

## Analysis of Consumer Behavior toward and Preferences for *Prunus mume* (Maesil), the Chinese Plum

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### 매실에 대한 소비자 선호 및 소비행태분석

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#### Abstract

We sought to define the main motivational factors promoting consumption of *Prunus mume* products. We surveyed both specialized high-volume consumers and public consumers, and focused on consumption of and preferences for *Prunus mume* and *Prunus mume* products. We investigated how products were preferentially consumed, purchase experience, purchase location, purchase price, consumption experience, factors important in a purchase decision, preference factors, dissatisfaction factors, consumption outlook, comments on new processed foods, and activation of consumption. A total of 534 responses were received and data were analyzed using the SAS program (Version 9.1) of the Frequency test; Chi-square test was used to detect significant factors. A greater percentage of high-volume(compared with low-volume) consumers processed personal products at home. The public consumer tended to buy commercial products. However, public consumers who were older, who had higher incomes, and who were heads of households, tended to both buy commercial products and to prepare foods at home. The common purchase methods used by high-volume consumers were internet and direct marketing, but the public consumer frequented department stores and hypermarkets. High-volume consumers observed that commercial products were expensive, and such consumers seemed to be particularly cost-sensitive. The decisive factor triggering purchase decisions in high-volume consumers was the geographical origin of the fruit, whereas the public consumer was more concerned with taste. In public, positive factors were that the product was good for health and had a pleasant taste. Some of those surveyed complained of a lack of variety in *Prunus mume* products and that the amount of *Prunus mume* in certain products was low. To promote and increase consumption, convenient-to-eat products with healthy images are needed.

**Key words :** *Prunus mume* products, preference, high-volume consumer, public consumer, household characteristics

#### Introduction

Since 2000, the demand for the *Prunus mume* resulted in farmers increasing harvesting areas and production (1). People became more interested in supplements, and they started taking care of their health and nutrition more. In 2002, *Prunus mume* farmers harvested 2,605 hectares and produced 18,547 tons. By 2007, the harvesting areas rapidly increased

to 3,277 hectares and production increased to 27,089 tons. In 2000, manufacturers used 5,490 tons and utilized 72.7% of all harvested *Prunus mume* for commercial products but there was a decline over time (2). In 2008, *Prunus mume* manufacturers were producing 1,359 tons and most of the products created were for beverages, i.e. alcohol, and juices (3).

Overall, *Prunus mume* is considered a healthy supplement due to its ability to help with digestion and stress relief (4). In addition, *Prunus mume* also facilitates antiaging (5), and skin and liver detoxification and recovery has been known

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to be effective (6). For these reasons, recent research on biological activities of *Prunus mume* and *Prunus mume* extracts for antibacterial researches are actively conducted (7-8). Researches with a variety of *Prunus mume* utilization continues to be studied; such as “Domestic industry for the utilization of *Prunus mume*, and processing technology on the development of functional materials.” (9). Environment of *Prunus mume* industry and countermeasures research on a variety of *Prunus mume* related directions have been studied (10).

The ultimate goal of the research is the increasing consumption of *Prunus mume* product. As a result, *Prunus mume* consumption must be further analyzed to understand consumer motivation to determine *Prunus mume* purchasing. Research of *Prunus mume* products and its utilization of consumer preferences, purchasing behavior and purchase decision factors guides current research development (11-13). In this paper, there are two distinguishing aspects analyzed. First, the industry of *Prunus mume* and *Prunus mume* products was focused on throughout this research paper. Secondly, the high-volume and the public consumer were compared in this survey. By comparatively analyzing the consumer behavior and preferences of the groups with high and low interest in *Prunus mume*, we tried to find important motive and other factors that encouraged consumption.

## Materials and Methods

### Survey and investigation

To compare their consumption behavior of *Prunus mume*, consumers divided from high-volume and public consumer base were surveyed. In 2010, there was a June 5th to 6th *Prunus mume* festival in Gwangyang where conducted personal interviews with 255 participants, considered as high-volume consumers. In the same year, June 10th to the 20th, a simple random sample survey was conducted on public consumers (279 participants). As a result, the total number of participants was 534. Prior to this survey, 50 participants were chosen for preliminary testing. From this preliminary testing, imperfect questions were eliminated from the final survey used. On the other hand, some of the surveys were not fully completed resulting in some insufficient/inappropriate data.

### Contents and Procedures of the Research

The research contents were consisted of the participant's public information; preference of product knowledge, and

actual consumption of *Prunus mume* and *Prunus mume* products. public information of the participants includes the gender, age, occupation, education, household income, household head, type of housing, and residential areas. Age, education, household income, household head, and the type of housing were most important. Knowledge and consumption pattern of *Prunus mume* was used to find out product consumption, purchasing experience, the purchase path, questions about the price was also collected. Also *Prunus mume* products consumption was used to evaluate consumer preferences and experience, the factors of purchased decision, preference factors, and including dissatisfaction factors were included. In addition, customer opinion was tabulated regarding the future willingness of consumption, new food products, and how to stimulate purchasing. The questionnaire allowed for multiple choice questions, multiple answer questions, and written answers to questions. These questions were completed after preliminary testing was conducted and repeated to improve error correction and testing procedure.

### Methods of Analysis

The data was analyzed using SAS 9.1 program. High-volume and public customers were compared and analyzed. Results were tabulated using the Frequency test, and Chi-square test to derive significant results.

## Results and Discussion

### public Information of Survey Participants

The results from the public characteristics of subjects are shown in Table 1. Of the 534 participants surveyed, 255 (47.8%) of the consumers were high-volume customers, 279(52.2%) as public consumers respectively. The gender of the participants were 254(48.7%) females, and 268(51.3%) males. Participant's ages were grouped into tiers starting in their 20s; 109(20.8%), 30s; 120(22.9%), 40s; 148(28.3%), and 50 and over; 146 (27.9%). Interestingly, the Korea population is similarly distributed(14). The education of the participants started with high school graduates and below; 122(24.6%), college students; 136(27.4%), college graduates and above; 239(48.1%). The average monthly income groups started at 2 million won and below; 94(19.3%), 2 -3,000,000 won; 138 (28.3%), 3-4,000,000 won; 114(23.4%), 4-5,000,000 won, 67(13.8%), and more than five million won or more; 74(15.2%) were investigated. Note that in June 2010, the average household income of urban workers was

4.28 million won (4 people as one household) (14). Households with participants that had 1 family member; 37(7.3%), 2 members; 52(10.2%), 3 members; 115(22.6%), 4 members; 211(41.5%), 5 members or more; 94(18.5%). The average household head is 2.9 persons in Korea(14). The type of housing was examined by Apartment type; housing 273(52.6%), public housing 178 (34.3%), multi-family and villa 68(13.1%).

**Table 1. public characteristics of subjects**

		unit(N, %)		
Variable	Category	high-volume consumer	public consumer	Total
Gender	Female	116(47.7)	138(49.5)	254(48.7)
	Male	127(52.3)	141(50.5)	268(51.3)
Age	20-29	35(14.3)	74(26.5)	109(20.8)
	30-39	33(13.5)	87(31.2)	120(22.9)
	40-49	77(31.6)	71(25.5)	148(28.3)
	≥50	99(40.6)	47(16.9)	146(27.9)
	Under high school	90(40.9)	32(11.6)	122(24.6)
Education	University	53(24.1)	83(30.0)	136(27.4)
	Beyond university	77(35.0)	162(58.5)	239(48.1)
	<200	37(17.5)	57(20.7)	94(19.3)
Income (10,000 won)	200-299	71(33.7)	67(24.3)	138(28.3)
	300-399	58(27.5)	56(20.3)	114(23.4)
	400-499	23(10.9)	44(15.9)	67(13.8)
	≥500	22(10.4)	52(18.8)	74(15.2)
	1	9(3.9)	28(10.1)	37(7.3)
Family	2	32(13.7)	20(7.3)	52(10.2)
	3	39(16.7)	76(27.5)	115(22.6)
	4	103(44.2)	108(39.1)	211(41.5)
	≥5	50(21.5)	44(15.9)	94(18.5)
	Apartment	113(47.1)	160(57.4)	273(52.6)
Housing form	Housing	117(48.8)	61(21.9)	178(34.3)
	Multi-family housing	10(4.2)	58(20.8)	68(13.1)
	Total	255(47.8)	279(52.2)	534(100)

#### Awareness and Consumption situation of *Prunus mume*

The results from perception and consumption for *Prunus mume* are shown in Table 2. Surveys on how to eat *Prunus mume* showed that 82.9% of high-volume consumers manufactured products in their own home, and 55.2% of public consumers bought commercial products. 69.8% of high-volume consumers responded yes to purchase *Prunus*

*mume* due to experience, while 55.2% of public consumers said no. A higher percentage of high-volume consumers bought and manufactured their own products in their own home. The mostly used purchase path by high-volume consumers was the internet and direct marketing, but the public consumer responded that it was department stores and hypermarkets. The high-volume consumers highly used the internet and direct marketing (47.4%), but the public consumer responded that it was department stores and hypermarkets (23.3%). And then the survey about the price of *Prunus mume* showed that high-volume consumers considered of expensive (48%), moderate (44.6%), while most of the public consumers responded moderate (70.2%). high-volume consumers with many knowledge and purchasing experiences recognized that the price is more expensive than public consumers did. This would mean that the origin of the *Prunus mume* is not affordable. Note : This year, because the *Prunus mume* harvest was not good compared to last year, higher prices were formed. As a result, this gives the perception of a higher price. But, belief of

**Table 2. Perception and consumption for *Prunus mume***

		unit(N, %)		
Variable	Category	high-volume consumer	public consumer	X <sup>2</sup> value
Way of absorbing	Direct making	208(82.9)	125(44.8)	81.980***
	Manufactured goods	43(17.1)	154(55.2)	
	Total	251(100.0)	279(100.0)	
Experience of purchasing	Yes	178(69.8)	125(44.8)	33.927***
	No	77(30.2)	154(55.2)	
	Total	255(100.0)	279(100.0)	
Route of purchasing	Internet & Direct Marketing	82(47.4)	41(34.2)	21.330***
	Department stores & hypermarkets	13(7.5)	28(23.3)	
	Traditional Markets	49(28.3)	42(35.0)	
	Gift	29(16.8)	9(7.5)	
	Total	173(100.0)	120(100.0)	
	Very expensive	8(4.5)	3(2.4)	
	Expensive	77(43.5)	33(26.6)	
Price of purchasing	Usually	79(44.6)	87(70.2)	21.940***
	Inexpensive	11(6.2)	1(0.8)	
	Very inexpensive	2(1.1)	0(0.0)	
	Total	177(100.0)	124(100.0)	

\*\*\* p-value < 0.001

getting the benefits was due to the findings of the origin of the *Prunus mume*.

The results from the way of absorbing *Prunus mume* are shown in Table 3. The following analysis is divided according to public factors. The survey on how to eat *Prunus mume* shows that there were no differences depending on age, education, income, household head, and type of housing in the high-volume consumers, but there were differences depending on age, education, and household head in the public consumers. About 70% to 80% of high-volume consumers consumed products manufactured in their own home regardless of their age. On the contrary, public consumers bought commercial *Prunus mume* products in their 20s and 50s( $p<0.01$ ). And public consumers in their 30s and 40s manufactured products in their own home. Also, 70% to 80% of the high-volume consumers consumed products manufactured in their own home regardless of their education. However, 78.1% of the public consumers that were high school graduates or below manufactured products in their own home, while 50% to 60% of those that were college students or graduates and above bought commercial

products( $p<0.001$ ). A higher percentage of high-volume consumers manufactured within their own home, as well. On the other hand, a higher percentage of the public consumers with 4 household heads bought less commercial products, while 61.4% of those with 5 or more consumed products manufactured in their own home ( $p<0.05$ ). As a result, the more family members per household, the more consumers manufactured in their own home.

The results from experience of purchasing *Prunus mume* are shown in Table 4. The survey on the experience of buying *Prunus mume* shows that there were differences depending on the number of household members, and the type of housing in the high-volume consumers, and in the public consumers depended more on age, education, income, and number of household heads. About 60% to 80% of the public consumers in their 20s and 30s never bought any products, while 60% or more of those in their 40s and 50s did( $p<0.001$ ). In regards to education, 68.8% of the public consumers that were high school graduates and below had experience in buying commercial products, while 50% or more of those that were college students or graduates and above did not( $p<0.05$ ). The

**Table 3. The way of absorbing *Prunus mume***

Variable	Category	high-volume consumer			public consumer		
		Direct making	Manufactured goods	Total	Direct making	Manufactured goods	Total
Age	20-29	28(80.0)	7(20.0)	35(100.0)	22(29.7)	52(70.3)	74(100.0)
	30-39	24(72.7)	9(27.3)	33(100.0)	47(54.0)	40(46.0)	87(100.0)
	40-49	63(81.8)	14(18.2)	77(100.0)	39(54.9)	32(45.1)	71(100.0)
	$\geq 50$	82(86.3)	13(13.7)	95(100.0)	17(36.2)	30(63.8)	47(100.0)
Education	Under high school	76(86.4)	12(13.6)	88(100.0)	25(78.1)	7(21.9)	32(100.0)
	University	41(77.4)	12(22.6)	53(100.0)	27(32.5)	56(67.5)	83(100.0)
	Beyond university	60(77.9)	17(22.1)	77(100.0)	72(44.4)	90(55.6)	162(100.0)
Income (10,000 won)	<200	29(78.4)	8(21.6)	37(100.0)	27(47.4)	30(52.6)	57(100.0)
	200-299	55(79.7)	14(20.3)	69(100.0)	27(40.3)	40(59.7)	67(100.0)
	300-399	47(83.9)	9(16.1)	56(100.0)	24(42.9)	32(57.1)	56(100.0)
	400-499	18(78.3)	5(21.7)	23(100.0)	17(38.6)	27(61.4)	44(100.0)
	$\geq 500$	21(95.5)	1(4.5)	22(100.0)	29(56.8)	23(44.2)	52(100.0)
Family	1	5(55.6)	4(44.4)	9(100.0)	7(25.0)	21(75.0)	28(100.0)
	2	27(84.4)	5(15.6)	32(100.0)	9(45.0)	11(55.0)	20(100.0)
	3	30(81.1)	7(18.9)	37(100.0)	30(39.5)	46(60.5)	76(100.0)
	4	81(80.2)	20(19.8)	101(100.0)	51(47.2)	57(52.8)	108(100.0)
	$\geq 5$	43(86.0)	7(14.0)	50(100.0)	27(61.4)	17(38.6)	44(100.0)
Housing form	Apartment	86(76.1)	27(23.9)	113(100.0)	68(42.5)	92(57.5)	160(100.0)
	Housing	99(87.6)	14(12.4)	113(100.0)	33(54.1)	28(45.9)	61(100.0)
	Multi-family housing	8(80.0)	2(20.0)	10(100.0)	24(41.4)	34(58.6)	58(100.0)

unit(N, %)

**Table 4. Experience of purchasing *Prunus mume***

Variable	Category	high-volume consumer			public consumer		
		Yes	No	Total	Yes	No	Total
Age	20-29	22(62.9)	13(37.1)	35(100.0)	13(17.6)	61(82.4)	74(100.0)
	30-39	24(72.7)	9(27.3)	33(100.0)	33(37.9)	54(62.1)	87(100.0)
	40-49	49(63.6)	28(36.4)	77(100.0)	49(69.0)	22(31.0)	71(100.0)
	≥50	73(73.7)	26(26.3)	99(100.0)	30(63.8)	17(36.2)	47(100.0)
Education	Under high school	63(70.0)	27(30.0)	90(100.0)	22(68.8)	10(31.2)	32(100.0)
	University	33(62.3)	20(37.7)	53(100.0)	36(43.4)	47(56.6)	83(100.0)
	Beyond university	56(72.7)	21(27.3)	77(100.0)	65(40.1)	97(59.9)	162(100.0)
Income (10,000 won)	<200	28(75.7)	9(24.3)	37(100.0)	18(31.6)	39(68.4)	57(100.0)
	200-299	43(60.6)	28(39.4)	71(100.0)	25(37.3)	42(62.7)	67(100.0)
	300-399	38(65.5)	20(34.5)	58(100.0)	26(46.4)	30(53.6)	56(100.0)
	400-499	18(78.3)	5(21.7)	23(100.0)	24(54.6)	20(45.4)	44(100.0)
	≥500	17(77.3)	5(22.7)	22(100.0)	31(59.6)	21(40.4)	52(100.0)
Family	1	7(77.8)	2(22.2)	9(100.0)	4(14.3)	24(85.7)	28(100.0)
	2	17(53.1)	15(46.9)	32(100.0)	4(20.0)	16(80.0)	20(100.0)
	3	26(66.7)	13(33.3)	39(100.0)	40(52.6)	36(47.4)	76(100.0)
	4	80(77.7)	23(22.3)	103(100.0)	54(50.0)	54(50.0)	108(100.0)
	≥5	28(56.0)	22(44.0)	50(100.0)	23(52.3)	21(47.7)	44(100.0)
Housing form	Apartment	86(76.1)	27(23.9)	113(100.0)	77(48.1)	83(51.9)	160(100.0)
	Housing	75(64.1)	42(35.9)	117(100.0)	23(37.7)	38(62.3)	61(100.0)
	Multi-family housing	4(40.0)	6(60.0)	10(100.0)	25(43.1)	33(56.9)	58(100.0)

purchase experience of the public consumers differed from the household income; a higher percentage of those with 4 million won and less had no experience, while those with 4 million won and more had ( $p < 0.05$ ). A higher percentage of the public consumers with 1 or 2 family members had no purchase experience, while those with 3 to 5 family members had ( $p < 0.001$ ). The high-volume consumers had a tendency to buy and process and consume *Prunus mume*, whether the type of housing was apartment or public housing, compared to the public consumers. As a result, the survey shows that higher age, higher income, the higher household heads had a lot of purchase experience.

The results from route of purchasing *Prunus mume* are shown in Table 5. Then, purchase path and price of consumers who purchased *Prunus mume* directly were surveyed. In the study, consumers that had no purchase experience were excluded. The high-volume consumers mostly purchased *Prunus mume* by online shopping and direct marketing regardless of their ages. On the other hand, the public consumers in their 20s and 40s preferred department stores and hyper markets as well as direct marketing, while those

in their 30s and 50s mostly purchased in traditional markets. Also, online shopping and direct marketing were preferred in the high-volume consumers, who expected a direct supply of fresh *Prunus mume* from the origin. However, 60-70% of the public consumers used channels below as purchase paths starting at 3 million won and below; traditional markets, 3-5,000,000 won; internet and direct marketing, and more than five million won or more; the department stores and hypermarkets. As a result, there were differences between the public consumers' purchase paths of *Prunus mume* and the high-volume ones'. And the consumers with lower income preferred traditional markets to those with higher income who bought mostly at the department stores and hypermarkets. The group with higher income had a tendency to buy at the department stores and hypermarkets compared with other groups; which means it purchased *Prunus mume* directly. The main purchase paths of the high-volume consumers were internet and direct marketing regardless of household heads, while the public consumers only with higher household heads were the same.

The results from price of purchasing *Prunus mume* are

Table 5. Route of purchasing *Prunus mume*

Variable	Category	high-volume consumer					public consumer					unit(N, %)
		Internet & Direct Marketing	Department stores & hypermarkets	Traditional Markets	Gift	Total	Internet & Direct Marketing	Department stores & hypermarkets	Traditional Markets	Gift	Total	
Age	20-29	8(36.4)	4(18.2)	2(9.1)	8(36.4)	22(100.0)	7(58.3)	5(41.7)	0(0.0)	0(0.0)	12(100.0)	
	30-39	10(43.5)	0(0.0)	7(30.4)	6(26.1)	23(100.0)	6(20.0)	4(13.3)	18(60.0)	2(6.7)	30(100.0)	
	40-49	22(44.9)	6(12.2)	13(26.5)	8(16.3)	49(100.0)	19(39.6)	13(27.1)	12(25.0)	4(8.3)	48(100.0)	
	≥ 50	36(50.7)	3(4.2)	27(38.0)	5(7.0)	71(100.0)	9(30.0)	6(20.0)	12(40.0)	3(10.0)	30(100.0)	
Education	Under high school	28(46.7)	3(5.0)	22(36.7)	7(11.7)	60(100.0)	6(31.6)	1(5.3)	11(57.9)	1(5.3)	19(100.0)	
	University	10(30.3)	2(6.1)	13(39.4)	8(24.2)	33(100.0)	10(28.6)	12(34.3)	7(20.0)	6(17.1)	35(100.0)	
	Beyond university	34(60.7)	5(8.9)	11(19.6)	6(10.7)	56(100.0)	23(35.9)	15(23.4)	24(37.5)	2(3.1)	64(100.0)	
Income (10,000 won)	<200	12(44.4)	1(3.7)	7(25.9)	7(25.9)	27(100.0)	2(13.3)	2(13.3)	11(73.3)	0(0.0)	15(100.0)	
	200-299	24(58.5)	1(2.4)	14(34.2)	2(4.9)	41(100.0)	4(16.7)	3(12.5)	15(62.5)	2(8.3)	24(100.0)	
	300-399	17(44.7)	4(10.5)	13(34.2)	4(10.5)	38(100.0)	10(40.0)	6(24.0)	7(28.0)	2(8.0)	25(100.0)	
	400-499	6(33.3)	3(16.7)	5(27.8)	4(22.2)	18(100.0)	14(58.3)	4(16.7)	3(12.5)	3(12.5)	24(100.0)	
	≥ 500	11(64.7)	0(0.0)	6(35.3)	0(0.0)	17(100.0)	11(35.5)	12(38.7)	6(19.4)	2(6.5)	31(100.0)	
Family	1	3(42.9)	0(0.0)	0(0.0)	4(57.1)	7(100.0)	0(0.0)	4(100.0)	0(0.0)	0(0.0)	4(100.0)	
	2	10(62.5)	1(6.3)	3(18.8)	2(12.5)	16(100.0)	0(0.0)	0(0.0)	4(100.0)	0(0.0)	4(100.0)	
	3	13(54.2)	2(8.3)	6(25.0)	3(12.5)	24(100.0)	11(29.7)	10(27.0)	14(37.8)	2(5.4)	37(100.0)	
	4	35(43.8)	9(11.3)	28(35.0)	8(10.0)	80(100.0)	18(34.0)	9(17.0)	20(37.7)	6(11.3)	53(100.0)	
	≥ 5	11(39.3)	1(3.6)	8(28.6)	8(28.6)	28(100.0)	12(54.6)	5(22.7)	4(18.2)	1(4.6)	22(100.0)	
Housing form	Apartment	39(45.4)	6(7.0)	34(39.5)	7(8.1)	86(100.0)	28(37.8)	14(18.9)	26(35.1)	6(8.1)	74(100.0)	
	Housing	35(48.0)	6(8.2)	14(19.2)	18(24.7)	73(100.0)	5(22.7)	6(27.3)	10(45.5)	1(4.6)	22(100.0)	
	Multi-family housing	2(66.7)	0(0.0)	1(33.3)	0(0.0)	3(100.0)	8(33.3)	8(33.3)	6(25.0)	2(8.3)	24(100.0)	

Table 6. Price of purchasing *Prunus mume*

													unit(N, %)
Variable	Category	high-volume consumer					public consumer						
		Very expensive	expensive	Usually	inexpensive	Very inexpensive	Total	Very expensive	expensive	Usually	inexpensive	Very inexpensive	Total
Age	20-29	0(0.0)	10(45.5)	6(27.3)	4(18.2)	2(9.1)	22(100.0)	0(0.0)	3(23.1)	10(76.9)	0(0.0)	0(0.0)	13(100.0)
	30-39	2(8.3)	13(54.2)	9(37.5)	0(0.0)	0(0.0)	24(100.0)	1(3.0)	8(24.2)	24(72.7)	0(0.0)	0(0.0)	33(100.0)
	40-49	2(4.1)	27(55.1)	16(32.7)	4(8.2)	0(0.0)	49(100.0)	2(4.2)	12(25.0)	33(68.8)	1(2.1)	0(0.0)	48(100.0)
	≥ 50	4(5.5)	24(32.9)	42(57.5)	3(4.1)	0(0.0)	73(100.0)	0(0.0)	10(33.3)	20(66.7)	0(0.0)	0(0.0)	30(100.0)
Education	Under high school	4(6.4)	32(50.8)	24(38.1)	3(4.8)	0(0.0)	63(100.0)	1(4.8)	8(38.1)	12(57.1)	0(0.0)	0(0.0)	21(100.0)
	University	2(6.1)	14(42.4)	9(27.3)	6(18.2)	2(6.1)	33(100.0)	1(2.8)	6(16.7)	28(77.8)	1(2.8)	0(0.0)	36(100.0)
	Beyond university	2(3.6)	19(33.9)	33(58.9)	2(3.6)	0(0.0)	56(100.0)	0(0.0)	18(27.7)	47(72.3)	0(0.0)	0(0.0)	65(100.0)
Income (10,000 won)	<200	5(17.9)	7(25.0)	13(46.4)	1(3.6)	2(7.1)	28(100.0)	0(0.0)	8(44.4)	10(55.6)	0(0.0)	0(0.0)	18(100.0)
	200-299	2(4.7)	27(62.8)	14(32.6)	0(0.0)	0(0.0)	43(100.0)	1(4.2)	6(25.0)	17(70.8)	0(0.0)	0(0.0)	24(100.0)
	300-399	1(2.6)	16(42.1)	19(50.0)	2(5.3)	0(0.0)	38(100.0)	0(0.0)	7(26.9)	19(73.1)	0(0.0)	0(0.0)	26(100.0)
	400-499	0(0.0)	4(22.2)	14(77.8)	0(0.0)	0(0.0)	18(100.0)	1(4.2)	6(25.0)	17(70.8)	0(0.0)	0(0.0)	24(100.0)
	≥ 500	0(0.0)	10(58.8)	7(41.2)	0(0.0)	0(0.0)	17(100.0)	1(3.2)	5(16.1)	24(77.4)	1(3.2)	0(0.0)	31(100.0)
Family	1	0(0.0)	5(71.4)	2(28.6)	0(0.0)	0(0.0)	7(100.0)	0(0.0)	2(50.0)	2(50.0)	0(0.0)	0(0.0)	4(100.0)
	2	3(17.7)	7(41.2)	5(29.4)	0(0.0)	2(11.8)	17(100.0)	0(0.0)	3(75.0)	1(25.0)	0(0.0)	0(0.0)	4(100.0)
	3	3(11.5)	11(42.3)	8(30.8)	4(15.4)	0(0.0)	26(100.0)	0(0.0)	9(22.5)	31(77.5)	0(0.0)	0(0.0)	40(100.0)
	4	0(0.0)	32(40.0)	43(53.8)	5(6.3)	0(0.0)	80(100.0)	2(3.7)	12(22.2)	40(74.1)	0(0.0)	0(0.0)	54(100.0)
	≥ 5	2(7.1)	15(53.6)	9(32.1)	2(7.1)	0(0.0)	28(100.0)	1(4.6)	7(31.8)	13(59.1)	1(4.6)	0(0.0)	22(100.0)
Housing form	Apartment	3(3.5)	40(46.5)	43(50.0)	0(0.0)	0(0.0)	86(100.0)	2(2.6)	23(29.9)	51(66.2)	1(1.3)	0(0.0)	77(100.0)
	Housing	5(6.7)	29(38.7)	28(37.3)	11(14.7)	2(2.7)	75(100.0)	0(0.0)	7(31.8)	15(68.2)	0(0.0)	0(0.0)	22(100.0)
	Multi-family housing	0(0.0)	2(50.0)	2(50.0)	0(0.0)	0(0.0)	4(100.0)	1(4.0)	3(12.0)	21(84.0)	0(0.0)	0(0.0)	25(100.0)

shown in Table 6. High-volume consumers responded that the purchase price of *Prunus mume* was more expensive, while the public consumers responded very normal. As a result, the high-volume consumers were more cost-sensitive than the public consumers, which means high-volume consumers were getting more sensitive to plum price. About 60-70% of the public consumers responded normal regardless of their ages, and it was found that they were less interested in purchase price of *Prunus mume*. The high-volume consumers responded that the price was expensive or normal regardless of their education, income, and household heads, while most of the public consumers responded normal. As mentioned earlier, the high-volume consumers were more cost-sensitive due to their high-volume consumption, and the public consumers were less sensitive to the purchase price because of their low interest.

#### Preferences and Consumption of *Prunus mume* product

The results from preference and consumption for *Prunus mume* products are shown in Table 7. The survey about the purchase decision factors of *Prunus mume* product showed high-volume consumers considered the origin (34.8%) as the most important factor, while public consumers, the taste (42.8%). In addition, all two consumers considered the taste and contents important. The survey about the preferences of *Prunus mume* products showed 74.6% of high-volume consumers preferred *Prunus mume*, as opposed to 46.3% of public consumers. The most frequent response of both groups was 'good for health'. Around 20.3% of public consumers responded the reason is 'good taste and flavor', higher than high-volume consumers. The survey about the satisfaction rate to *Prunus mume* products selling at the market showed 60% of high-volume consumers satisfied, while 67.3% of public consumers were indifferent. Therefore, those who consumed more *Prunus mume* were found to be more satisfied publicly. The reason why the high-volume consumers were most unsatisfied with was mainly the 'lack of variety' (38.4%), while the public consumers were concerned more with the 'amount of *Prunus mume* contents'. As a result, where the food originates from (origin) and its reputation was found to be the most important purchase decision factor to high-volume consumers, who demanded diversity of products. And the public consumers put emphasis on the taste and preferred plum because its taste and flavor is good. Also, they demanded less sweetness, yet more *Prunus mume* contents.

The results from the type of *Prunus mume* products used within a year are shown in Fig. 1. The high-volume consumers chose *Prunus mume* extract, drinks, pickles and plum wine, respectively, and they had a higher interest in *Prunus mume* products than the public consumers did. In contrast, a total 57.3% of respondents of the public consumers chose plum beverages and plum wine, and then the extract and pickles, respectively. The results showed consumers had rare opportunities to experience a variety of foods.

**Table 7. Preference and consumption for *Prunus mume* products**  
unit(N, %)

Variable	Category	high-volume consumer	public consumer	X <sup>2</sup> value
The factors of purchasing decision	Contents	62(25.4)	93(33.7)	52.089***
	Flavor	69(28.3)	118(42.8)	
	Manufacturers	3(1.2)	15(5.4)	
	Origin	85(34.8)	38(13.8)	
	Price	17(7.0)	12(4.4)	
	Packaging	8(3.3)	0(0.0)	
	Total	244(100.0)	276(100.0)	
Degree of preference	Highly preferred	73(29.0)	28(10.4)	56.332***
	Preferred	115(45.6)	97(35.9)	
	Usually	58(23.0)	119(44.1)	
	Not Preferred	4(1.6)	24(8.9)	
	Not much prefer	2(0.8)	2(0.7)	
Reasons for Preferred	Total	252(100.0)	270(100.0)	15.221***
	Good health	195(80.9)	175(77.1)	
	Traditional Foods	21(8.7)	6(2.6)	
	Good flavor	25(10.4)	46(20.3)	
	Total	241(100.0)	227(100.0)	
Degree of satisfaction with commercial products	Very satisfied	33(13.1)	5(1.8)	70.121***
	satisfied	118(46.8)	71(25.8)	
	Usually	101(40.1)	185(67.3)	
	dissatisfied	0(0.0)	13(4.7)	
	Very dissatisfied	0(0.0)	1(0.4)	
Reason for dissatisfied	Total	252(100.0)	275(100.0)	33.014***
	Content of less	50(25.1)	69(39.4)	
	Not taste	19(9.6)	31(17.7)	
	Packaging discomfort	18(9.1)	2(1.1)	
	Expensive price	44(22.1)	18(10.3)	
	Not many products	57(28.6)	52(29.7)	
	Buy discomfort	11(5.5)	3(1.7)	
Total		199(100.0)	175(100.0)	

\*\*\* p-value < 0.001

### The outlook and activation of *Prunus mume*

The results from expected consumption of *Prunus mume* are shown in Fig. 2. Results were divided from the high-volume and public consumer base to compare their consumption behavior of *Prunus mume*. 80% of high-volume consumers and 71% of public consumers were positive. The prospect of *Prunus*

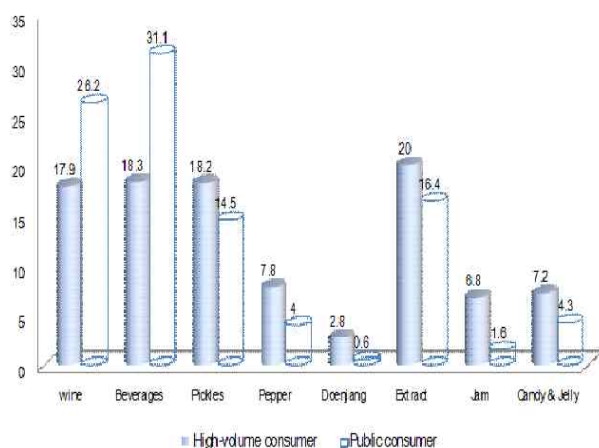


Fig. 1. The type of *Prunus mume* products used within a year.

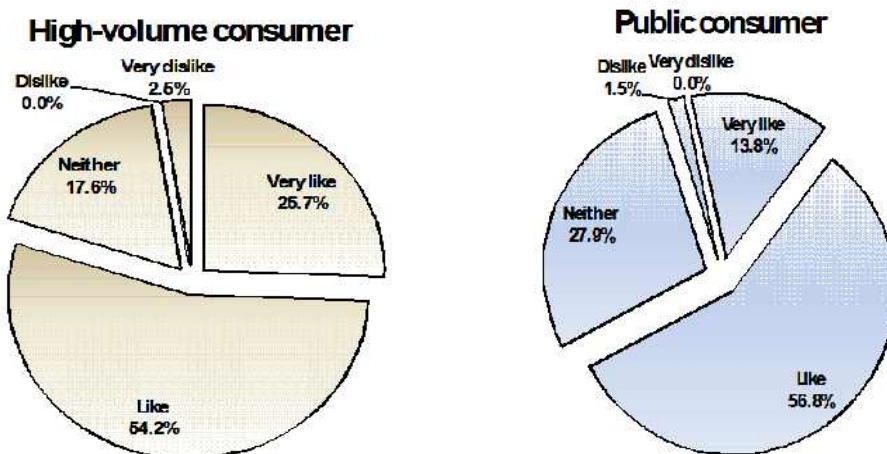


Fig. 2. Expected consumption of *Prunus mume*.

*mume* consumption was found to be positive in both groups.

The results from *Prunus mume* products which want to be developed are shown in Table 8. The main interest of most consumers surveyed on new *Prunus mume* products was to develop *Prunus mume* cosmetics. Due to how *Prunus mume* is perceived it is speculated to be good for skin health. Then a lot of consumers were interested in nuts, and sweets including chocolate, ice cream, cake(bread), cold noodles (noodles), sauces(dressings), respectively. And there were

Table 8. *Prunus mume* products which want to be developed

Ranking	New Processed Products	Ranking	New Processed Products
1	Cosmetics(Pack, Perfume)	7	Canned food
2	Snack foods(Nuts, Chocolate)	8	Wine
3	Ice cream(Jujjuba)	9	Health drinks
4	Cake(Bread)	10	Squash
5	Noodles	11	Powder can
6	Sauces(Dressing)	12	Digestive medicine

comments, such as developing *Prunus mume* sauce instead of *Prunus mume* juice to be used for meat seasoning. As a result, we could see a lot of needs to develop easy-to-access, easy-to-consume products and healthy image products. In addition, canned food, wine, health drinks, juice, powder, and digestives were also included in consumer interest response.

The results from comments on the consumption of *Prunus mume* enabled are shown in Table 9. According to the survey about *Prunus mume* and *Prunus mume* product, the most frequent comment was the need for promotion of the efficacy

of *Prunus mume*. Meanwhile, there was an opinion that the public needed to know how to eat *Prunus mume*. Also many opinions demanded a need to develop a variety of products. The results mean that the necessity of developing a new product should focus on targeting young people or women consumers. Besides, there were comments such as lower prices, improved quality, ease of consumption, and the activation of Direct Marketing. As a result, it's very important to let the consumers experience *Prunus mume* products



frequently through close-to-consumer market such as direct transaction market or tasting events. Promotional activities through direct marketing play a major role in transitioning the consumer's perception of *Prunus mume* products. Based on these findings, the type of consuming *Prunus mume* of the public consumers is forecasted to change that of the high-volume consumers hereafter. Therefore, the change will supposedly increase the demand for *Prunus mume*.

**Table 9. Comments on the consumption of *Prunus mume* enabled**

Ranking	Comments
1	Promote the efficacy of <i>Prunus mume</i>
2	Various products
3	Low price
4	Quality improvement
5	Ease of consumption
6	Direct marketing

## 요 약

본 논문에서는 매실의 소비촉진을 위한 주요 동기와 요인을 찾기 위하여 관심소비자층과 일반소비자층으로 나누어 조사하였다. 특히 열매매실과 매실가공식품에 대한 소비실태 및 선호도를 조사하였다. 설문내용은 섭취방법, 구매경험, 구매경로, 구매가격, 소비경험, 구매결정요인, 선호요인, 불만족요인, 소비전망, 새로운 가공식품과 소비활성화에 대한 의견 등이었다. 총 534명에게서 응답을 받았으며 SAS program(Version 9.1)의 frequency test, Chi-square test를 이용하여 검증하였다. 설문분석결과 관심집단은 열매매실을 직접 구매하여 집에서 제조하는 비율이 높았고 일반집단은 시중에 판매되는 제품의 이용률이 높았다. 그러나 일반집단에서도 연령이 많을수록, 소득이 높을수록, 가구원수가 많을수록 열매매실을 구매하여 집에서 직접 제조하는 것으로 나타났다. 구매경로에 있어서는 인터넷과 직거래 이용률이 높았으나 일반집단에서는 백화점이나 대형마트도 많이 이용한다고 응답했다. 구매가격에 대해서는 일반집단보다 관심집단이 더 비싸다고 응답했으며 가격에 더 민감한 것으로 나타났다. 소비경험에 있어서는 다양한 매실제품을 경험하지 못하는 것으로 나타났다. 구매결정요인으로는 관심집단은 원산지, 일반집단은 맛이라고 가장 많이 응답하였다. 선호요인은 건강에 좋고 맛과 향이 좋다는 점이었으며, 불만족요인은 제품이 다양하지 못하고 매실함량이 적다는 점이었다. 일반집단이 관심집단에 비해 맛에 더 민감한 것으로 나타났다. 소비가 촉진되고 활성화되기 위해서는 소비자가 편리하게 접하고 먹을 수 있는 제품과

건강 이미지제품의 개발이 필요한 것으로 조사되었다. 또한 홍보와 더불어 소비자와 가까운 시장을 확보하여 자주 접할 수 있는 기회의 제공이 중요한 것으로 조사되었다. 이러한 조사결과는 향후 일반소비자집단들의 매실소비가 관심소비자집단의 소비유형으로 이전되어 가리라는 것을 예측할 수 있다. 즉 일반소비자가 관심집단의 유형으로 변함에 따라 매실소비가 증대되어질 것으로 판단된다.

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