



**Food and Agriculture  
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**World Health  
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**Agenda Item 13**

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**JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
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**DISCUSSION PAPER ON DEVELOPMENT OF A REGIONAL STANDARD FOR  
PRESERVED YUZA (*CITRUS JUNOS*)**

*New proposal prepared by the Republic of Korea*

**Introduction**

Yuza is a type of citrus fruit, whose scientific name is *Citrus junos* Siebold ex Tanaka. It originated in China, and is commercially cultivated in China, Japan and Korea.

Preserved Yuza is the product manufactured through cleaning, cutting to remove seeds, slicing Yuza fruit and then mixing with sugar and/or honey. This product is commonly consumed to make a drink by pouring cold or hot water, and is also used as a spread for bread, a salad dressing and a sub-ingredient for sauces, ice cream and rice cakes (*teuck*), etc. It is mostly produced and consumed in the Asian region.

**Necessity to develop the standard**

Major producers and consumers of Yuza fruit and Preserved Yuza are Korea, Japan and China. In Korea, the total production of Yuza processed products in 2008 has approximately doubled since 2000. Korea exports Preserved Yuza to over 50 countries. In Japan, it is estimated that the production of Preserved Yuza constitutes about 30~40% of all the Yuza products (Preserved Yuza, Yuza soy sauce, Yuza juice, etc.). Also, the Preserved Yuza market in Japan rapidly increased from 950 million Yen in 2003 to 4.5 billion Yen in 2005.

Although the trade volume of Preserved Yuza is steadily increasing not only in the Asian region but also all over the world, most countries do not have relevant legislations.

Furthermore, the distributors and consumers of Preserved Yuza are confused about the product, because this products' appearance is similar to that of citrus marmalade, and the product is wrongly distributed under the term 'citron tea' in markets. This creates much confusion in international trade as well as in domestic distribution.

Moreover, consumers are frequently deceived by low-quality imitation products having low content of Yuza fruit or using food additives such as colors, flavor enhancers and flavorings added to disguise the effects of the use of faulty raw materials.

Therefore, the development of a Codex standard is urgently needed to protect consumer from fraud and deception and to promote fair trade between countries.

**Recommendation**

Republic of Korea invites the Coordinating Committee to support the proposal to develop the Codex Regional Standard for Preserved Yuza and to consider the attached project document (Annex).

Republic of Korea also invites the Coordinating Committee to provide some additional information such as volume of production and consumption, and trade volume to complete the project document before submitting to Executive Committee for critical review.

## PROJECT DOCUMENT

### PROPOSAL FOR THE DEVELOPMENT OF A CODEX REGIONAL STANDARD FOR PRESERVED YUZA (*CITRUS JUNOS*)

#### 1. The purpose and scope of the Standard

The purpose of the standard is to provide information necessary for producing safe and high quality Preserved Yuza with the Codex's aim to protect consumers' health and to ensure fair trade practices. This standard shall apply to Preserved Yuza, which is manufactured by preserving Yuza with sugars.

#### 2. Its relevance and timeliness

Preserved Yuza is made only with *Citrus junos* Siebold ex Tanaka, and it does not contain other fruits belonging to the *Citrus* genus. The product has a high content of Yuza fruit and is not permitted to have a concentration process and also is limited to use food additives in order to maintain the proper sensory qualities (flavor, taste, texture, etc.) of the fresh fruit. However, this product's appearance is similar to that of citrus marmalade, and some products are distributed having low content of Yuza fruit and with food additives added to disguise low quality. This causes confusion to producers, distributors and consumers in international trade.

Furthermore, a number of Preserved Yuza is currently distributed in the international market under the name of CITRUS TEA. However, the scientific name of citron is *Citrus medica* L., a different species from *Citrus junos* Siebold ex Tanaka (Yuza) which is the main ingredient of Preserved Yuza. Taxonomically as well, citron belongs to Citrus-Archicitrus while Yuza belongs to Citrus-Metacitrus. Thus, these two species are completely different in their scientific name, origin, flavor, use, etc. (see Fig 2).

Also in sitology, the term tea means the dried leaves of tea plants or a drink made by pouring hot water onto the leaves. Hence, it is not correct to term Preserved Yuza as a tea, since the product is served as a form of preserve of the fresh fruit, and not with the fruit leaves.

Additionally, the product's appearance is similar to that of citrus marmalade, and some products are distributed having low content of Yuza fruit and with food additives added to disguise low quality. This causes confusion to producers, distributors and consumers in international trade.

Thus, if a Codex standard for Preserved Yuza is elaborated, it is assured that the correct name of Preserved Yuza will be used and the products shall not be confused with lower quality or imitation products. Consequently, consumers can be protected from fraud and deception, and fair trade practices can be promoted between countries.

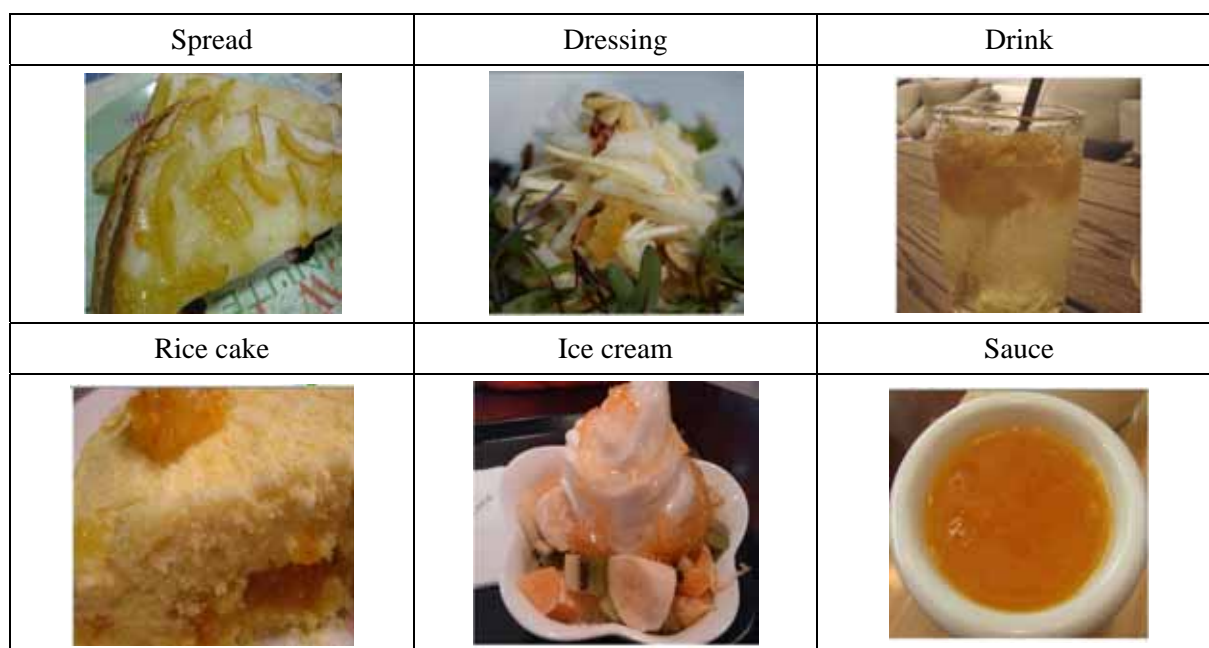




Figure 1 Various consumption of Preserved Yuza

	<b>Yuza</b>	<b>Citron</b>
Features		
Taxonomy	<i>Citrus – Metacitrus</i>	<i>Citrus - Archicitrus</i>
Scientific name	<i>Citrus junos</i> Siebold ex Tanaka	<i>Citrus medica</i> L.
Origin	China A hybrid nature between <i>C. ichangensis</i> and <i>C. reticulata</i>	India Parents unknown
Uses	Processed food product	Flavorings
Flavors	Very acidic and somewhat bitterish	Sweet (without acid)

**Figure 2 Comparison of Yuza and Citron**

Sources: Fruit Crops Experiment Station in Korea

University of California Riverside, College of Natural and Agricultural Sciences, Citrus Variety Collection

### 3. Main aspects to be covered

This standard deals with aspects related to quality and safety in accordance with the characteristics of the product in order to facilitate international trade in the following manner:

The main aspects to be covered would be:

- product definition and types of the product;
- essential composition and quality factors including their criteria;
- food additives and their maximum usage levels;
- packing methods and labeling, and
- analysis methods for each of the quality factors.

### 4. An Assessment against the Criteria for Establishment of Work Priorities

a) *Volume of production and consumption in individual countries and volume and pattern of trade between countries*

Major producers and consumers of Yuza fruit and Preserved Yuza are Korea, Japan and China.

In Korea, the total production of Yuza processed products in 2008 has approximately doubled since 2000, and Preserved Yuza accounts for more than 90% of all types of Yuza processed products. Most Yuza fruits are used as the main ingredient for Preserved Yuza (see Table 1).

Korea exports Preserved Yuza to over 50 countries. Major importers are China, Japan, Hong Kong and Taiwan in Asia, with many other countries in Europe, America and Africa being the major import destinations in the rest of the world. Total export volume was 10,464 tons worth USD 26,843 thousand and has been increasing steadily annually (see Table 2).

**Table 1 Production of Yuza processed products in Korea (tons)**

Item	2000 (tons)	2001 (tons)	2002 (tons)	2003 (tons)	2004 (tons)	2005 (tons)	2006 (tons)	2007 (tons)	2008 (tons)
Can	–	–	–	–	5	–	–	–	–

Juice	105	108	220	576	20	150	40	150	58
Nectar	-	-	-	-	-	-	-	-	-
Jam	23	-	46	174	15	6	4	165	2
Alcohol	-	33	53	10	30	75	50	38	28
Vinegar	-	-	-	-	-	-	-	-	-
<b>Preserved Yuza</b>	<b>6,253</b>	<b>4,753</b>	<b>6,698</b>	<b>6,336</b>	<b>9,110</b>	<b>10,164</b>	<b>10,805</b>	<b>11,192</b>	<b>12,440</b>
Total	6,381	4,894	7,017	7,096	9,179	10,395	10,899	11,545	12,528

Source: The Ministry of Food, Agriculture, Forestry and Fisheries (www.mifaff.go.kr)

**Table 2 Korea's exports of Preserved Yuza (tons, 1000 US\$)**

Country	2007		2008		2009	
	Quantity (tons)	Value (1000 US\$)	Quantity (tons)	Value (1000 US\$)	Quantity (tons)	Value (1000 US\$)
<b>Total</b>	<b>8,359</b>	<b>25,275</b>	<b>9,847</b>	<b>27,148</b>	<b>10,464</b>	<b>26,843</b>
China	2,189	5,627	3,991	9,771	4,272	9,499
Japan	2,771	9,982	2,157	7,438	2,477	8,082
Hong Kong	1,278	3,610	1,523	4,033	1,404	3,536
Taiwan	1,403	3,794	1,277	3,396	1,298	2,973
US	350	1,206	316	819	429	1,100
Canada	123	379	134	394	132	353
Malaysia	29	80	140	359	70	181
Macao	31	100	63	192	72	216
Australia	38	127	36	124	44	130
Singapore	38	99	37	130	43	137
Russia	29	22	58	74	31	67
Mongolia	5	20	18	68	48	149
Others(44 countries)	75	229	99	351	146	419

Source: The Korea International Trade Association

Japan produced 20,378 tons of Yuza fruit in 2007, and 14,181 tons, 75% of the total production were consumed for processing purposes. This quantity doubled since 1995, and it shows the continuous growth of the Yuza consumption for processing purposes (see Table 3). In Japan, it is estimated that the production of Preserved Yuza constitutes about 30~40% of all the Yuza products (Preserved Yuza, Yuza soy sauce, Yuza juice, etc.). Also, table 4 shows that the Preserved Yuza market in Japan rapidly increased from 2003 to 2005.

**Table 3 Production of Yuza in Japan (ha, tons)**

Year	Harvested area (ha)	Production (tons)	Shipment (tons)	Use (tons)	
				Fresh	Processed
1995	2,010	14,331	12,525	4,901	7,624
1996	2,012	14,056	12,140	4,920	7,220
1997	1,975	16,032	14,686	5,537	9,149
1998	2,001	17,769	16,569	5,534	11,025
1999	2,034	15,893	14,474	4,607	9,829
2001	1,944	18,354	16,306	5,631	10,675
2002	1,942	16,861	14,676	5,323	9,353

2003	1,875	15,071	13,688	4,794	8,894
2004	1,924	20,001	17,231	3,899	13,332
2005	1,872	15,231	14,323	4,195	10,128
2006	1,924	15,595	14,580	4,110	10,470
2007	1,872	20,378	18,845	4,664	14,181

Source: The Ministry of Agriculture, Forestry and Fisheries (www.maff.go.jp)

**Table 4 Preserved Yuza market in Japan (¥, Japanese yen)**

2003 (¥, Japanese yen)	2004 (¥, Japanese yen)	2005 (¥, Japanese yen)
950,000,000	1,850,000,000	4,500,000,000

Source: Fuji Economics. Co. Ltd. (estimated values)

*b) Diversification of national legislations and apparent resultant or potential impediments to international trade.*

Although the trade volume of Preserved Yuza is steadily increasing not only in the Asian region but also all over the world, most countries do not have relevant legislations.

Furthermore, the distributors and consumers of Preserved Yuza are confused about the product, because this products' appearance is similar to that of citrus marmalade, and the product is wrongly distributed under the term 'citron tea' in markets. This creates much confusion in international trade as well as in domestic distribution.

Moreover, consumers are frequently deceived by low-quality imitation products having low content of Yuza fruit or using food additives such as colors, flavor enhancers and flavorings added to disguise the effects of the use of faulty raw materials.

For that reason, a separate standard for Preserved Yuza needs to be elaborated in order to correct the product name and definition of the product and also to remove potential impediments in international trade.

*c) International or regional market potential*

Yuza contains a plenty of functional substances. It is especially rich in Vitamin C and Calcium, so that it is good for relieving fatigue, stimulating appetite and preventing colds. It is also helpful in strengthening bones to avoid osteoporosis.

With the combination of essential oil components from the skin of Yuza fruit, the sour taste of citric acid and bitter taste of limonoid, Yuza has its own unique flavor and sour taste compared to other citrus fruits.

Also, Preserved Yuza has a high content of the Yuza fruit, with minimal manufacturing processes and without a concentration process so that the product can retain the flavor and color of the fresh fruit.

As a result, these specific features of Preserved Yuza increasingly attract consumers to the product hence its consumption has been continuously growing. In fact, Korea's export volume of Preserved Yuza in 2009 in particularly Asia was 9,739 tons which rose to 25.6% higher than in 2007, and its trading volume has expanded over all regions: North America, Europe, Oceania, and Latin America (see Table 5).

Hence, the product has enormous market potential in both regional and international trade.

**Table 5 Korea's exports of Preserved Yuza - by continent (tons, 1000 US\$)**

Continent	2007		2008		2009	
	Quantity (tons)	Value (1000 US\$)	Quantity (tons)	Value (1000 US\$)	Quantity (tons)	Value (1000 US\$)
Asia	7,753	23,341	9,236	25,499	9,739	24,946
North America	472	1,585	450	1,213	561	1,454
Europe	107	225	163	371	144	366
Oceania	51	146	51	143	54	145
Latin America	3	7	5	6	4	10

Source: The Korea International Trade Association

*d) Amenability of the commodity to standardisation.*

Preserved Yuza is made only with *Citrus junos* Siebold ex Tanaka, and no other citrus fruit so that the product retains the fresh Yuza's unique taste and flavor (refer to Section 4-c). Also, the product has a high content of Yuza fruit with minimal manufacturing processes, and usage of food additives is limited, therefore, the definition of Preserved Yuza is clearly distinguishable from other citrus fruit products.

As mentioned in Section 2 in this project, Preserved Yuza is currently wrongly distributed under the name of 'CITRON TEA' and this creates confusion and friction in trade and misleads consumers. Additionally, from a point of view of the manufacturing process, the quality factors which directly affect the quality and safety of the products such as drained weight, seeds residue, acidity, pH and brix all lend to adequate parameters for the standardization of the product.

Accordingly, Preserved Yuza is highly amenable to standardization which will cover the correct definition and name of the product and relevant quality factors while ensuring consumers' health and fair trade practices

*e) Main coverage of the consumer protection and trade issues by existing or proposed general standards*

Specific provisions to be covered in this proposal, in particular non-safety provisions such as product identity, essential composition and quality factors, packaging, storage and labeling, are not covered by horizontal Codex texts.

*f) Number of commodities which would need separate standards indicating whether raw, semi-processed or processed*

This proposal would meet a single standard for the processed product for direct consumption, including catering purposes or for repacking purposes if required.

*g) Work already undertaken by other international organization in this field*

None identified.

## **5. Relevance to Codex strategic objectives**

This proposal meets with *the Goal 1.2 of Part 2 – Review and develop Codex standards and related texts for food quality* of the Strategic Plan 2008-2013 of the Codex Alimentarius Commission to ensure that they are generic in nature and while maintaining inclusiveness, reflect global variations and focus on essential characteristics to avoid being overly prescriptive and not more trade restrictive than necessary.

## **6. Information on the relation between the proposal and other existing Codex**

Yuza is a type of citrus fruit. For processed products using citrus fruits, there is a standard (CODEX STAN 296-2009) for Jams, Jellies and Marmalades. The citrus marmalade covered by the standard has a similar appearance to Preserved Yuza, but it is totally different in its fruit content, manufacturing methods, permitted additives, uses, etc. Hence this calls for the elaboration of a separate regional standard for preserved Yuza which is different from the Codex standard for jam, jelly and marmalade.

## **7. Identification of any need for any requirements for and availability of expert scientific advice**

This proposal will mainly focus on non-safety matters; therefore, no provision for scientific advice is foreseen at this time. Safety provisions, e.g., food additives and method of analysis, specific to the product, which may not be covered by horizontal Codex texts, will be developed subject to endorsement by the relevant general committees (see also Section 3).

## **8. Identification of any need for technical input to the standard from external bodies so that this can be planner for**

Not applicable.

## **9. Proposed time-line for completion of the new work**

If the 17<sup>th</sup> session of CCASIA agrees to develop a regional standard for Preserved Yuza, the project document for the proposal will be submitted to the Executive Committee for critical review. Subject to approval as a new work by the Codex Alimentarius Commission in 2011, a proposed draft Standard will be circulated for comments and consideration by CCASIA in 2012. Preliminary adoption by the Commission is foreseen in 2013 and subsequent circulation of the draft Standard for comments and consideration by the

Committee in 2014 with a view to its final adoption by the Commission in 2015. The application of an accelerated step of procedure might be taken into account.

<b>Date</b>	<b>Advance and Procedures</b>
<b>Nov. 2010</b>	Consideration of the proposal by CCASIA
<b>Jul. 2011</b>	Critical review by CCEXEC and approval by the Commission
<b>Jul. 2011~Oct. 2012</b>	Preparation of the Proposed Draft Standard and circulation for comments
<b>Nov. 2012</b>	Consideration of the Proposed Draft Standard by CCASIA
<b>Jul. 2013</b>	Adoption by the Commission as a Draft Standard
<b>Jul. 2013~Oct. 2014</b>	Circulation for comments on the Draft Standard
<b>Nov. 2014</b>	Consideration of the Draft Standard by CCASIA
<b>Jul. 2015</b>	Final Adoption by the Commission as a Regional Standard