A Study on Enhancing the Demand for Non-Timber Forest Products : Focused on Consumer Research of Foods Processed from Jujube

Kim, Dae-Yun*, Park, Chul-Ju**, Jeong, Tae-Seok***

Abstract

While jujubes are mainly sold in dried forms as wholesome foods, sacrificial food and so on, processed foods from jujube are neither highly recognized nor in high demand. Hence, this study has proposed ways to enhance the demand for jujube processed foods and will help prepare the ground for efficient marketing strategies, based on the survey result on the pattern in which customers in Korea purchase jujube-processed foods. The conclusion for this study has been derived by researching the relevant literature and analyzing the relevant company data and customer survey results. The study implies the following points regarding enhancing the demand for jujube-processed foods.

First, long-term solutions are necessary. These may include establishing a technological system that can produce various foods processed from jujubes, and improving the customer accessibility in accordance with the changes in the retail environment. To implement these solutions, it is necessary to familiarize the customers with jujube-processed foods by securing a good sales network and through active promotion and advertising.

Second, systematic marketing strategies are needed, which may be applied in developing the products as well as distribution and promotion methods and prices that correspond with the changes in the customer environment and the different tastes for various age, gender and residential area groups.

Key words : forest products, jujube, jujube-processedfoods, distribution channels, marketing strategy, enhancing the demand

Ⅰ. Introduction

These days, with more and more people being interested in personal well-being, the demand for goods processed from local forest products is also on the increase. Hence, it is important to put forth multilateral efforts by actively developing these goods and creating a new demand. Among the forest products, jujubes are mainly sold in dried forms as wholesome foods, sacrificial food and so on. Although the size of jujube-processed food market is small, these foods are highly marketable wholesome foods.

Jujubes produced in Korea are divided into: the mudeung, geumseong, wolchool, etc. bred by the Fruit Crop Experiment Station; the bokjo(native stock of the Gyeongsang region); the boeundaechu(native stock of Boeun, Chungcheongbukdo), and so on. Jujubes have long been used medicinally in folk remedies and in the field of oriental medicine, and because of its excellent efficacy, they can also be used as alternative medicines.

Jujubes are mainly produced in Gyeongsan, Gunwi, Boeun, Cheongdo, Miryang, and 86% of Korea's jujubes are produced in these 5 districts. However, due to the low customer awareness, the suppliers' limited marketing strategies, and large imports of cheap jujubes from China, foods processed from non-timber forest products including jujubes are getting less and less competitive. This requires more aggressive and systematic marketing strategies. In addition,long-term development schemes are required to diversify the jujube-processed products, improve their qualities, enhance their local competitiveness through stage-by-stage marketing strategies, and continuously invigorate the local economy.

Hence, based on the result from the survey on the customers'purchase patterns for jujube-processed foods in Korea, this study has proposed ways to enhance the demand for jujube-processed foods and will help prepare the ground for efficient marketing strategies. The conclusion for this study has been derived by researching the relevant literature and analyzing the relevant company data and customer survey results. The study implies the following points regarding enhancing the demand for jujube-processed foods.

II. An inquiry into the preceding studies

1. The reality of processing non-timber forest products

1.1. The significance of non-timber forest products

Producing non-timber products overcomes the economic problems that originate from long-term investment on timber production and makes good use of the forest resources, improving the income

* Researcher, Korea Institute for Industrial Distribution, first author, Tel:010-4742-9752, E-mail: kdy6860@paran.com

** Associate Professor, Department of Business Administration, Sahmyook University, corresponding author, Tel; 02-3399-1557, E-mail: cjpark@syu.ac.kr

*** Assistant Professor, Department of Business Administration, Sahmyook University, co-author, Tel; 02-3399-1562, E-mail: bigstone@syu.ac.kr

situation of the forest owners and the local residents. Producing nuts, mushrooms, wild edible greens and medicinal forest products is a way of providing the public with safe and healthy forest products, increasing the local residents'income, and takes a relatively short time to derive income. It also comprises the tradition of Korea (Seo, 2009).

1.2. Changes in the production amount of non-timber products

Non-timber productscan largely be divided into fruits and nuts, mushrooms, wild greens, medicinal forest products, and each category includes extraction and cultivation. First, the fruits and nuts, which are the major income sources for farm and mountain villages, include chestnuts, walnuts, jujubes, pine nuts, astringent persimmons, ginkgoes, acorns, wild berries, wild grapes, gooseberries, Chinese peppers and Japanese peppers.

In 1980, 45,000 tons(worth £Ü45.9 billion) of wild fruits and nuts were produced. This value increased to 160,000 tons(worth £Ü391.3 billion) in 2000, and 186,000 tons(worth £Ü479 billion) in 2007. This increase may be attributed to the growths in the population and the national income, but may also be by the favor of combined efforts such as developing new varieties and saplings. Since the consumption of wild fruits and nuts will continue to increase, more effective cultivation methods, especially for high-yield varieties, should be developed. Wild greens include brackens, bellflowers, mountain herbs, fatsia shoots, groundsel, osmund and so on. In 1980, 1,500 tons(worth £Ü900 million) of wild greens were produced. This value surged to 25,600 tons(worth £Ü200.5 billion) in 2000 and to 40,900 tons(worth £Ü197.8 billion) in 2007.

1.3. Processed non-timber products

No data is yet available for the national-scale yield or sum of processed non-timber products. Hence, the statistical data for the number of processors or the quantity of the raw products consumed are not available. Yet, data for some items that havebeen processed are available. If you look at these data, you will be able to notice that the items have been processed to teas, alcoholic drinks, non-alcoholic beverages and dietary supplements.

1.4. Implications

1.4.1. Low processing standards and automation rates

As you can see from Table 1, the highest ratio of basic processed products implies a low processing standard. The low automation rate of processing jujubes is mainly attributed to the high cost of equipment. Processing equipments for forest products are expensive because they are made in small numbers. Hence, both technological development and financial support are vital in reducing the burden of installing these equipments.

1.4.2. The cost structure needs to be revised

For jujubes, the ratio of the raw material cost to the total processing cost has been shown to be lower than the average ratio for other farm products in farm product processors, meaning a relatively good mobility of jujubes. This is due to arelatively large proportion of jujubes produced in homes. However, since this proportion is likely to decrease if the jujube production increases, measures should be taken to lower the raw material costs in the long term and to maintain a stable supply of the materials.

The major difficulty in securing raw materials is a shortage of funds. Hence, in the short term, loans should be available to enable bulk purchase of raw materials.

The development and promotion costs for jujubes, which are higher than the average ratios for the other products implies a desirable cost structure for development of the jujube product processing industry. However, the high sales costs means that the products are not distributed smoothly. Hence, efforts should be made to improve the distribution structure for these products.

<Table 1> A list of processed non-timber forest products

Item	Processed products	Item	Processed products
Chestnut	marron glaces, puree, etc.	Mountain herb	beverages, pickles
Jujube	wine, tea	Corni	rice coating, drinks
Pinenut	tea, oil	Acantho -panax	drinks, beverages
Gingko	wholesome foods	Chinese matrimony vine	tea, drinks, porridge
Walnut	tea, cookies, oil	Eucommia bark	tea, drinks, extracts
Shitake	beverages, seasoning, fermented sauces	New shoot	powdered ash berry, oil
Pine mush-room	kimchi, pickles	Magno vine	tea, drinks, porridge
Wild grape	wines, juice	Bellflower root	tea, candies, pills
Rubus coreanus	drinks, tea, extracts, etc.	Yam	beverages, granules, drinks

Source: Lee & Choi (2009).

1.4.3. An inadequate technological development system

It has been discovered that the processing technology for non-timber forest products are self-developed. However, this self-development without a base signifies mere transformations of the processing methods. Hence, it is necessary to develop the technology in a more systematic way.

1.4.4. Low delivery rates to major discount stores

The low delivery rates of non-timber forest products suggest that an adequate distribution network must be established. The most promising way is to advance into major discount stores, which is the most popular with customers. Hence, it is necessary to seek ways to build business relations based on the trust between the manufacturers and distributors.

2. Trends in Korea's jujube industry

2.1. Features of jujubes

Jujube trees are fruit trees which fall into the category of buckthorns. There are largely two types of jujubes, Chinese and Indian jujubes. Compared to other fruits, jujube crops were originally easily affected by the weather, but improved varieties are recently being disseminated these days, enabling stable production. Since jujube trees also bear fruit quickly, they produce considerable numbers of jujubes 3~4 years after they are planted. Hence, the jujube production is likely to increase at a good rate.

<Table 2> Major varieties of jujubes in Korea and their characteristics

Type	Bred by (Year)	Characteristics	Applicable in
Mu-deung	FCES (1968~1980)	·Soft nuts and high in sugar. ·Good quality when fresh. ·Each tree produces many nuts, but many of them crach easily and easily rot when dry.	Whole country
Geum-seo-ng	FCES (1968~1980)	·Soft nuts with moderate sizes. ·High in sugar, and good quality when fresh. ·Each tree produces many nuts, but many of them crack easily.	Whole country
Wol-chool	FCES (1968~1980)	·Big, soft nuts, and high in sugar. ·Each tree does not produce many nuts, but few cracking or rots among the nuts.	Whole country
Bok-jo	Native stock from the Gyeongsang Province	·Big nuts. ·High in sugar. ·Irregular nut sizes between the trees.	-
Bo-eun	Native stock from Boeun, Chungcheong-bukdo	·Small nuts. ·Moderate sugar content. ·No seed inside the core.	-

Source: Park & Kim (2004).

2.2. Effectiveness of jujubes

There is a saying that "If you see a jujube and do not eat it, you will age quickly." There certainly is evidence for this saying. For thousands of years, jujubes have been known to prevent aging, and there is evidence for this on "Donguibogam"(Treasury Book of Eastern Medicine), "Hyangakjipseongbang", and "Bonchogyeongsoran", which say "Jujubes strengthen your stomach, enabling you to eat more comfortably. They also improve your pulses, protect your spleen, energize your body, and harmonize the qualities of all medicines." and "Continuously taking jujubes makes your body feel refreshed and prevents you from aging."

As introduced on such literature, the effectiveness of jujubes has been scientifically proved. Decocting jujubes strong relieves postnatal backaches, and is also effective in strengthening your body when you are pregnant.In addition, jujubes strengthen your internal organs, are diuretic, and have a tranquilizing effect. Further, their vitamin, dietary fibers, flavonoid and mineral contents prevent aging and have anticancer properties. Dietary fibers reduce the excess bile acid level in your intestines and hence the bile acid's toxicity. Bile is secreted in your body if you eat too much fat, and the acid content in the bile increases as a result, turning into cancer-causing agents by the germs inside the intestines. Jujubes contain the dietary fibers that absorb and discharge such cancer-causing agents. In addition, its beta-carotene decontaminates the harmful active oxygen inside your body, helping you to enjoy a long, healthy life.

2.3. Production status

According to the forest production statistics from Korea Forest Service, 10,249,590kg of jujubes were produced in 2009, which is the third highest among the major fruits and nuts in Korea, after astringent persimmons and chestnuts. Since 2006, the jujube production has continuously been on the increase, and in 2009, it showed a 2.3% increase from the previous year.

<Table 3> Production of major fruits and nuts in Korea

Item	Yield(kg)	
	2008	2009
Astringent persimmons	92,349,789	94,052,974
Chestnust	75,170,784	75,910,795
Jujubes	8,722,526	10,249,590
Pine nuts	2,593,102	2,750,613
	1,160,013	2,416,595
Chestnuts	979,003	1,221,844
Total	180,975,217	186,602,411

Source: Korea Forest Service(2010).

Jujubes are mainly produced in Gyeongsan, Gunwi, Boeun, Cheongdo, Miryang, and 86% of Korea's jujubes are produced in these 5 districts.

<Table 4> Major producing areas of jujubes

City/County	Yield(kg)	%	Production sum(won)
Gyeongsan	4,073,443	39.74	26,477,379,500

2.4. Distribution and process statuses

2.4.1. Distribution status

Jujubes are mostly harvested in mid-September and are released into the market until the following April. They are inexpensive during the period between September and November, the period in which a large proportion of them are released, and have relatively high prices from December until the next harvest as fewer of them are released. The producers release the jujubes either through dealers or they sell them directly to wholesalers. The wholesalers then sell them to retailers or customers. Since jujubes have relatively small supply and demand, the demand depends heavily on the changes in the production. Each jujube has the name of the place in which it was produced. Jujubes produced in Gyeongsan(called "Gyeongsancho") are

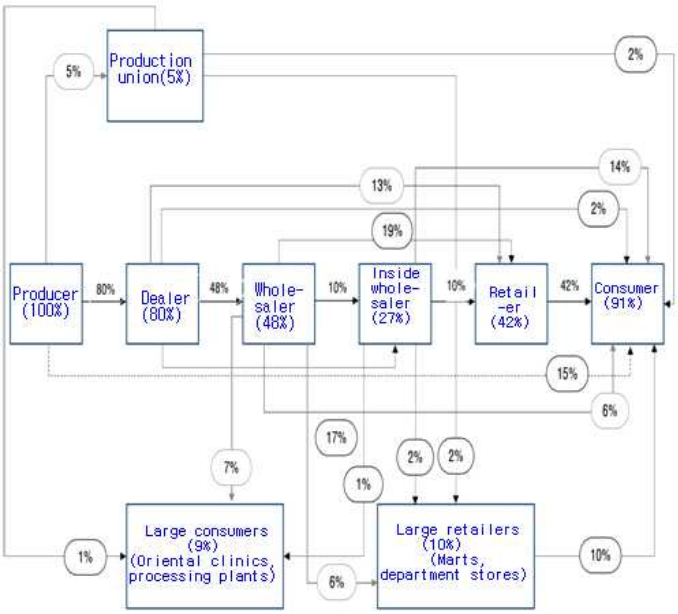
large and have small seeds, and are used in traditional respect ceremonies held after the wedding ceremony. "Bonghwacho" and "Jibangcho" jujubes are mainly used as medicinal herbs, and the demand for these jujubes in medicinal use is more than 60%. Most jujubes are distributed via Seoul, Gyeongsan, Yeonsan, Geumsan, Miryang, and Gyeongsan and Boeun have control over the jujube market. Yeonsan,a small village in Nonsan, Chungcheongnamdo, are famous as a trading center of jujubes from all over Korea.

More than 90% of Jujubes are distributed in dried forms, and fresh jujubes are only distributed for 20 days around the Korean Thanksgiving Day(Aug. 15 on the lunar calendar. Falls between early September and early October every year.). Most jujubes are sold in accordance with the multilevel chain, and only a small proportion are sold directly in small scales.

<Table 5> Jujube distribution rates by their routes

	Direct	Dealer	NACF	Retailer	Wholesaler	Others
Korea	26.6	47.7	2.2	4.4	9.7	9.4
Chungbuk	67.1	2.9	-	10.0	7.6	12.4
Gyeongbuk	12.1	64.4	3.2	2.7	8.9	8.7
Gyeongnam	43.87	25.4	-	5.4	16.2	9.2

Source: Jang et al. (2009).



Source: Jang et al. (2008).

<Figure 1> Distribution structure of jujubes

2.4.2. Distribution status

Starting with the development of jujube beverages, the jujube processing industry grew rapidly since the late 1990s, the industry has now overexpandedand the annual sales of jujube beverages are in the region of £Ü120 billion in 2009. In the same year, it was estimated that there were 53 jujube-processing companies, 33 of which were producing jujube-processed foods, and these 33 companies were mostly in Gyeongsangbukdo, and in and around Seoul.

<Table 6> Number of jujube-processing companies

Regions	Number of processors	Number of cosmetics manufacturers	Number of household goods manufacturers
Seoul	5	-	5
Total	33	5	15

According to Huh et al.(2010)'s data(for periods until 2007), for jujubes, the ratio of the raw material cost to the total processing cost was shown to be 51.3%, which was lower than the average ratio for other farm products in farm product processors. However, the ratio of their sales costs was higher and the promotion cost ratio was significantly lower.

<Table 7> Ratio of each area of costto the total processing cost

	Material costs	Development costs	Sales costs	Promo-tion costs	Others
All	49.2	4.5	12.2	5.3	28.0
Shiitakes	54.3	4.7	6.7	5.6	28.7
Medicinal products	57.5	2.5	8.0	7.5	24.5
Fruits and nuts	46.4	10.0	12.9	4.7	26
Wild edible greens	43.3	5.3	16.7	5.2	29.5
Chestnuts	57.9	2.0	7.8	2.0	30.3
Astringent persimmons	46.1	4.8	14.7	5.6	28.8
Jujubes	51.3	5.0	19.5	2.5	21.7
Others	47.6	1.0	7.3	7.4	34.7
Average for all farm produce processors	64.5	1.0	5.6	1.3	27.6

Ⅲ. Customer survey results and their implications

1. Collecting samples for the survey

To propose measures to enhance the demand for jujube-processed products, this survey has been done on men and women living in Korea and aged 20 or above. The survey was done to investigate the purchase patterns and intentions of 310 customers in various parts of the country. Postal surveys, e-mails and face-to-face interviews were used as the methods of the survey.

<Table 8> Survey outline

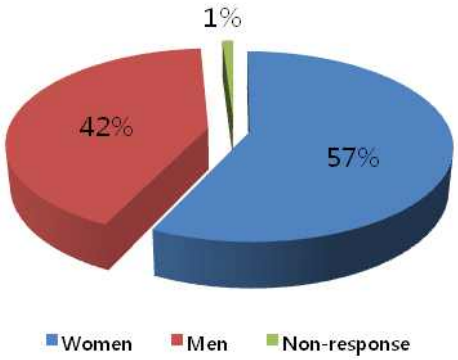
Data	Details
Pollees	Men and women aged 20 or above
Sampling method	Random
Survey methods	Postal survey, e-mails, face-to-face interviews
Duration	October. 1~20. 2010(20 days)
Sample number	310

Each questionnaire use in this survey were formed of 3 areas: general characteristics of the respondent, his/her preference and purchase pattern for jujube-processed foods, future intention to purchase these foods. For the ease of the survey, most questions were multiple choice, from which you can choose one or more answers.

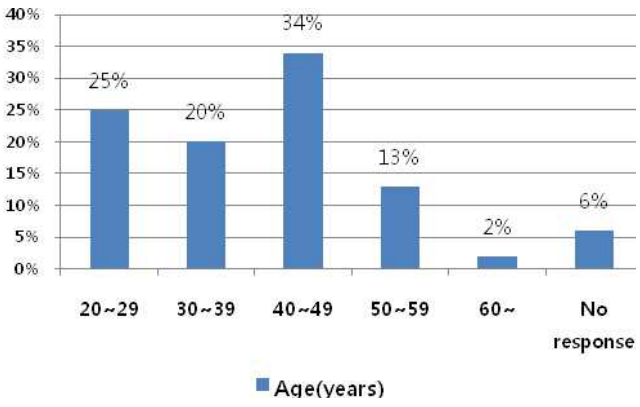
2. Survey results

2.1. General characteristics of the participants

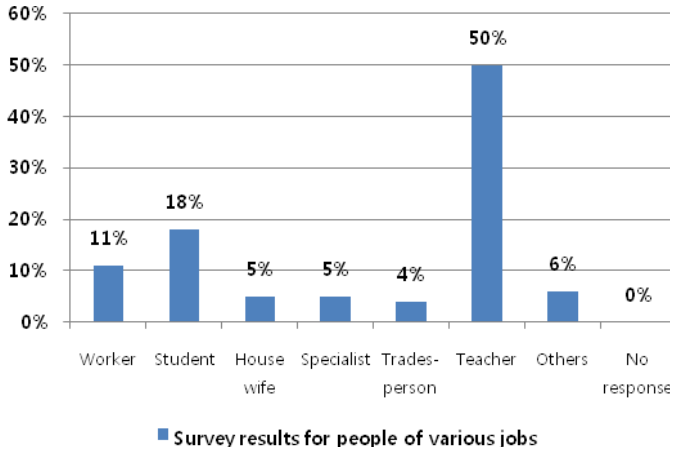
Among the 307 respondents, which excludes 3 people who did not respond to the survey, 42.0% were men and 57.0% were women. 34.0% of all the respondents were in their 40s, 25.0% in their 20s and 20.0% in their 30s. If you look at their jobs, teachers accounted for 50.0% of the respondents, 18.0% were students, and 11.0% were company workers. Looking at their areas of residence, 53.0% were living in and around Seoul, and 24.0% were living in the Chungcheong area.



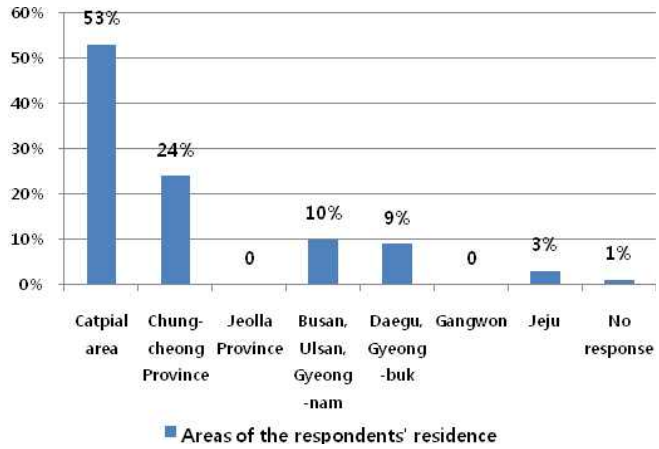
<Figure 2> General characteristics of the participant(sex)



<Figure 3> General characteristics of the participant(age)



<Figure 4> General characteristics of the participant(job)

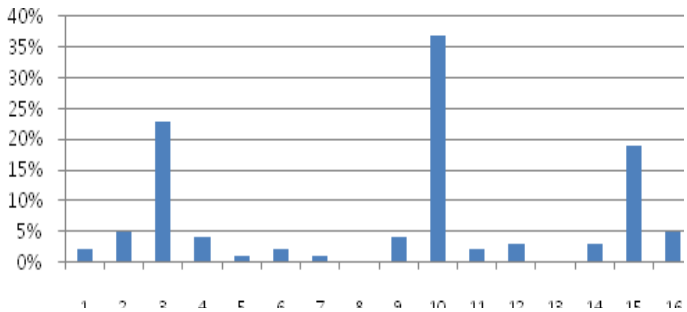


<Figure 5> General characteristics of the participant(residence)

2.2. Preferences and purchase patterns for jujube-processed foods

2.2.1. The first striking areas for producing jujubes or their processed foods

For the respondents, the first striking areas for producing jujubes or their processed foods were Gyeongsan(37%) and Boeun(23%), which were much higher than any other areas.



Notes:

1. Gyeryong 2. Nonsan 3. Boeun
4. Okcheon 5. Cheongwon 6. Cheongju

7. Gokseong 8. Wanju 9. Miryang
10. Gyeongsan 11. Cheongdo 12. Cheongsong
13. Yeongdeok 14. Bonghwa 15. Others
16. No response

<Figure 6> The first striking areas for producing jujubes or their processed foods

2.2.2. Preference for jujube-processed foods

The largest number of respondents preferred jujube-processed foods in the order of jujube beverages => jujube tea => foods with dried jujubes. The second largest number of respondents preferred jujube beverages => jujube tea => Korean traditional cookies with jujubes, and the third largest number of jujube tea => jujube juice => foods with dried jujubes. They also preferred jujube tea, foods with dried jujubes and Korean traditional cookies with jujubes to the other jujube-processed foods.

<Table 9> Preference for jujube-processed foods

Preference	First preference	Second preference	Third preference
Jujube beverage	46	31	12
Jujube soup	1	1	3
Jujube piles	1	2	2
Dried jujubes	12	10	11
Jujube ball cakes	3	8	8
Dried jujubes	2	15	10
Jujube vinegar	0	0	1
Jujube tea	41	24	15
Jujube bread	2	6	9
Jujube juice	3	2	13
Others	0	0	0

2.2.3. Information sources for purchase

The largest number of respondents responded that they decided to buy jujube-processed foods through the information sources in the order of TV/radios => other people => the internet. The second largest number of respondents were affected by the internet => other people => TV/radios, and the third largest, by newspapers/magazines => other people => TV/radio. Hence, it can be concluded that the respondents mainly gained information on jujube-processed foods from televisions, radios, the internet, newspapers, magazines, and recommendations from other people, before buying them.

<Table 10> Survey outline for the information sources

Source	No.1	No.2	No.3	Source	No.1	No.2	No.3
TV/Radio	86	30	32	Campaigns	1	9	10
Internet	39	73	26	Promotion events	26	25	31
Newspapers/Magazines	17	26	45	Others	10	3	6
Other people	53	36	40	No response	78	108	120

2.2.4. Purchasing places

The largest number of respondents responded that they purchased jujube-processed foods at places in the order of large discount stores => traditional markets => supermarkets. The second largest number of respondents purchased them at supermarkets => large discount stores => traditional markets, and the third largest, at traditional markets => large discount stores => local specialty stores. Hence, it can be concluded that customers prefer large discount stores, supermarkets and traditional markets, and only few of them buy jujube-processed foods on the internet or from the TV home shopping network.

<Table 11> Purchasing places

Purchase place	No.1	No.2	No.3	Purchase place	No.1	No.2	No.3
Discount stores	111	24	25	Call sales	0	3	2
Supermarkets	19	52	19	Traditional markets	20	23	30
Convenience stores	10	14	11	Specialty stores	5	4	8
Internet(TV home shopping network)	15	15	18	Specialty product showrooms	12	18	24
Wholesalers	8	15	20	Others	8	0	3
Dept. stores	4	19	17	No response	98	123	133

2.2.5. Reasons for purchase

The largest number of respondents chose "inexpensive prices"(16.5%) as the reason for purchasing jujube-processed foods, followed by the accessibility of purchase(15.5%) and good quality of the foods(11.3%).

<Table 12> Reasons for purchase

Reason	Ratio	Reason	Ratio
Inexpensive prices	16.5%	Accessibility	15.5%
Trust in the seller	7.1%	Good quality	11.3%
Various promotion events	5.2%	Others	4.2%
Wide variety of the products	3.9%	No response	36.5%

2.3. Intentions to purchase jujube-processed foods in future

2.3.1. Purchase incidents in the last 3 months

The survey result shows that 24% of the respondents bought jujube-processed foods at least once in the last 3 months, and 75% did not. While a higher ratio of the respondents in their 20s appear to have bought the processed foods, 62.3% of those aged 30~59 responded that they did not buy any of those foods in the 3-month period. These imply that customers do not buy jujube-processed products very often.

<Table 13> Purchase incidents

Purcha-sed	Respon-dents	Ratio	Age group		Purchased		Total
					Yes	No	
Yes	75	24%	20~29	Frequency	40	35	75
				Ratio(%)	12.9	11.3	24.2
			30~39	Frequency	15	69	60
				Ratio(%)	4.8	22.3	27.1
No	232	75%	40~49	Frequency	13	80	93
				Ratio(%)	4.2	25.8	30
			50~59	Frequency	6	44	37
				Ratio(%)	1.9	14.2	16.1
No response	3	1%	60~	Frequency	1	4	5
				Ratio(%)	0.3	1.3	1.6
Total	310	100%	No response	Frequency	3		3
				Ratio(%)	1.0		1.0

2.3.2. Purchase intentions in future

74.7% of the respondents who did buy jujube-processed products in the past 3 months responded that they would continue to buy them at the current ratio. 17.3% said thatthey would increase this ratio, and 8% responded that they would buy a smaller ratio in future. To summarize, it has been discovered that they would continue to buy jujube-processed foods, but would mostly remain the current ratio.

<Table 14> Future intention to purchase among previous purchasers

Future intention to purchase	No. of respondents	Ratio
Will buy a larger ratio of jujube-processed products.	13	17.3%
Will maintain the current ratio.	56	74.7%
Will buy a smaller ratio.	6	8%
Total	75	100%

Among those who did not buy any of the products in the past 3 months, only 28.4% responded that they would continue not to buy them, and 58.2% said that they are considering buying some jujube-processed products in future.

<Table 15> Future intention to purchase among non-purchasers

Future intention to purchase	No. of respondents	Ratio
Will buy jujube-processed products.	135	58.2%
Will not buy jujube-processed products.	66	28.4%
No response	31	13.4%

2.3.3. Measures to promote consumption of jujube-processed products in future

The largest number of respondents responded that it is necessary to "develop various products => more actively advertise and promote the products => expand the distribution networks"to promote consumption of jujube-processed products in future. The second largest number of respondents chose "more active advertising and promotion of the products => expanding the distribution networks => developing various products", and the third largest was "expanding the distribution networks => reducing the prices => more active advertising and promotion of the products." Hence, it has been concluded that developing various products, more active advertising and promotion of the products, expanding the distribution networks and reducing the prices are important measures to activate consumption of jujube-processed foods.

<Table 16> Measures to promote consumption of jujube processed products in future

Measures to promote consumption	No. 1	No. 2	No. 3
Developing various products	121	54	29
Reducing the prices	10	38	56
More active advertising and promotion	86	75	38
Better packaging and designs	7	11	16
Expanding the distribution networks	31	60	74
Building a continuous supply system	6	7	25
Others	4	0	3
No response	45	65	69

2.3.4. Expected development of new jujube-processed products

34% of the respondents chose that they expected new jujube beverages and teas to be released into the market, and 29% responded that they expected new wholesome and diet foods to be released in future, followed by 10%, who expected that more Korean traditional foods would be developed.

<Table 17> Expected types of jujube-processed products in future

Expected types of new jujube-processed products	Respon-dents	Ratio
New beverages and teas	106	34%
New wholesome and diet foods	89	29%
Cosmetics	22	7%
Bakery products	20	6%
Korean traditional foods	30	10%
Dried foods(e.g. cookies)	18	6%
Others	8	3%
No response	17	5%

3. Implications

It has been discovered that customers prefer jujube beverages, tea, juice, and foods that have dried jujubes, and mainly gain information on jujube-processed foods from televisions, radios, the internet, newspapers, magazines, and recommendations from other people, before buying them. In addition, customers tend to buy

jujube-processed products from large discount stores, supermarkets and traditional markets, and they buy these products due to their inexpensive price, the accessibility, and the good quality.

The survey result shows that 24% of the respondents bought jujube-processed foods at least once in the last 3 months, and a low ratio of the respondents aged 30~59 bought jujube-processed foods. On the other hand, among those who did not buy any of the products, a high proportion(58.2%) responded that they are considering buying some jujube-processed products in future. It has also been concluded that developing various products, more active advertising and promotion of the products, expanding the distribution networks and reducing the prices are important measures to activate consumption of jujube-processed foods.

As the demand for foods processed from local forest products is increasing, the following implications have been deduced through the market survey on customers.

While Jujube-processed foods that are distributed and sold in the market have various types and brands, they are not highly recognized among customers. Hence, although there may be regional limitations, regions producing jujubes should produce and supply jujube-processed products by enhancing the manufacturing facilities. They should also try to improve the public awareness of the products by promoting the products through online and offline means of communication. In addition, they shouldalso build various purchase channels to make it easier to buy the products.

IV. Measures to enhance the demand for jujube-processed products

1. Basic directions

Precedent studies suggest that a high proportion of Jujubes are distributed in dried forms. While the ratio of the raw material cost to the total processing cost for jujubes has been shown to be lower than the average ratio for other farm products, the sales costs are rather high, meaning that jujube-processed products are not distributed smoothly. Hence, it is important to improve the distribution channels for jujubes. The low delivery rates of non-timber forest products to large discount stores suggest that an adequate distribution network must be established.

After the customer survey, it can be implied that customers only preferred jujube tea and beverages, and foods with dried jujubes, and few customers preferred other jujube-processed foods. Although a low ratio of the respondents aged 30~59 bought jujube-processed foods, a relatively high proportion of those who did not buy any of the products responded that they are considering buying the products in future. It has also been concluded that developing various products, more active advertising and promotion of the products, expanding the distribution networks and reducing the prices are important measures to activate consumption of jujube-processed foods. The following measures should be taken to enhance the demand for jujube-processed foods.

First, in terms of product strategy, functional, customer-oriented products, as well as products using the region's resources, should be developed. Second, in terms of price, the products'prices should be set in a way that maximizes the products' values for their prices. Third, in terms of distribution strategy, new distribution channels should be developed while enhancing the existing distribution channels. Finally, in terms of promotion strategy, the public awareness and preference of jujube-processed foods should be enhanced by using integrated marketing communication strategies to target markets.

2. Measures to enhance the demand

To enable successful market entry of jujube-processed products and to enhance the demand for these products, clear goals are essential. Based on the implications derived in precedent studies and our customer survey, the measures to enhance the demand has been prepared, which are as follows.

2.1. Developing various products and reinforcing the distribution channels

2.1.1. Developing various products

Currently, a high proportion of jujubes are produced in dried forms, risking a decline in their values. With reference to the customer survey, the products must be diversified by developing more types of jujube beverages and teas, wholesome and diet foods, cosmetics, traditional foods(such as Korean traditional cookies and rice balls), which will help meet customers'desire. In addition, competitive resources should be selected from the regionally-specialized resources in jujube-producingareas, to make good use of these resources in terms reinforcing the distributive channels.

2.1.2. Financial support for technological development an improvement in the processing standard

It has been discovered that the processing technology for Forest products including jujubes are of a low standard and are self-developed. This self-development without a base signifies mere transformations of the processing methods(Kang, 2009). Hence, it is necessary to develop the technology in a more systematic way. Since processing equipments for forest products are expensive, both technological development and financial support from the government are needed in reducing the burden of installing these equipments.

2.1.3. Establishing a distribution strategy that reflects customers' purchase patterns

Long-term solutions are necessary. These may include establishing a technological system that can produce various foods processed from jujubes, and improving the customer accessibility in accordance with the changes in the retail environment. The customer survey shows that customers tend to buy jujube-processed products from large discount stores. However, the delivery ratios of most foods processed

from forest products including jujubes are relatively low. The most promising way is to advance into major discount stores, which is the most popular with customers. Hence, it is necessary to seek ways to build business relations based on the trust between themanufacturers and distributors(Kim et al., 2007).

2.2. Enhancing the marketing capability

2.2.1. Selecting target markets in accordance with the customers' interests

Marketing strategies should be devised by selecting the optimum target markets through systematic analysis of the market environment for each field, and by establishing more competitive differentiated positioning tactics(Chae & Kim, 2010).

① Health-oriented customers

These customers are mainly aged 30~59 years and are interested in eco-friendly products that are good for their health. They are also interested in safe and reliable food.

Customers oriented to traditional tastes

These customers may seek foods that have modern shapes while retaining the local memories.

③ Convenience-oriented customers

Convenience-oriented customers are young office workers and students in and around Seoul, who may seek convenient yet healthy foods.

④ Customers seeking goods for gift purposes

These customers are middle-class customers aged 30 to 59 years, and may seek differentiated and meaningful presents suchas those given on national holidays or anniversaries, or may seek presents with a wide variety, elegant packaging or good values.

2.2.2. Enhancing the public awareness through internet marketing

The development in the internet and increases in online purchases has resulted in more customers checking the reliability of enterprises and products. Hence, a firm ground for reliable online sales should be established and effective ways to promote the products should be sought(Lee et al., 2009). Because product information on online blogs and cafes are more reliable than that on conventional advertisements, and have a great ripple effect, it is important to make good use of these to promote sales of the forest products.

2.2.3. Promotion strategies to improve sales

The survey result showed that customers regard advertising and promotion as important factors in enhancing the sales. To increase the demand for jujube-processed foods and increase their sales, the following promotion strategies are needed. First, jujube-processing enterprises should break away from relying on dried jujube sales and encounter various buyers and customers, to secure new distribution channels for new products. Second, the enterprises should familiarize customers with their products by advertising them on the TV home shopping network(internet shopping malls) and bringing out the products on free-sample stands in large discount stores. Third, by taking account into the regional characteristics of jujube-producing regions, a systematic connection between the processing facilities, exhibition halls, education centers for jujubes should be established, developing them into an interactive tourist industry. Finally, it is widely known that food processed from forest products grown in Korea has a better quality and is healthier and safer than those imported from overseas. Jujubes should also be promoted based on these advantages.

V. Conclusion

Based on the result from the customer survey, this study suggests measures to enhance the demand for jujube-processed products and to prepare the groundwork for efficient marketing strategies. Since jujubes are highly effective in maintaining good health, they are used almost as commonly as licorice roots in herbal medicine. Although they are mainly sold in dried forms as wholesome foods, for sacrificial use and in herbal medicine, the public awareness of or demand for jujube-processed products is not yet high. Hence, some solutions have been suggested in this study to overcome such problems.

First, long-term solutions are necessary. These may include establishing a technological system that can produce various foods processed from jujubes, and improving the customer accessibility in accordance with the changes in the retail environment. To implement these solutions, it is necessary to familiarize the customers with jujube-processed foods by securing a good sales network and through active promotion and advertising. Second, systematic marketing strategies are needed, which may be applied in developing the products as well as distribution and promotion methods and prices that correspond with the changes in the customer environment and the different tastes for various age, gender and residential area groups.

There are some limits to this study. First, the customer survey mainly used preference identification and simple analysis of frequencies, to identify customers'purchase patterns by studying the market trends, and the conclusion was derived from the survey result which focused on analyzing the market environment. Without studying the real state of the jujube-producing regions and the producers, or analyzing the difficulties and problems that may arise in producing and selling jujube-processed foods, it is not possible to establish an accurate marketing strategy to increase the demand for jujube-processed foods. Second, although it is necessary to select target markets and to devise a positioning strategy, the survey did not use cross analysis or inferential statistics(or correlation analysis), but only used frequency analysis. In this case, the survey result may be used as preliminary data in devising marketing strategies, but are not sufficient to use in more detailed areas.

In future studies, it will be necessary to investigate methods and study concepts that can supplement the limits of the measures suggested in this study. Detailed studies and surveys on processing companies(including producers), as well as customers, shall greatly

help in enhancing the demand for jujube-processed products. In addition, these studies may also be used as the preliminary data in improving the systems related to processing and distributing forest products, and in expanding the government support to promote the industry.

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