

Non-tariff Barriers of TPP Nations for Exports of Korea Strawberries

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INTRODUCTION

Beginning with the FTA with Chile in 2002, Korea has signed 14 FTAs with 53 countries as of May 2016, and its proportion of FTA trade volume is expected to be over half the total trade volume. Some expect a large increase in regional exports if the FTAs are actively utilized, but exports have not grown as much as expected. This is because Korea's FTA utilization ratio of agricultural products export is 22.8%, which is considered a very low level. That is, it shows that the FTAs, which the nation signed, have not been used efficiently in agricultural export. The reason for the low FTA utilization ratio in agricultural products export is that the institutional barriers of target countries which import fresh agricultural products from Korea are non-tariff barriers represented by the 'agreement on application of SPS (Sanitary and Phytosanitary) Measures' for animals and plants and the TBT (Technical Barrier to Trade)' as well as tariffs.

Korea experienced significantly reduced strawberry exports in the early 2000s. This results came from the burden of royalty payment in compliance with the Act on Protection of New Varieties of Plants from Japan, which is a major strawberry importer. This is one of exemplary export barriers due to non-tariff barriers. However, the reduction is slowly improving since mid- 2000s. While there is continuous fostering and propagating of Korean varieties and countries for exporting strawberries are diversified to include Asia's TPP nations, (for example, Japan, Malaysia, Singapore and Thailand¹), the volume of exports is significantly increasing at present.

Therefore, it is necessary to identify details and features of the barriers and cases for each crop type in the major agri-food sector including strawberries, and analyze the economic impact of importer's non-tariff barriers on strawberry exports of Korea. In addition, it is also necessary to select existing countries and emerging countries to examine the potential of expanding strawberry exports, and suggest a direction for identifying tasks of involved authorities for coping with each type and case of the non-tariff barriers, and specifying their roles.

¹ Thailand government formally declared its intention to participate in TPP on October 11, 2015

Korea's Strawberry Export Situation

Korea's exports to TPP nations have been increased and exported to the largest market, Singapore, showing an increase from US\$5.2 million in 2011 to US\$7.7 million. The largest increase in agricultural export was recorded in Malaysia, which has been the second largest export market for Korean strawberry since 2013. It surged from US\$1.6 million to US\$3.1 million during the same period. Export to Japan has decreased from US\$3.5 million in 2011 to US\$2.2 million in 2015. Other major markets such as Vietnam and Taiwan have also increased significantly.

Table 1. Situation of Korea's strawberry export by TPP nations

Unit: US\$, Kg

Classification		2011	2012	2013	2014	2015
Singapore	\$	5,212,626	6,992,824	9,267,272	11,075,802	7,750,491
	Kg	647,627	754,601	955,447	1,121,352	845,448
	\$/Kg	8.05	9.27	9.70	9.88	9.17
Malaysia	\$	1,645,487	2,046,412	3,226,316	3,629,911	3,119,189
	Kg	206,546	226,568	362,175	400,870	368,066
	\$/Kg	7.97	9.03	8.91	9.06	8.47
Thailand	\$	1,209,569	1,555,866	2,573,845	2,701,602	4,402
	Kg	126,965	138,155	240,863	229,285	431
	\$/Kg	9.53	11.26	10.69	11.78	10.21
Japan	\$	3,534,388	2,730,574	1,145,404	912,428	2,230,631
	Kg	191,739	157,848	78,758	63,590	235,860
	\$/Kg	18.43	17.30	14.54	14.35	9.46

Source: UN Comtrade (www.uncomtrade.org)

Competitiveness of Korea in strawberry export

This study analyzed the export competitiveness of Korea with its major rivals in the country markets which import Korean fresh strawberries including TPP nations such as Singapore, Malaysia, and Thailand. The net export ratio of Korean fresh strawberries is 1.0, (no strawberry import) and Korea is a specialized export country in the international market.

Comparative advantage across the international trade can be measured by various indices using import, export and trade statistics. Export competitiveness or international competitiveness of certain nations or specific commodity can be calculated by various methods such as Revealed Comparative Advantage Index (RCA), and Comparative Advantage by Country (CAC) and so on. (See appendix)

RCA and CAC indices are evaluated as close to the concept of comparative advantage as

reflecting price and quality competitiveness which are relatively easy to measure. Therefore the study uses RCA and CAC index to analyze international competitiveness by TPP nations in strawberry trade.

The Revealed Competitive Advantage (RCA) is 2.57, implying a competitive advantage. For the Comparative Advantage by Country for Singapore, Thailand and Malaysia, Korea has an outstandingly comparative advantage to its rivals including the US and Australia.

Table 2. RCA measurement results by TPP nations

Year	2000	2005	2010	2011	2012
Korea	2.28	0.31	3.80	2.49	2.57
Australia	0.20	0.22	0.09	0.09	0.08
China	0.00	0.01	0.01	0.02	0.03
Japan	0.01	0.14	0.38	0.42	0.40
U.S.	1.59	1.87	2.47	2.35	2.33
New Zealand	0.61	0.14	0.11	0.00	0.11

Table 3. CAC measurement results by TPP nations

Target Market	Export country	2000	2010	2011	2012	2013	2014
Singapore Market	Korea	0.00	52.58	63.73	50.41	38.36	36.75
	U.S.	5.51	6.62	7.37	6.95	5.68	5.41
	Australia	2.43	1.19	0.93	1.02	1.87	1.57
	New Zealand	4.90	0.98	1.22	1.27	1.07	1.19
	Egypt	113.98	48.22	32.68	45.67	29.80	15.48
	Japan	0.15	0.72	0.73	0.64	0.66	1.61
Thailand Market	Korea	0.00	18.52	27.32	17.84	26.49	23.14
	U.S.	0.00	2.49	3.00	2.47	2.27	2.46
	Australia	5.31	4.08	2.72	2.93	2.59	3.67
	New Zealand	0.00	3.92	3.81	5.75	5.60	4.89
	China	5.85	0.00	0.00	0.00	0.00	0.07
	Japan	0.00	2.57	2.91	2.32	2.83	3.02
Malaysia Market	Korea	0.00	110.67	107.70	90.09	119.22	97.36
	U.S.	6.24	6.84	5.56	6.49	4.48	3.78
	Australia	0.00	47.95	37.89	106.88	64.36	47.51
	Egypt	0.00	3.92	3.81	5.75	5.60	4.89
	New Zealand	3.41	0.66	1.14	1.29	1.64	1.52
	Japan	0.48	0.39	0.05	0.02	0.10	0.74

Concept of non-tariff barriers and current non-tariff barriers

The NTM (non-tariff measure) refers to other government measures other than tariffs which has potential economic effects of changing trade volumes or prices, or both in the international trade. Their scope is different depending on the type of NTM, for example, ‘import permit’, and the ‘procedure of customs clearance’. The scope is not fixed and depends on the authorities’ decision, and the importer’s trade policy is derived from independent policy of different administration offices and often has changes without prior notification from exporters. Therefore, although it is very hard to measure the trade-restrictive effect of non-tariff barriers comprehensively for individual items, adaptation thereto is very important.

Since 2010, 85 cases of damages by NTM which are related to agri-food of Korea have been reported including 40 cases of damages for fresh agricultural products and 45 cases of damages for processed food. The cases of non-tariff barriers include 33 quarantine cases and 25 custom clearance cases, which account for 70% of NTM.

Table 4. Cases of damage by NTM related to agri-food of Korea (2011-2014)

Classification	SPS	TBT	Institutions	Labeling	Others	Total
China	12	14	2	3	3	34
Japan	3	5	3		4	15
U.S.	5	2	2		1	10
Indonesia	1	1	2		2	6
Singapore	4		1			5
Vietnam	1		2			3
Brazil	1	1				2
Taiwan	1	1				2
India	2					2
Malaysia					1	1
New Zealand	1					1
Hong Kong			1			1
Iran	1					1
Mexico	1					1
Australia		1				1
Total	33	25	13	3	11	85

Source: UNCTAD

Market features of fresh strawberry importing countries

Importing countries such as Singapore, Thailand and Malaysia account for 80% of strawberry exports in Korea.

The study analyzed survey and market scale of each importing country, market features,

trend of fresh strawberry imports, local production and consumption patterns, distribution structure, customs clearance and quarantine/import management regulations, agricultural product import barriers, and strategies for expanding strawberry exports to each country.

1) Singapore

Because Singaporeans rely on imported agri-food for at least 90% of consumed agri-food, they are very sensitive to issues concerning food safety. Singapore is one of the five major trade partners of Korea which implemented FTAs with 21 countries including Korea, the US, Japan, the EU, the ASEAN, Australia, New Zealand, India and China. In Singapore, AVA (Agri-Food and Veterinary of Singapore) is in charge of managing exports and imports. The WHO/FAO quarantine conditions are applied to fresh strawberries. Labels shall include producers and product name, details of products, and date of export/packing. The agricultural market is divided into the expensive imported agricultural products market and the market for cheap products imported from China. People are increasingly interested in food safety and hygiene. Also, people increase demand for healthy food. Higher 22% of the people with at least 40,000 dollars of real income prefer expensive safe food. Although absence of import regulations and generous procedures allow exporters to enter the markets easily, competition is intense. Import vendors focus on import prices, and the fresh strawberry market has other providers from the US, Australia and New Zealand in addition to Korea. Korea maintains friendly trade relations with Singapore which seldom issues import restrictiveness measures. Korea takes preemptive measures by not allowing strawberry farmers to export fresh strawberries provided that chemical residues are detected from their fresh products.

2) Thailand

GDP per capita is about \$5,800. One person consumes vegetable 1/3 (50kg) the global average (136kg). Imported fresh strawberries amount to 1,000 tons worth of 5 million dollars which are further divided into US\$ 1.6 million, New Zealand, US\$ 1.1 million, Australia US\$1 million and Korea US\$ 0.9 million.

In Thailand, major fresh strawberry consumers belong to the middle- and high-income earners and foreigners. However, as people earn more, the demand for fresh strawberries is also growing. Major consumers are female consumers in their 20s, male and female consumers in their 30s.

Thailand levies at least 40% of its tariffs and 7% of its added value tax after tariffs on fruits and fresh agricultural products to protect Thai farmers. Some food shops asks shop-in-shop fees for each bar code for operating the shop-in-shop. This implies initial high costs of entering the Thai market. Korean exporters complain compulsory submission of English version of GAP (origin certificate), and customs clearance are delayed due to exported plant quarantine. Government-assisted strategy is thus required for exemption from quarantine and fast quarantine process.

3) Malaysia

Malaysia is a country where the Korea-ASEAN FTA Conventional Tariffs is applied. Korean fresh strawberries account for 33.8% of the market which is the greatest proportion, followed by the US (25.6%) and Australia (20.7%). The US was on the first place until 2008 in terms of market share. The strength of Korean strawberries is its high saccharinity, nice appearance and color. Its weakness however, includes is that the fruits easily turn soggy.

Malaysia does not have regulations specific to prohibition of imports and import permit regulations, but just to ensure the volume of essential raw materials and measures just to protect the Malay fruit industry.

Korean exporters complain about customs clearance delay. Hallyu (Korean wave) contributes to increasing the demand for products from Korea. Therefore, it is necessary to establish strategies for marketing focusing on the downtown areas, enhancing public relations and attracting Chinese-Malay consumers who earn relatively higher income.

Analysis of economic impact of non-tariff barriers

While the distribution of MFN (Most Favored Nation treatment) tariff (tariff applied to countries without FTAs) for fresh strawberries is maximum 80% for minimum no-tariffs, the tariff equivalent of non-tariff barriers is estimated to range between minimum 0.3% and maximum 121.4%. The average MFN tariff is 8.5%, and the average tariff equivalent of non-tariff barriers is 17.2%.

The tariff equivalent of non-tariff barriers of importing countries with income more than US\$20,000 is 21.86%, but that of importing countries with income not more than US\$20,000 is 14.64%. It suggests that higher-income importing countries enforce stricter regulations. Although the tariff barriers of developed countries at high economic development stages are low, their non-tariff barriers are thought to be relatively high.

The tariff equivalent is used to quantify the level of non-tariff trade barriers of fresh strawberry importing countries to analyze the trade-restrictive effect of the non-tariff barriers. While the distribution of MFN tariff ratio of fresh strawberries is 0%~80%, the tariff equivalent of non-tariff barriers is estimated to range between 0.3% and 121.4%, implying that the non-tariff barriers are more effective than tariff barriers in terms of trade hindering.

Table 5. MFN Tariff and Tariff equivalent of non-tariff barriers range in Strawberry

	Whole Countries			importing countries with income more than \$20,000 per capita	importing countries with income less than \$20,000 per capita
	Average	Max	Min		
① MFN Tariff	8.5%	80.0%	0%	2.8%	11.7%
② Tariff equivalent of non-tariff barriers	17.2%	121.4%	0.3%	21.9%	14.6%
② - ①	8.7%P	41.4%P	0.3%P	19.1%P	2.9%P

Source: WITS(<http://wits.worldbank.org/wits/>)

Conclusion and policy implication

In conclusion, if importing countries enforce stricter non-tariff barriers, exporting countries must pay administration and opportunity costs to reduce the volume of exports. The scale of exported strawberries depends on the intensity of non-tariff barriers. Therefore, it is necessary that Korea as a fresh strawberry exporting country, makes a plan for mitigating non-tariff barriers customized to target importing countries, and thus lowering the level of fresh strawberry export barriers in order to maximize the trade effect. There are several political strategies against non-tariff barriers as follows.

First is to examine and review regulations, institutions, WTO SPS/TBT notices for each item of each country, and provide hot lines to address issues involved in non-tariff barriers. In addition, the government should continue to collect information about major importing countries and other emerging importing countries, challenges in exporting strawberries, and information about non-tariff measures and build a communication system for seeking solutions.

Second, the government or related institutes should provide information about major importing countries and emerging markets for exporting fresh strawberries as suggested in related studies and support farmers through R&D. For example, seed development and management after harvesting required for vitalized exports of fresh strawberries.

Third is to collect information about and breed strategic export-oriented varieties. For example, sizes, colors and taste customized to each target country and to organize a support system efficiently to cope with non-tariff measures by sharing related information about each country and regional trends, and cooperating closely with the government if negotiation between nations is required as a strategy.

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Appendix:

The advantages of the RCA index are the follows: it embraces price and quality competitiveness factors and has a relative ease in data gathering. The RCA index is expressed in the following equation (1):

$$(1) \text{ RCA} = \frac{(X_{ij}/X_{wj})}{(X_{it}/X_{wt})}$$

where X_{ij} = exports of products j from nation i
 X_{wj} = total world exports of product j
 X_{it} = total exports from nation i
 X_{wt} = total world exports

It indicates a comparative advantage (export competitiveness) in export of j product in i nation when the index is greater than 1. We can interpret that the higher index value means the higher export competitiveness. RCA is an index widely used in international economics in respect to its feature representing export competitiveness by comparative advantage of specific product in certain importer's nation. The study will calculate CAC additionally to measure competitiveness of agricultural trade in TPP markets.

$$(2) \text{ CAC} = \frac{(X_{kor_aj}/X_{a_mj})}{(X_{kor_at}/X_{a_mt})}$$

where X_{kor_aj} = exports of products j from Korea to Nation a
 X_{a_mj} = imports of product j of Nation a
 X_{kor_at} = total exports from Korea to nation a
 X_{a_mt} = total imports of Nation a

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