

**Market Survey  
of the  
Korean Dried Fishery Product Industry  
for Alaskan Dried Foods**

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Submitted by  
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## **I. Historical development of the dried fishery industry in Korea**

### **A. By the Period of Chosun Dynasty (14C - 19C)**

Throughout Korea's history, dried fishery products have been favorite side-dish foods. This is because dried fishery products could be naturally stored at a time when there was no effective means of refrigerated storage available. In the old days, fishery products were dried and salted because of the availability of clean and dry air – both important conditions required in the traditional processing of dried seafood products.

During this period, most dried fishery products were used, not for animal feed and fertilizer, but as a major source of protein for the general population. The major processing method was plain sun drying – a procedure that was simple and served as the prototype for current drying processes.

The boiled-drying method was not popular at the beginning of this period, but became popular at the end of Chosun Dynasty. The frozen-dry method was used for Alaska pollock in the northeast area of the Korean Peninsula. The development of this particular drying procedure encouraged technical specialization in both the fishery and processing industries. In contrast to the more agrarian type of fishery workers, only processors, called 'Chung Joo', could afford to manage large drying process facilities, called 'Duk', due to the large labor force and large land holdings required for these facilities.

### **B. The Japanese Colonial Period (1910 - 1945)**

In the first half of the Japanese Colonial Period, when Japanese processors were producing boiled-dried and canned fish in Korea, Korean processors produced frozen-dried Alaska pollock, salted-dried corvina, boiled-dried anchovy, and several other products. In the second half of this period, the sardine processing industry developed

very rapidly and the resulting products were used not only for food, but also for animal feed and fertilizer. Canned fish (sardine and mackerel) and frozen fish (sardine) were produced during this time.

One notable phenomena in seafood processing during the Japanese Colonial Period is that the dried fishery industry in Korea changed from a small-sized domestic industry to one of mass production.

### **C. Industrialization Period (1950 - present )**

After independence from the Japanese occupation, the Korean economy was basically agrarian in structure. Among the prime resources for development were fishery products. Exports have been the engine of the growth and development of the Korean economy, providing employment opportunities, income, and needed foreign exchange. It should be noted that the fishing industry is one of the major export industries. This industry has helped to further increase the growth of exports by upgrading processing technology for manufacturing dried fishery products. In this connection, the major dried seafood export items have been products from species such as Alaska pollock and squid.

Since the rapid industrial development of the Korean economy, based largely on the export of industrial products, Korea has had to open its food product markets, including the seafood market, in order to comply with the Uruguay Round Agreement.

Consequently, Korea has lifted trade constraints on most fishery items effective July 1, 1997. In this regard, most raw materials used in the production of dried fishery products have been imported from neighboring countries, including China and Russia. Also, large amounts of dried fishes have been imported from China and Russia, where many Koreans have established their residency.

## **II. Overview of dried fishery processes used in Korea**

Two principle methods of drying fish are used in Korea. One is a natural drying method, employing strategies such as drying in the sunshine or in shaded areas. The other process is artificial drying, such as drying with cool or hot air.

### **A. Drying processes by product**

#### **1) Plain dried products**

Squid, cod, shark fin, octopus, and pollock

##### *Example of dried squid*

Fresh squid are opened, gutted, placed in a brine solution, and then washed and agitated in fresh water. The squid are dried for 2 days, reshaped, and dried for 3 additional days (final water weight is 20%).

#### **2) Boiled and dried products**

Anchovy, oyster, abalone, sea cucumber, shrimp, clam, shellfish ligament, and cartilage

##### *Example of boiled-dried anchovy*

Anchovy are sorted by size – ‘Taemyul’ 7.7cm or more, ‘Jungmyul’ 7.6-4.6 cm, ‘Somyul’ 4.5-3.1 cm, and ‘Jamyul’ 3.0-1.6 cm. The fish are washed with fresh water, boiled in brine (5-6% salt) and then dried in the sun for 2 to 3 days.

#### **3) Salted and dried products**

Corvina, mackerel, saury, sardine, mullet roe, hair tail, and yellow croaker

##### *Example of salted-dried corvina*

After storing fresh corvina in brine for 7 to 10 days, the fish are dried in the sun for 3 to 5 days. In recent years, low salt dried corvina (high water weight) has become popular. However, this product is quite perishable.

#### 4) **Frozen and dried products**

Alaska pollock and agar-agar

##### *Example of frozen-dried Alaska pollock*

Alaska pollock are sorted out by size - large-size ('Baramte'), medium-size ('Kodari'), and small-size ('Nogari'). The fish are opened, guts removed, the meat cleaned in the 2-3°C fresh water, and then hung on the 'Duk' or drying facility. The Alaska pollock freezes at night and then melts and continues to dry during the daytime. This process continues over a number of days until its water weight is 80 percent. This product is dried in the sunshine. From beginning to end, this process takes 40 to 70 days.

#### 5) **Seasoned and dried products**

Sardine, sea smelt, squid, file fish, and octopus

Generally, fresh fishes are opened, gilled and gutted, and then cleaned with fresh water. Before the products are dried, they are seasoned with soy sauce, sugar, chili sauce, and other spices.

### **B. Artificial Drying Methods**

Artificial and mechanical drying methods include both hot air drying and cold air drying. Infrared drying and vacuum drying machines were used at one time, but these drying machines did not satisfy the needs of processors and their use was discontinued. Natural sun-drying yields a highly concentrated quality product, but is not always efficient because of the unpredictability of weather. Processors making use of this natural method usually freeze and hold their fish to dry it during periods of good weather.

Generally, artificial drying was not popular in Korea. A sufficient labor force and good weather resulted in a dried seafood industry dependent on the natural drying method. However, due to the decrease of young workers entering this sector of the economy, fishers and processors have imported hot air-drying machines from Japan to cover the problems of insufficient labor and storage cost.

Anchovy is an example of a major item that is dried in artificial drying facilities. Fishing for anchovy occurs in July and August – which is also the rainy season. It is very difficult to produce dried products of good quality during periods of bad weather. Because of this difficulty, hot-air drying machines became very popular with fishers and processors. But there are remaining problems associated with the hot-air drying of a product such as anchovies. The consumers do not prefer hot-air dried anchovy due to its bad smell and perceived poor quality. As a consequence, the price of naturally dried anchovy is higher than hot-air dried anchovy. Processors could produce almost the same quality of dried anchovy through the use of cold-air machines and sell it at a higher price. This is why this procedure is becoming popular among processors, although cold-air drying machines are more expensive than the hot-air variety.

Several firms manufacture artificial drying machines in Korea. Some processors use imported machinery from Japan, while others use locally manufactured facilities. Local facilities are becoming popular due to their low price and good quality.

The use of artificial drying can significantly reduce total drying time as compared to sun drying. As stated earlier, sun drying can require several days of exposure. The following table lists the drying temperatures and drying times employed by one processing factory. Some aspects may vary from one machine to another. Also, the technology involved is constantly progressing. Table 1 shows times for items that are dried using cold-air. According to the cold-air machine manufacturer, this specific factory is focusing on squid and anchovy products.

**<Table 1> Cold-air drying Items**

<b>Item</b>	<b>dry temperature(°C)</b>	<b>dry time(hr)</b>
<b>squid</b>	20~50	12 ~ 20
<b>anchovy</b>	20~30	16 ~ 20
<b>sole</b>	20~25	4 ~ 8
<b>mackerel</b>	20~25	30 ~ 35
<b>sea eel</b>	20~25	2 ~ 5
<b>brown seaweed</b>	16~30	8 ~ 12
<b>sea tangle</b>	20~30	12 ~ 15

Source : Doo Seung Engineering Co.

<Figure 1> Doo Seung's cold-air drying machine



The followings are manufactures of food drying machines in Korea:

***Doo Seung Engineering***

717-5 Hak Jang dong Sasang gu

Pusan, Korea, 617-020

Tel: 82-51-325-8986/7

Fax: 82-51-325-5082

***Woolee Su Kwang Yang Hang***

633-1, Chun-Li, Lidong-Myun, Young-In

Kyungi-Do, Korea

Tel: 82-2-561-2189

Fax: 82-2-568-5114

***Keu Seung IBC***

Yeun San BLD. 3 FL., 1547-15

Seucho 3 Dong, Seucho-Gu

Seoul, Korea

Tel: 82-2-586-1695

Fax: 82-2-588-4073

### III. Korean dried fish market analysis in general

#### A. Production of Dried Fish

As Table 2 indicates, the production of processed fishery items has increased. In these Korea Fishery Association statistics, amounts of processed fishery products include both nearshore and deep-sea fisheries, but the value of species that are imported and dried in Korea are not included. In an interview with a wholesaler, it was indicated that Russian vessels come to Pusan to sell their fish in bulk, especially Alaska pollock, to Korean drying processors. Also, there has been a scandal that the imported frozen corvina from China was dried by Korean processors and illegally sold without indicating the country of origin on the label.

<Table 2> **Production Amount and Ratio of Processed Fishery against Fresh Fishery**

(Unit : 1,000 M/T, %)

year	1994	1993	1992	1990	1985	1980
<b>total</b>	3,477	3,335	3,289	3,289	2,252	1,925
<b>Fresh fishery</b>	653	586	287	437	889	954
<b>Processed fishery</b>	2,824	2,749	2,924	2,827	1,363	998
<b>Rate of processed (%)</b>	81.0	82.4	88.9	86.6	60.5	51.1
<b>Processed fishery product</b>	1,715	1,486	1,771	1,754	*	*

Source : Korea Fishery Association, Yearbook of Fishery

\* Not available.

Among other items included in Table 3, squid is found in two categories - dried and 'flavor seasoned' (seasoned and dried) categories. Dried squid is dried without sauce, but seasoned squid is flavor seasoned, dried with high water weight, and usually vacuum packed due to easy contamination.

<Table 3 > Production of Preserved and Processed Fishery Commodities  
(in M/T)

Year	1996	1995	1994	1993
<b>Total</b>	<b>1,727,497</b>	<b>1,691,810</b>	<b>1,714,511</b>	<b>1,486,181</b>
<b>Coastal &amp; offshore waters</b>	<b>1,086,440</b>	<b>910,101</b>	<b>898,152</b>	<b>794,592</b>
<b>Dried</b>	<b>42,426</b>	<b>34,686</b>	<b>14,694</b>	<b>20,144</b>
Squid	14,652	18,767	9,232	11,939
Alaska Pollock (frozen & dried)	24,939	14,166	3,847	6,106
Shrimp	53	237	288	355
Gouneles	177	80	260	227
Shark fin	-	-	2	4
Octopus	3	76	858	773
Clam	341	-	7	3
Others	2,261	130	200	737
<b>Salted &amp; Dried</b>	<b>2,742</b>	<b>2,068</b>	<b>1,191</b>	<b>928</b>
Corvina	2,654	1,275	994	854
Others	88	792	197	74
<b>Cooked(boiled)</b>	<b>40,008</b>	<b>12,695</b>	<b>24,473</b>	<b>29,904</b>
Anchovy	38,440	11,743	21,643	24,990
Shrimp	209	163	221	114
Sea Mussel	6	50	219	98
Oyster	953	651	2,063	4,673
Clam	-	-	8	4
Others	400	88	319	25
<b>Salted &amp; Preserved</b>	<b>775</b>	<b>214</b>	<b>95</b>	<b>164</b>
<b>Pickled</b>	<b>20,349</b>	<b>16,613</b>	<b>10,594</b>	<b>12,404</b>
<b>Canned</b>	<b>61,902</b>	<b>63,117</b>	<b>63,899</b>	<b>48,651</b>
<b>Frozen</b>	<b>631,717</b>	<b>504,540</b>	<b>490,784</b>	<b>410,845</b>
<b>Sea-weeds</b>	<b>88,657</b>	<b>94,435</b>	<b>117,376</b>	<b>108,701</b>
<b>Agar-agar</b>	<b>563</b>	<b>403</b>	<b>393</b>	<b>272</b>
<b>Ground Fish Meat</b>	<b>115,808</b>	<b>107,677</b>	<b>108,717</b>	<b>99,090</b>

<b><u>Flavor Seasoned &amp; dried</u></b>	<b><u>12,265</u></b>	<b><u>14,161</u></b>	<b><u>12,278</u></b>	<b><u>10,275</u></b>
Squid	10,360	7,334	4,888	6,399
File fish	54	152	101	358
Others (sardine, sea smelt, etc.)	1,851	6,675	7,289	3,518
<b><u>Fish Meal &amp; Oil</u></b>	<b><u>43,132</u></b>	<b><u>48,933</u></b>	<b><u>42,068</u></b>	<b><u>46,046</u></b>
<b><u>Others</u></b>	<b><u>26,096</u></b>	<b><u>10,560</u></b>	<b><u>11,590</u></b>	<b><u>7,258</u></b>
<b><i>Distant waters</i></b>	<b><i>43,132</i></b>	<b><i>781,709</i></b>	<b><i>816,359</i></b>	<b><i>69,1589</i></b>
<b><u>Prototype Frozen</u></b>	<b><u>600,353</u></b>	<b><u>733,284</u></b>	<b><u>788,645</u></b>	<b><u>670,885</u></b>
Alaska Pollock	103,728	172,867	205,416	146,987
Tuner	206,882	227,173	251,166	177,662
Red Fish	-	-	1,129	3,738
Squid	172,090	193,107	176,140	196,358
Cod	2,742	2,215	3,223	3,581
Flounder	372	211	2,478	2,122
Others	114,541	137,711	149,093	140,437
<b><u>Processed Frozen</u></b>	<b><u>33,120</u></b>	<b><u>38,040</u></b>	<b><u>22,053</u></b>	<b><u>15,182</u></b>
Alaska Pollock	13,686	7,216	5,472	4,185
Alaska Pollock Roe	3,390	4,110	2,985	1,206
Fish-Paste	16,044	26,714	13,596	9,791
Others	-	-	-	-
<b><u>Fish Meal &amp; Oil</u></b>	<b><u>7,584</u></b>	<b><u>10,385</u></b>	<b><u>5,661</u></b>	<b><u>5,522</u></b>
Fish Meal	7,528	10,385	5,643	5,477
Fish Oil	56	-	18	45

Source: *Statistical Yearbook of Agriculture, Forestry and Fisheries(1995~1993)*,  
Ministry of Agriculture, Foods and Fisheries

**<Table 4> Imported Dried Fishes by HS-code**

Unit: 1,000 US\$ (M/T)

<b>Year</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>
<b>HS-Code</b>			
0305-51-1000 Dried Cod	- (-)	1.70 (0.40)	
0305-59-1000 Dried Shark's Fin	206.37 (1.95)	761.73 (4.86)	664.58 (11.34)
0305-59-2000 Dried Anchovy	759.86 (121.89)	4,891.64 (545.24)	1,180.61 (381.12)
0305-59-3000 Dried Alaska Pollock	708.63 (155.39)	927.68 (208.39)	2,917.18 (603.99)
0305-59-4000 Dried Yellow Corvina	- (-)	2.20 (0.1)	- (-)
0305-59-9000 Other Dried Fish	700.25 (88.08)	1,571.95 (195.91)	1,971.33 (218.26)
0306-23-2000 Dried Shrimp & Prawns	46.16 (1.20)	10.01 (0.30)	975.63 (149.66)
0307-49-3000 Dried Cuttle Fish & Squid	11.54 (0.75)	6.04 (0.74)	816.17 (59.03)
0307-99-2190 Other Dried Mollusks	14.19 (0.13)	6.74 (0.06)	- (-)

Source : *Monthly Foreign Trade Statistics*, Korea Customs Service Republic of Korea & Korea Customs Research Institute

## **B. Distribution Channel of Dried Fishery Products**

### **1) Changes in the Distribution Channel**

In 1997, several important changes occurred in the Korean market. This market had been criticized for being closed and hard to access. After joining OECD, Korea has implemented a liberalization policy.

#### ***Internationalization***

In 1996, the Korean government lifted the restriction on foreign investment in the distribution industry. For example, foreign discount stores made inroads into the domestic market - sparking intense competition among the Korean firms. Carrefour of France and Makro of the Netherlands increased their market share, emerging as the third and the fourth largest discount stores, respectively, in Korea. The French-based Carrefour is scheduled to open six new stores next year in Incheon, Taegu, Kwangju, Ulsan, Pundang, and Anyang. This company has also increased its paid-in capital from 300 billion to 800 billion. Makro will open new stores in Taegu and Pusan. These foreign discount stores deal with foreign products.

In response to this challenge by big foreign discount stores, domestic distributing chains, scrambling to increase their operations and dominate the market, are scheduled to open local discount stores next year. If the competition to build more stores continues, the total number of discount outlets is expected to number 122 by the end of next year, according to the Daewoo Economic Research Institute.

Due to the government's focus on the manufacturing industry, the distribution industry has failed to discard some outdated business methods. However, they have recently begun to adopt advanced marketing methods in order to cope with the formidable challenge from the foreign firms.

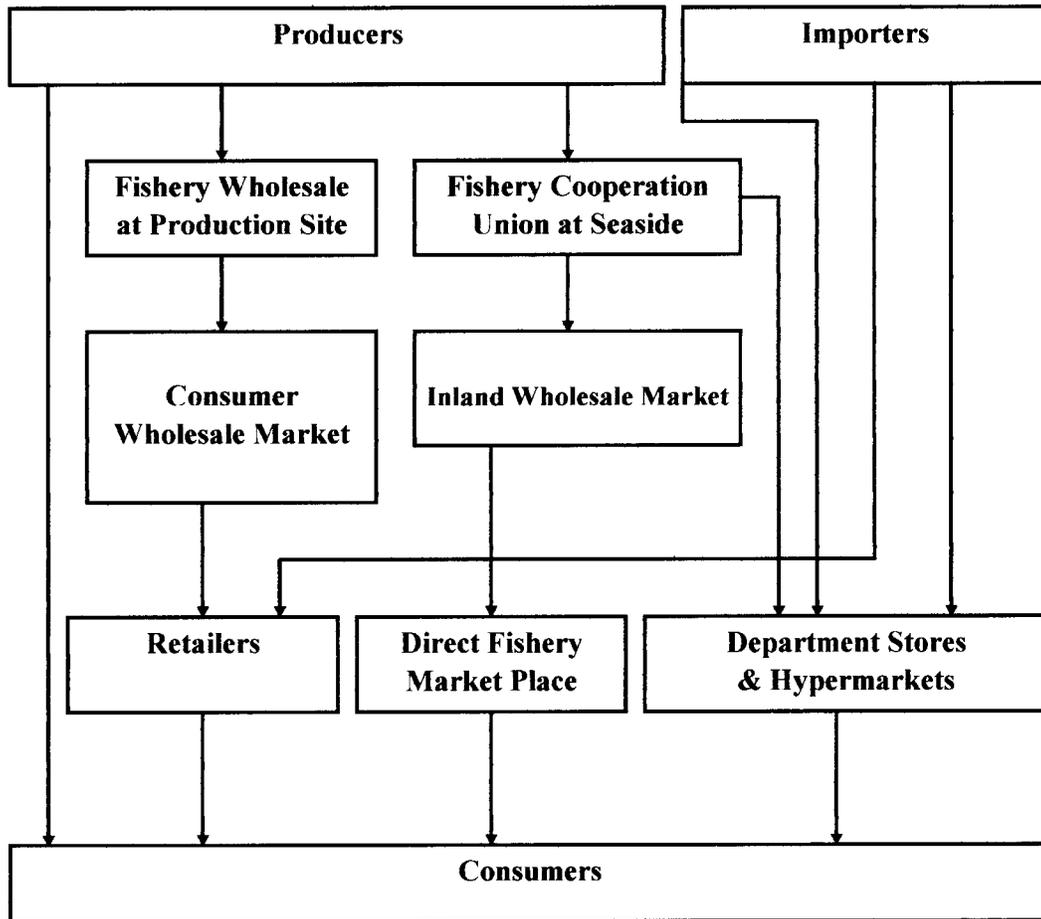
### *The change in consumers' preference and the development of food service*

With the increase in income and the changes in lifestyles, dried seafood products that are ready to cook have become preferable among core families. In particular, small-sized, well-packaged, and high-quality foods are very popular. The size of the potential market is quite large. The food service market has rapidly developed in urban areas and the size of this market is estimated to be about 20,000 billion Won per year. The recent major change in the distribution system was stimulated by the use of direct distribution methods, which allow for the movement of goods directly from processors to retailers or food service industries and eliminate the need for intermediate distributors.

#### **2) The Distribution Channel of Dried Fish**

In the past, many dried seafood processors used a single channel to move their dried products. The fishery corporation union (Fishery Industry Association) at coastal locations sold all fishery products on behalf of the processors with a 4.8 percent commission. After the liberalization of the fishery distribution system, fishers and processors could use two or three marketing channels to sell their fishery products to end-users. They could sell their products to the private distributors and even directly to the consumers through post office mail orders. In its current stage of development, the fishery distribution channel consists of two or three distribution levels. Consumer groups and department stores have recently commenced efforts to directly purchase dried fishery products from processors.

<Figure 2> Distribution Channel of Dried Fishery



**C. Key producers, distributors, and traders in the Korean dried fishery market**

**<Table 5> Major Importers in the order of import value (1997)**

<b>Company</b>	<b>President</b>	<b>Tel</b>	<b>Fax</b>
JUNGAN DRIED FISH CO.	LEE, DUK-HWAN	51-414-8495	51-417-8487
WOOSHIN CO, LTD.	KIM, KI-SOON	51-412-1424/5	51-412-5779
K.J. ENTERPRISE CO.,LTD.	PARK, NAM-SOC	2-3141-4131/4	2-3141-4135
GORDEN CORPORATION	KIM, BEOM JAE	2-542-4691	2-542-4690
Korea Tourist Supply Center	YOO, HYO HI	2-458-3291/8	2-458-8052
KO-RYO COMPANY LTD.	KANG, MIN JA	51-245-3011	51-244-3010
YOOSUNG CORPORATION	LIM, SANG-TAE	2-548-8986	2-540-7498
KUKJE CORPORATION	LEE KYEAL	525-31-7111	525-36-4797
SSANGYOUNG CORPORATION	AHN, CHON-WON	2-270-8144	2-270-8221
Dongwon Industries CO.,LTD.	OH, DONG-BIN	2-589-3000	2-589-3289
DAEYANG CORPORATION	SHIN, DONG PHIL	2-3452-8123/6	2-3452-8121
HAE IN MULSAN CO.,LTD.	SON, IM-RAK	51-255-7684	51-255-7686
BO-BU CO.,LTD.	LEE, SANG-MAN	2-608-2333/4	2-691-5798
OUNG HO TRADING CO.,LTD.	LEE MEONG HO	53-254-1505	53-256-3703
GILTAE CORPORATION	IM, HEUNG-SUP	2-597-4444	2-597-4447
E-RE TRADING CO.,LTD.	PARK, SANG O	2-408-3263/4	2-408-3265
JUNG HEUNG MULSAN CO.,LTD.	JUNG, KI-SUNG	2-403-1362/3	2-403-9564
KYUNGWA TRADING CO.	KWON, OH YOUNG	2-817-9432/3	2-817-9204
Y.K.CO.,LTD.	HWANG, YONG- KI	2-753-5975	2-754-6199
HANYOUNG CO.,LTD.	LEE, KANG-ICK	51-246-0555	51-247-3091
KEUM SAN	KIM, PIL-SOO	662-44-3555	662-42-9437
KOYU FOODS CO.,LTD.	PARK, OH SOON	636-454-7987	636-454-0594
HAE YOUNG SUSAN	YU, BYUNG-YARL	631-44-3111	631-44-0990
KOREA NEW-NEA CORP.	KANG, MOON- HEE	346-66-4666	346-66-4669
DONG NAM TRADING CO.	KIM, KEUN-BAI	51-462-6589	51-462-8988
NAM IL FOODS CO.	PARK, KIL-DONG	662-651-9755	662-651-9464
HAEJU CO.,LTD.	OH, SEA-HO	2-529-6695/7	2-529-6698

SHIN MI TRADING CO.,LTD.	KIM, HONG-RAI	2-966-4416	2-969-1852
Jooklim International CO.,LTD.	HUR KI JEONG	2-589-1920	2-589-1918
SEJOONG CORPORATION	KIM, KYONG-TAE	2-3452-6698	2-556-6698
TAE SEUNG INDUSTRY CO.LTD.	LEE, DONG WOOK	446-882-7169	446-882-7975
DOO LEE INTERNATIONAL CORP.	LEE, JEONG HWAN	2-409-5105	2-430-8066
SONG AM TRADING CO.	CHO, HYE JWA	2-723-7464/5	2-727-9353
BONGSU CO.,LTD.	KWUN, YOUNG- HAN	51-248-0513	51-254-4006
SIN HAN TRADING CO.,LTD.	PARK, EUN HEE	662-83-0915	-

Source: Korea Trade Information Database

<Table 6> The Sale of Major Department Stores (Unit 1 Million Won)

	1994	1995	1996
<b>Lotte</b>	17,189	20,359	29,390
<b>Shinsegae</b>	7,793	9,261	1,962
<b>Hyundai</b>	7,097	9,392	11,347
<b>Newcore</b>	7,262	9,013	11,040

Source: Korea Super Chain Association

<Table 7> The Sales of Major Super Chains (1996)

Major Super Chain	No. of store	Sales ( 1 M Won)
<b>LG Distribution</b>	56	647,641
<b>Hanwha Distribution</b>	61	608,241
<b>Hai Tai Distribution</b>	66	308,208
<b>Nong Shim Ga</b>	51	225,763
<b>Woo Sung Distribution</b>	18	126,254
<b>Su Woon Distribution</b>	29	102,433
<b>Samyang Distribution</b>	14	66,619
<b>Hanshin Kongyoung</b>	5	57,312
<b>Aram Distribution</b>	18	46,499
<b>Wha-Ni Chain</b>	11	42,394
<b>Wha-In Distribution</b>	15	34,027
<b>Gu-Pyung Distribution</b>	7	32,329
<b>Hannam Chain</b>	6	28,843

Source: Korea Super Chain Association

#### **IV. Traditional uses and recipes for dried fishery products**

Dried seafood products have been important sources of protein. People have eaten dried fish as side dishes, especially on traditional festival days. When families gather to perform ceremonial rites at ancestral graves, large-size dried Alaska pollock is a very important dish. For example, on Korean Thanksgiving Day (15th day of the 8th month by the lunar calendar) and New Year by the lunar calendar, people visit family tombs and present food offerings to their ancestors. One of the foods is dried Alaska pollock. Dried anchovy boiled in salt water is an essential ingredient of soup stock with chili sauce in home cooking.

##### **A. Putkoch'u Myolch'ibokkum (Stir-Fried Anchovies with Peppers)**



##### **Ingredients :**

- 1/3 lb. Korean-style long green peppers
- 1/4 lb. dried anchovies
- 3 table spoon soy sauce
- 2 cloves garlic
- 1,1/2, tbs.. salad oil, sesame seed, threaded red pepper

##### **Method :**

1. Wash the small green peppers and drain. Remove the stems.
2. Trim the small dried anchovies carefully.
3. Slice the garlic.

4. Stir-fry the anchovies and garlic lightly in an oiled pan. Add the soy sauce, small amount of sugar, and then the green peppers and fry a little bit more.
5. As the ingredients are almost cooked, add the sesame seed oil and threaded red pepper and then mix well.

**Hint :**

1. Choose small-size dried anchovies. Fry the green peppers quickly in order to keep the green color.
2. Choose the long Korean green peppers (not spicy ones).

**B. Dried Squid and Radish-Strip Kimchi**



1. Soak dried squid, Korean radish strips, and chili pepper leaves in water for about 2 hours. Drain and squeeze out excessive water.
2. Cut the softened squid into 1/2 X 1 1/2" (1.5X4 cm) pieces.
3. Mix the squid, radish strips, and pepper leaves with red pepper powder, chopped garlic, ginger, green threaded onions cut in 1 1/2"(4 cm) lengths, pickled anchovy juice, and roasted sesame seeds. Season with sugar and salt.

### **C. Stir Fried Squid with Onions & Black Beans (4)**

#### **Ingredients :**

- 1 lb. squid
- 2 dried red chilies
- 2 tbsps Chinese salted black beans
- 2 tbsps dry sherry
- \_ tbsp sugar
- 1 tsp corn flour
- 2 tbsps oil
- 2 cloves garlic, peeled, and chopped
- \_ fresh ginger, peeled, and finely chopped
- 2 large red onions cut in half and thinly sliced
- A proper amount of salt and black pepper as preferred

#### **Method :**

1. Clean the squid and score the inside of the sac and wings in a criss-cross shape. Cut the sac into pieces about 1" by 2".
2. Soak the chilies in warm water for 10 mins. Drain, remove the seeds, and chop. Mash the black beans roughly, add the sherry and sugar, and stir in the cornflour.
3. Heat the oil in a wok over a high heat. When it starts to smoke, add the garlic, chili and, ginger, and stir fry for a few seconds.
4. Add the red onions and stir fry for about 2 mins until they turn brown and soft. Add the squid and stir fry for 30 seconds up to 1 minute until opaque and curled.
5. Stir the black bean sauce and then tip it into the wok. Stir the squid and onion and then simmer for about 1 minute until thickened. Serve immediately.

## **V. Consumer preferences, consumption habits, and expenditures on dried fishery products**

### **A. New Trends in the Consumers' Preference**

- 1 Increasing interest in natural foods - free of chemical additives and preservatives.
- 1 Preference for soft dried seafood products - 40 % water content in the dried fish is more popular than 10%.
- 1 Gradual increase in demand for fresh seafoods with increased per capita income.
- 1 To be more effective in commercial markets, focus on the use of dried seafoods as side dishes and snacks - especially for the accompaniment of wine and liquor. The use of these beverages is substantial in the Korean food and drink culture. Avoid focusing on the use of these dried products in main dishes even though this is more traditional.

Dried seafood products are seasonal consumer products. Dried Alaska pollock is mostly consumed during the winter season. It is also important during New Year and Thanksgiving day celebrations in the autumn when the family ancestral worship is being held, often with a fully set dinner table.

Overall, the growth in consumption of fish and fishery products has been flat in recent years. These products now account for less than 50 percent of the total national protein intake. Consumption of traditional food products, such as rice, has fallen. The consumption of food items such as bread, meat and dairy products has increased. These changes in eating habits have been caused by several factors including improved living standards, increased interest in westernized food, the convenience value of non-traditional foods products, and others. These changes are likely to continue and may intensify, as they are taking place mainly among the younger population in Korea. However, the

overall consumption of fish and fish products is still very high and is expected to remain at this level.

Though whole pieces of fish are preferable in the large-family system, fish portioned into smaller chunks or portions are more popular in the core-family system, especially among young married couples.

**<Table 8> Monthly Consumption Expenditure per Household by  
Commodities (1996)** **In thousand won**

	All cities		Seoul	
	All households	Salary & wage earners' households	All households	Salary & wage earners' households
Number of Sample households	5,233.0	3,252.0	1,130.0	668.0
Distribution of households	10,000.0	6,206.0	337.0	1,998.0
Persons per households	3.7	3.7	3.7	3.6
Earners per households	1.5	1.6	1.6	1.6
<b>Consumption expenditure</b>	<b>1,426.9</b>	<b>1,395.4</b>	<b>1607.5</b>	<b>1,529.6</b>
Food and Beverages	406.1	394.0	468.8	450.1
<u>Cereals</u>	<u>47.6</u>	<u>45.7</u>	<u>48.5</u>	<u>45.1</u>
<u>Meat</u>	<u>44.3</u>	<u>40.8</u>	<u>51.3</u>	<u>46.1</u>
<u>Milk and eggs</u>	<u>14.5</u>	<u>14.6</u>	<u>15.5</u>	<u>15.7</u>
<u>Fish and shellfish</u>	<u>36.2</u>	<u>33.5</u>	<u>36.5</u>	<u>32.9</u>
- Dried Alaska pollock	0.4	0.3	0.5	0.5
- Dried Yellow corvina	0.8	0.7	1.5	1.2
- Dried Anchovy	2.3	2.1	2.6	2.3
- Dried Cuttlefish(squid)	1.4	1.3	1.4	1.2
- Others(fresh fish & etc.)	32.3	29.1	29.5	27.7
<u>Vegetables and Seaweed</u>	<u>37.4</u>	<u>35.0</u>	<u>41.5</u>	<u>38.8</u>
- Dried Laver	1.8	1.8	1.8	1.7
- Others	35.6	33.2	39.7	37.1
<u>Fruits</u>	<u>30.5</u>	<u>28.5</u>	<u>34.2</u>	<u>31.4</u>
<u>Oil, fats and condiments</u>	<u>16.5</u>	<u>15.2</u>	<u>17.9</u>	<u>15.8</u>
<u>Bread and confectioneries</u>	<u>23.7</u>	<u>22.8</u>	<u>27.6</u>	<u>26.5</u>
<u>Soft Drinks</u>	<u>12.8</u>	<u>12.3</u>	<u>14.6</u>	<u>14.1</u>
<u>Alcoholic beverages</u>	<u>5.4</u>	<u>5.3</u>	<u>5.3</u>	<u>5.0</u>
<u>Meals outside the home</u>	<u>136.6</u>	<u>139.9</u>	<u>175.5</u>	<u>178.4</u>
- Korean meals	52.9	49.7	67.2	61.1
- Chinese meals	3.7	3.4	4.1	3.7
- Occidental meals	1.3	1.2	2.0	1.7
- Other meals	41.7	48.4	59.4	69.1
- Drinking	27.6	28.4	31.0	31.6
- Others	9.3	8.8	12.0	11.2
<u>Services</u>	<u>0.6</u>	<u>0.5</u>	<u>0.5</u>	<u>0.4</u>
Medical care	69.0	65.1	77.2	72.9
Education, culture and recreation	221.0	204.9	259.1	230.8
Transportation and communication	164.6	173.9	181.2	189.1
Other consumption expenditures	278.9	279.8	311.4	294.0

Source: Annual Report on The Family Income and Expenditure Survey in 1996 by  
National Statistical Office Republic of Korea

Note : The values of the dried fishery's consumption in restaurants are not included.

**<Table 9 > Interest Index of Natural Food by income, ages, and area (1993)**

<b>Income</b>	<b>Interest</b>	<b>Ages</b>	<b>Interest</b>	<b>Area</b>	<b>Interest</b>
Below 1 M Won	6.0	10s	6.1	Seoul	6.1
1 to 2 M Won	6.2	20s	6.2	Pusan	6.3
2 to 3 M Won	6.1	30s	6.1	Daegu	6.0
3 to 4 M Won	6.1	40s	6.2	Daejeun	5.9
4 to 5 M Won	5.7	50s	6.1	Kwangju	6.0
more than 5 M Won	6.1	60s	5.6		

Source : *The survey about consumer behavior and lifestyle by income increase in 1993*,  
The Korea Commercial Office

M : Million

Squid, sections of small Alaska pollock ('Nogari'), and other small dried fish are mixed with nuts and other snack items to be consumed with beer and liquor. As can be seen, dried seafood products are not mainly used for main-dish items in the home. Squid are very popular in Korea as an appetizer and meal supplement. In the beginning of the 1970's, squid were very expensive due to the shortage of fresh squid. At that time, file fish, a species that was not usually used for food, was seasoned and dried as a replacement for dried squid. It was a natural response that consumers, always sensitive to price, preferred the cheap seasoned and dried file fish. Small-sized Alaska pollock, mainly used for side-dish for beer, is also a preferred product.

## **VI. Consumer Preference**

### **A. Consumer willingness to try new dried fishery products**

Family unit consumers are very sensitive to product price and to health problems associated with food items. If a new dried fishery product can be characterized as a health food, consumers would consider purchasing it. If a product that is unfamiliar to Korean consumers is introduced, appropriate new recipes should be developed. These new products, as used in the recipes, should be properly seasoned with Korean traditional sauces in order to satisfy the taste of Koreans.

Korean, Japanese, and Chinese restaurants are quite familiar with dried seafood products. They will typically know and use a variety of recipes which are popular with the consumers. Also, like other restaurants, western restaurants use dried fishery products as side dishes for various types of drinks. Because salmon is considered to be a high class fishery product in Korea, it would be good to serve it as an appetizer for wine and whisky. For this reason, dried salmon could have opportunities in the Korean snack industry.

One market sector with increasing demand for dried fish products is the snack food industry. Some packaged snack foods that make use of dried squid and dried shrimp are very popular in Korea. An officer at the Yangyang Inland Water Institute, an organization that hatches and releases salmon into the wild, indicated in a telephone interview that the organization sells dried salmon at its tourist shop in Yanyang City. However, consumers did not buy as much dried salmon as he had expected. Nevertheless, he said that seasoned and dried salmon would be popular as an appetizer served with alcoholic beverages.

### **B. Consumer willingness to try imported products from America, especially dried seafood.**

U.S. fishery products have a reputation among Korean buyers for quality and performance. However, most Koreans tend to be very price conscious and often regard the U.S. label as indicating a product that is too expensive. Fishery products from China,

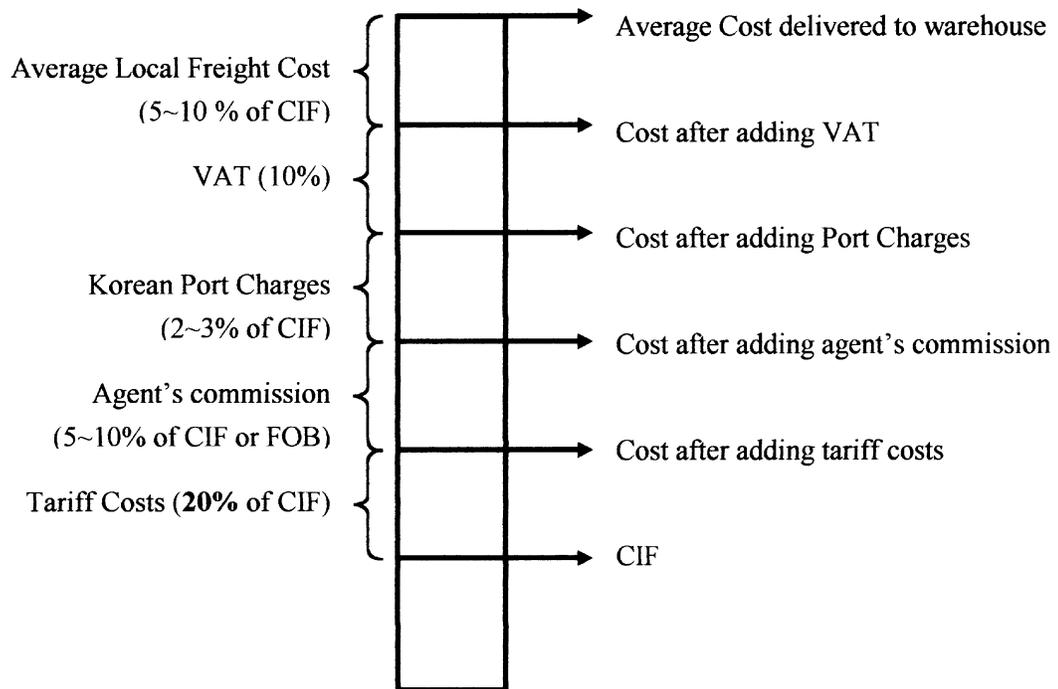
Russia, and elsewhere are frequently considered to be better buys even though their quality may be acknowledged to be inferior to that of the American item. Generally, family unit consumers are mostly loyal to local dried fishery products. Restaurants and the snack industry show much lower loyalty to local products primarily because they are able to reprocess and repackage the product - the new package not containing origin labeling for their end-consumers. A potential and loyal buyer of American dried seafood products would likely be health conscious, a member of the middle class, and a member of a smaller family.

## **VII. Korean dried fish industry trade margins and pricing information**

In accordance with the Uruguay Round Agreement, Korea lifted import restrictions on 77 agricultural, livestock, and fisheries products as of July 1, 1997. It is expected that the importation of cheap fishery goods will contribute a great deal to the establishment of price stability in Korea. If rapid importation of certain products drives the domestic fishing industry into a pinch, the government would then consider slapping adjustment tariffs on those specific imports.

As the prices of Korean dried fishery products are higher relative to most foreign products, supplying product to the national dried fishery trading business looks very promising. But the difference in price between the local dried fishery products and imported products is not the major factor, because local seafood products are frequently preferred by the consumers.

<Figure 3> Import Cost into Korea



## VIII. Packaging size and formats of local dried fishery products.

In contrast to the other sectors of the food processing industry, the packaging of dried seafood products has not been highly developed. In addition, packaging sizes have not been standardized for these products. Only some hypermarkets (warehouse type discount stores), department stores, and exporters use their own consumer packages for dried seafood products. Usually, dried fish products are initially packaged in large paperboard or cardboard boxes and retailed in plastic sacks and similar simple containers. Folding cartons and paperboard boxes are used extensively as containers in the industry.

The package sizes for snacks consisting of dried squid and dried shrimp vary from 50g to 100g.

<Table 10> Material of Package by Product,

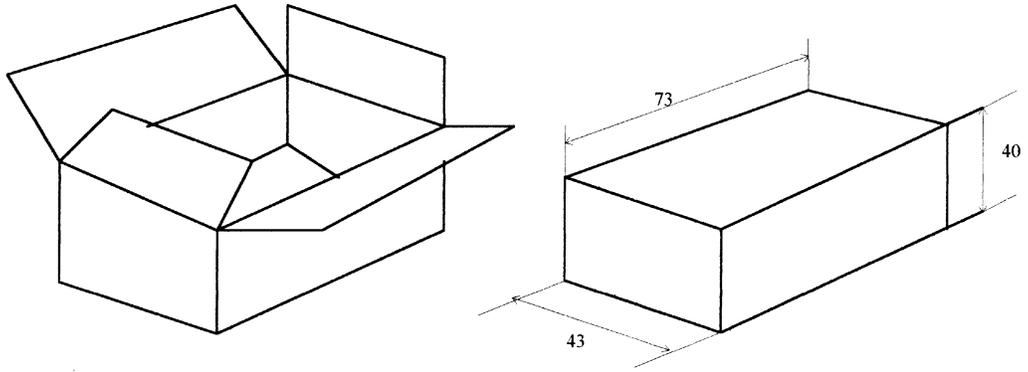
item	unit	Package by distribution levels	
		wholesales,	retail
<b>Dried anchovy</b>	1kg, 2kg, 3kg	paperboard	plastic sack / paperboard
<b>Dried cuttlefish</b>	10 heads	paperboard /cardboard	plastic sack
<b>Dried laver</b>	100 sheets*	paperboard /cardboard	plastic sack / paperboard
<b>Dried seaweed</b>	10 sheets**	paperboard /cardboard	plastic sack
<b>Dried shrimp</b>	1kg, 2kg, 3kg	paperboard /cardboard	plastic sack / paperboard

Note: there no standard packaging size.

\* dried laver's sheet size is 220mm x 250mm

\*\* dried seaweed's sheet size is 270mm x 700mm

<Figure 4> Paper board



**<Figure 5> Yellow Corvina**



**<Figure 6> Alaska pollock packaged with plastic sacks**



**<Figure 7> Dried Anchovy packaged in 3 kg box for consumer**



END