 5 Trend in the Production of Apple in India



Source: Department of Agriculture, Cooperation & Farmer's Welfare, Indian Horticulture Database

Graph 6) Monthly Indian Imports of Apples by supplier, 2002-04 average



Source: World Trade Atlas, Economic Research Service / USDA

From the graph 6.6 it can be observed that highest amount of apples are imported during the month of April – June, since apple harvesting in India starts from August to October and then supplied to markets in India till March in abundant quantity, as the domestic apples lack the use of advanced techniques for production and packing, therefore remains low in quality as compared to imported apples, therefore due to low quality, cannot be stored for a long time hence, there remains a huge shortage of apples during the period of April to June which leads to good demand for imported apples.

From the last decade, both population and per capita income of India has increased consistently, which lead to increase in the consumption of fruits and increase in consumption has increased the demand for fruits including the apples thus, excess demand increased the import volume of Apples as the relatively low quality of domestic Apples do don't attract the whole increase in demand due to its inferiority.

Testing Hypothesis:

Table 6) Correlation between production and Export of Apple to foreign countries

Correlations		Apple Production in J&K	Export of Apple to foreign Countries
Apple Production	Pearson correlation	1	.532*
	Sig. (2-tailed)		.023
	N	18	18
Export of Apple	Pearson correlation	.532*	1
	Sig. (2-tailed)	.023	
	N	18	18

*correlation is significant at the 0.05 level (2-tailed)

From table 6, it can be seen that Pearson correlation is 0.532* and correlation between Production and Export of Apple is significant at the 0.05 level (2-tailed), therefore Null hypothesis is rejected.

Table7 Correlation between production and Export of Apple to foreign countries

Correlations		Apple Production in J&K	Import of apple by India
Apple Production	Pearson correlation	1	.761**
	Sig. (2-tailed)		.000
	N	18	18
Import of Apple by India	Pearson correlation	.761**	1
	Sig. (2-tailed)	.000	
	N	18	18

**Correlation is significant at the 0.01 level (2-tailed).

From table 7, it can be seen that Pearson correlation is 0.761** and correlation between Production and import of Apple is significant at the 0.01 level (2-tailed), therefore Null hypothesis is rejected.

Conclusion:

Low prices for domestic apples, despite the presence of a 50-percent tariff and relatively high-priced imports in the market, are due to the large difference in quality between domestic and imported apples. Because of superior cold chain infrastructure, imported apples arrive in Indian retail outlets in fresh, crisp, and juicy condition throughout the marketing year. Equivalent quality domestic apples, in contrast, are generally available only during the August-November harvest season because they do not benefit from refrigerated storage and transport. In south India and other areas distant from producing regions, the availability of quality domestic apples is even more limited. Imported apples generally look better than domestic apples because of uniformity of size, colour, and shape, as well as very low levels of latent damage due to higher quality packing. Although a few Indian growers are now upgrading their practices, domestic apples are typically transported, handled, and stored in poor quality packaging with significantly higher levels of damage to the fruit. The distinct differences in price and quality between domestic and imported apples are evidence that domestic and imported apples are differentiated products traded in largely separate markets. Although it is reported that the presence of high-priced imported apples is now beginning to stimulate quality improvements by a few growers, there remains a large gap in terms of both quality and price. And, there is no evidence that purchases of high-priced imported apples by high-income consumers are weakening demand or prices for domestic apples.

An important finding of this study is that apple producers in India have not been adversely affected by imports because the relatively high quality and price of imported apples make them imperfect substitutes for domestic apples. Instead, the presence of imported apples demonstrates an opportunity for

domestic growers to increase earnings by improving quality to compete with imported apples. However the deduction in export is a matter a concern reduction in the export will have adverse impact on the producers. Reduction in export will imbalance the supply of apple as the supply increases it will definitely reduce the price of apple in India.

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