

Traditional knowledge of wild edible plants on Jeju Island, Korea

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Received 30.07.12; revised 04.10.12

The purpose of this study is to analyze and record traditional knowledge of wild edible plants utilized by the indigenous people living on Jeju Island in Korea. This study reveals that 124 informants have produced 471 viable usages from the collection of 164 species, within 127 genera in 57 families. Regarding the distribution of recorded families, 12 species of Poaceae occupied 16.7% of the total use-reports. Overall, 31 kinds of plant-parts were selected as edible materials requiring 68 various preparatory methods. Fidelity levels of plants regarding preparatory methods, 55 plant species recorded a FL of 100%. The categories of preparatory methods with the highest degree of consensus from informants were all types of fermented soybean, chopped noodles, and raw (Type I). The field investigative method used semi-structured questionnaires and adopted the participatory rural appraisal method for this study and produced exceptional results in investigating and analyzing traditional wild edible plants.

Keywords: Wild edible plants, Traditional knowledge, Informant consensus factor, Fidelity level, Jeju Island

IPC Int. Cl.⁸: A61K36/00, A01G1/00, A01G17/00, A23L1/00, A23L1/221, A23L2/00, A23L2/02, A23F3/00, C12G3/00

Jeju Island, as the largest volcanic island in Korea, includes Mt. Halla (1,950 m) and over 360 other parasitic volcanos (*oreums* in Korean) and is also composed of eight inhabited isles and 54 uninhabited islets. Jeju Island lies in the middle of the triangle which consists of the Korean Peninsula, Japanese islands and the Chinese continent. This ideal location has been advantageous for exchanging cultures and goods with these regions. Therefore, Jeju Island has been referred to as a small continent of far eastern Asia due to its unique culture that the people of Jeju have created, including its women divers (*haenyo* in Korean).

The weather depicts a vertical distribution from subtropics to a subarctic zone by its geographical position, its elevation, and topography. Owing to these environmental factors, the vegetation of Hallasan National Park is variously distributed from low-lying warm temperature forests to alpine or arctic forests of its highlands (Fig. 1). The endemic plants and the diversity of its species are abundant compared to other areas of the Korean Peninsula. Therefore, Jeju Island, having a wonderful ecological geography and a unique

traditional culture, was designated by UNESCO as a Biosphere Conserve in 2002, a World Natural Heritage in 2007, and a Global Geopark in 2010.

The floral investigations of Jeju Island began by Nakai¹, who reported 1,433 species, with both Lee² and Park *et al.*³ examining the same area. The latest flora counts reported 1,800 species by Kim⁴ to 1,990 species by Kim *et al.*⁵ in 2006. Lee *et al.*⁶ recorded 169 species of edible plants, which included 423 various usages, according to his research by anecdote recordings. In regards to edible plants, Song and Kim⁷ reported 719 species; however, no direct investigation was conducted at that time.

This study is the first ethnobotanical analysis of orally transmitted traditional knowledge of wild edible plants on Jeju Island. The results will be enhanced because of the value of traditional knowledge of the local community concerning wild edible plants and will provide various nutritional sources for the residents of all communities.

Study area and investigative method

Study area

The study area lies between 33° 06'N to 34° 00'N latitude and 126° 08'E to 126° 58'E longitude. Its length is 73 km and the width is 41 km. The entire

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shape of the island is close to an oval formation in that the major axis inclines at about 15 degrees against the latitude from the northeast to the southwest and it is 2.4 times longer than the minor axis (Fig. 1).

The annual average temperature is 15.3°C and the annual precipitation is approximately 1,500~1,600 mm. The study area is divided into two cities, which includes seven counties, five subcounties, and thirty-one villages in its administrative district and measures 1,848.85 km² in area⁸. The total population in 2011 was 583, 284⁸.

Investigative method

Field investigations were conducted throughout 27 sites starting from April, 2011 to November, 2011 (Fig. 1). We interviewed 124 key informants who had lived over 40 yrs in the study area.

Data was collected using the participatory rural appraisal (PRA) method, as the informants also become investigators themselves, involved in

interviews, informal meetings, open and group discussions, and overt observations with semi-structured questionnaires^{9, 10, 11}. The content of the semi-structured questionnaires was organized using previous organizational methods. These questionnaires inquired of information about diverse methods used for the collection and usage of wild edible plants, including the local names, plant-parts used, collective methods and seasons, storage methods and seasons, preparatory methods and usable durations of each plant-part^{9,10,12}.

All of the plant specimens were collected during either their flowering or fruiting seasons and were organized using the normal specimen manufacturing method^{9, 12}. The voucher specimens were deposited for preservation in the herbarium at Jeonju University (JJU). The precise identification of plants mentioned by the informants was performed in accordance with Lee¹³ and Lee¹⁴. Scientific names of plants were confirmed by the National Knowledge and Information System for Biological Species¹⁵ of Korea.

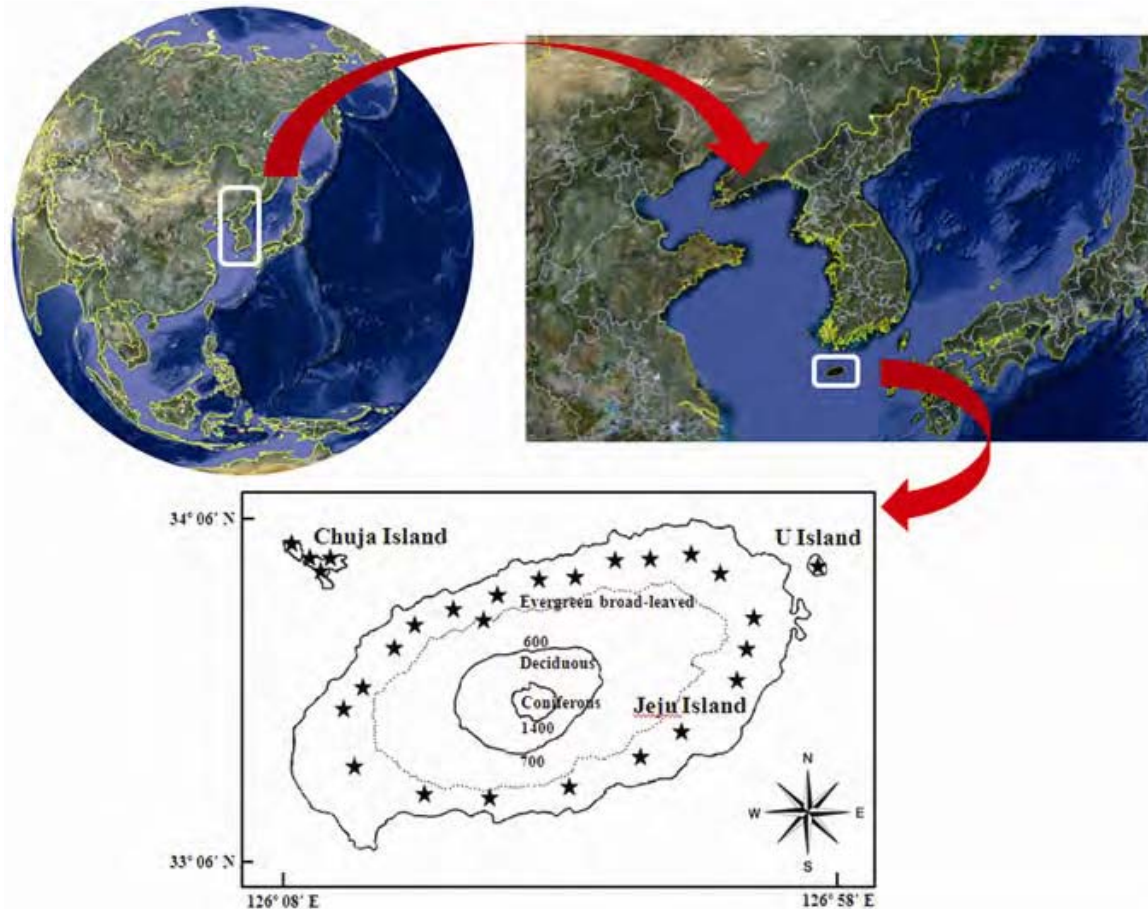


Fig. 1—The altitudinal vegetation zone & vertical distribution of vascular plants on Jeju Island

Quantitative analysis

The informant consensus factor (ICF) was used to identify the ethnobotanical importance of the collected plant species and to analyze the agreement degree of the informants' knowledge about each category of preparatory methods^{16,17}. The ICF was calculated by the following formula: $ICF = (n_{ur} - n_t) / (n_{ur} - 1)$, where n_{ur} is the number of times a preparatory method was mentioned in each category and n_t is the number of plant species used.

The fidelity level (FL) was employed to determine the most important plant species used by the informants for certain preparatory methods^{9,10,11,18}. The FL was calculated using the following formula: $FL(\%) = N_p \times 100 / N$, where N_p is the number of the informants that mentioned the specific plant species used with certain preparatory methods, and N is the total number of the informants who utilized plants as materials for any given preparatory method.

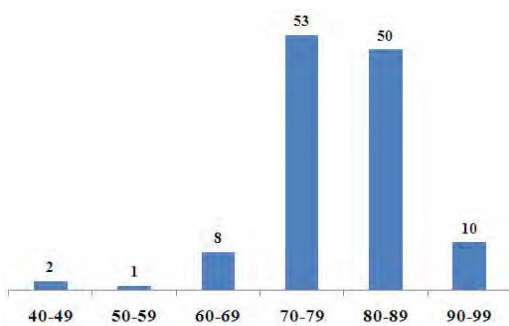
Results and discussion

Demographic characteristics of participants in this study

All 124 informants (41 men and 83 women) were randomly selected at community halls, senior welfare centers, and traditional markets at 27 sites. The average age of the informants was 78 yrs old with informants ranging in age from 40 - 94. The elderly in their seventies and eighties occupied 83.1% of the total. These residents have hardly been affected by modern culture and education as 92 of them never received any school education (Table 1).

Table 1—Demographic characteristics

Gender	
Male	41 (33.1%)
Female	83 (66.9%)
Age	



Educational attainment	
Never attended school	92 (74.2%)
Attended school for less than 6 years	7 (5.6%)
Attended school for 6 years	9 (7.3%)
Finished middle school	9 (7.3%)
Finished high school	7 (5.6%)

Ethnobotanical analysis of wild edible plants

In this study, a total of 57 families, 127 genera, and 164 species of plants that showed 471 ways of usage were recorded from Jeju Island (Table 2). The recorded plant species totaled 8.2% of 1,990 species⁵ and 22.8% of the 719 edible species⁷ in the study area. The varying percentage exists for two reasons. One, the local community had not gathered wild edible plants for usage any longer. Two, most of the elderly people who directly gathered the wild edible plants, had forgotten their preparatory methods and usages.

However, the 164 recorded plant species on Jeju Island exceeded the number per square kilometer found on the islands of other countries researched: [85 species found on Hawaii, which is 9 times larger in area than Jeju Island¹⁹, 69 species found on Majuli Island and Darrang District in India, which is 2.6 times larger than Jeju Island²⁰, and 188 species collected on Sicily in Italy, which is 14 times larger than Jeju Island²¹].

Examining the distribution of the recorded families, Poaceae (12 species) occupied 16.7% of the total use-reports followed by Liliaceae (11 species) at 8.09%, Rutaceae (11 species) at 7.02%, Brassicaceae (5 species) at 6.69%, and Asteraceae (15 species) at 6.62% of the whole, respectively (Table 3). These large families contain very common plants in the study area. This result confirms that people tend to prefer using plants that are easily available to them, excluding the toxic or noxious species. Namely, the views of Pieroni²² and Stepp and Moerman²³ confirm the fact that the more common a plant is in an area, the greater the probability of its popular use.

Concerning the number of times a plant was mentioned by the informants regarding usage, *Hordeum vulgare* var. *hexastichon* (L.) Asch. (164 recordings) was the most frequently mentioned plant, followed by *Fagopyrum esculentum* Moench (159 recordings), *Ipomoea batatas* (L.) Lam. (157 recordings), *Setaria italica* (L.) P.Beauv. (112 recordings), *Artemisia princeps* Pamp. DC. (88 recordings), and other mentioned plants (Fig. 2). This result reflects that the informants tend to mention the species with special usages. Also, the results are similar to previous research completed in that most wild edible plants were mainly used as dietary supplements^{24,25,26,27,28}.

In regards to usages, 68 species of the common favorites of beverages, teas, fermented foods, and other foods eaten during a famine totaled 41.5%, followed by 57 species of vegetables occupying 34.8% with 31 species of fruit occupying 18.9% of the whole.

Table 2—Wild edible plants investigated

Family name	Scientific name	Korean name	Used part	Preparation	FL
Actinidiaceae	<i>Actinidia arguta</i> (Siebold & Zucc.) Planch. ex Miq. var. <i>arguta</i>	Darae	Fruit	Raw (Type II)	80.0
			Sprout	Seasoned cooked vegetables (Type I)	20.0
Alariaceae	<i>Ecklonia cava</i> Kjellman <i>Undaria pinnatifida</i> (Harvey) Miyeok Suringar	Gamtae	Thallus	Boiled rice	100.0
			Thallus	Boiled	1.2
				Cold soup made from water, soy sources and vinegar	1.2
				Raw (Type I)	7.1
				Seasoned with condiments	32.9
Amaranthaceae	<i>Achyranthes japonica</i> (Miq.) Nakai <i>Amaranthus mangostanus</i> L.	Soemureup Bireum	Root	Wrapped in leaves Brewing	1.2 100.0
			Young leaf	Cold soup made from water, soy sources and vinegar	8.3
				Seasoned cooked vegetables (Type I)	75.0
				Soup	16.7
				Freshy juice	50.0
Apiaceae	<i>Angelica Utilis</i> Makino <i>Coriandrum sativum</i> L. <i>Daucus carota</i> subsp. <i>sativa</i> (Hoffm.) Arcang. <i>Oenanthe javanica</i> (Blume) DC. <i>Peucedanum japonicum</i> Thunb.	Sinseoncho Gosu Dangeun Minari Gaetgireumnamul	Young leaf	Seasoned cooked vegetables (Type I)	50.0
			Young leaf	Spice	100.0
			Root	Condiment	100.0
			Aerial part	Seasoned cooked vegetables (Type I)	61.1
				Soup	5.6
				Spice	33.3
			Young leaf	Seasoned cooked vegetables (Type I)	66.7
	Vegetables preserved in Korean traditional sauces (soy sauce)	13.3			
Araceae	<i>Arisaema amurense</i> for. <i>serratum</i> (Nakai) Kitag. <i>Colocasia esculenta</i> (L.) Schott	Cheonnamseong Toran	Root	Wrapped in leaves Brewing	20.0 100.0
			Corm	Soup	26.7
				Soup with sesame	6.7
				Steamed	20.0
			Petiole	Seasoned cooked vegetables (Type I)	6.7
Araliaceae	<i>Aralia elata</i> (Miq.) Seem. <i>Eleutherococcus sessiliflorus</i> (Rupr. & Maxim.) S.Y.Hu	Dureupnamu Ogalpinamu	Sprout	Seasoned cooked vegetables (Type IV)	26.7
				Soup	13.3
			Sprout	Seasoned cooked vegetables (Type III)	57.1
				Soup	42.9
			Fruit	Brewing	30.0
				Tea	30.0
			Sprout	Korean Salad (Type I)	10.0
				Seasoned cooked vegetables (Type I)	10.0
				Vegetables preserved in Korean traditional sauces (soy sauce)	10.0
			Stem	Tea	10.0

Contd.

Table 2—Wild edible plants investigated —*Contd*

Family name	Scientific name	Korean name	Used part	Preparation	FL				
Asclepiadaceae	<i>Cynanchum wilfordii</i> (Maxim.) Hemsl.	KeunJORONG	Root	Brewing	100.0				
Aspleniaceae	<i>Pteridium aquilinum</i> var. <i>latiusculum</i> (Desv.) Underw. ex Hell.	Gosari	Young frond	Seasoned cooked vegetables (Type I)	26.3				
				Seasoned cooked vegetables (Type II)	5.3				
				Seasoned cooked vegetables (Type V)	52.6				
Asteraceae	<i>Achillea alpina</i> L.	Toppul	Young leaf	Porridge	100.0				
				<i>Arctium lappa</i> L.	Ueong	Root	Hard-boiled	100.0	
	<i>Artemisia princeps</i> Pamp.	Ssuk	Leaf				Fermentation (Type II)	2.3	
				Tea	3.4				
				Young leaf	Boiled rice	6.8			
					Clear soup with flour dumplings	2.3			
					Flour cake	4.5			
				Half-moon shaped rice cake steamed on a layer of leaf	Mixed grain porridge	19.3			
					Pan fried	4.5			
					Porridge	3.4			
					Rice cake	27.3			
				<i>Aster scaber</i> Thunb.	Chamchwi	Petiole	Young leaf	Seasoned cooked vegetables (Type I)	11.8
								Seasoned cooked vegetables (Type I)	82.4
	<i>Cirsium japonicum</i> var. <i>maackii</i> (Maxim.) Matsum.	Eonggeongkwi	Root	Root	Soup	5.9			
					Young leaf	Brewing	43.8		
						Vegetables preserved in Korean traditional sauces (soybean paste)	43.8		
	<i>Cirsium japonicum</i> var. <i>spinossimum</i> Kitam.	Gasieonggeongkwi	Root	Root	Soup	12.5			
					Brewing	100.0			
	<i>Cirsium pendulum</i> Fisch. ex DC.	Keuneonggeongkw	Root	Root	Brewing	100.0			
	<i>Crepidiastrum sonchifolium</i> (Bunge) Pak & Kawano	Godeulppaegi	Whole plant	Whole plant	Kimchi	100.0			
	<i>Ixeridium dentatum</i> (Thunb. ex Mori) Tzvelev	Sseumbagwi	Young leaf	Young leaf	Kimchi	40.0			
Korean Salad (Type I)					20.0				
Seasoned cooked vegetables (Type I)					20.0				
<i>Lactuca sativa</i> L.	Sangchu	Leaf	Leaf	Wrapped in leaves	20.0				
				Korean Salad (Type I)	46.2				
				Wrapped in leaves	53.8				
<i>Ligularia fischeri</i> (Ledeb.) Turcz.	Gomchwi	Young leaf	Young leaf	Seasoned cooked vegetables (Type I)	33.3				
				Wrapped in leaves	66.7				
<i>Petasites japonicus</i> (Siebold & Zucc.) Maxim.	Meowi	Petiole	Petiole	Seasoned cooked vegetables (Type I)	25.0				
				Seasoned cooked vegetables (Type II)	25.0				
				Soup	25.0				

Contd.

Table 2—Wild edible plants investigated—Contd

Family name	Scientific name	Korean name	Used part	Preparation	FL
	<i>Petasites rubellus</i> (J.F.Gmelin) Toman	Gaemeowi	Rhizome	Brewing	100.0
	<i>Taraxacum officinale</i> Weber	Seoyangmindeulre	Aerial part	Kimchi	100.0
	<i>Taraxacum platycarpum</i> Dahlst.	Mindeulre	Aerial part	Freshy juice	14.3
				Kimchi	21.4
				Raw (Type IV)	7.1
				Seasoned cooked vegetables (Type I)	42.9
				Wrapped in leaves	14.3
Boraginaceae	<i>Lithospermum erythrorhizon</i> Siebold & Zucc	Jichi	Root	Brewing	100.0
Brassicaceae	<i>Brassica napus</i> L.	Yuchae	Flower	Honey	6.7
			Young leaf	Seasoned cooked vegetables (Type I)	66.7
				Soup	26.7
	<i>Brassica oleracea</i> var. <i>capitata</i> L.	Yangbaechu	Leaf	Korean Salad (Type I)	30.8
				Seasoned cooked vegetables (Type III)	38.5
				Wrapped in leaves	30.8
	<i>Brassica rapa</i> var. <i>glabra</i> Regel	Baechu	Leaf	Kimchi	23.2
				Mixed grain porridge	3.6
				Porridge	14.3
				Seasoned cooked vegetables (Type I)	12.5
				Seasoned cooked vegetables (Type III)	7.1
				Soup	32.1
				Wrapped in leaves	7.1
	<i>Capsella bursapastoris</i> (L.) L.W.Medicus	Naengi	Whole plant	Seasoned cooked vegetables (Type I)	45.8
				Soup	54.2
	<i>Raphanus sativus</i> L.	Mu	Leaf	Seasoned cooked vegetables (Type V)	1.4
				Soup	1.4
			Root	Boiled rice	8.1
				Buckwheat pancakes	14.9
				Kimchi	24.3
				Mixed grain porridge	5.4
				Pan broiled	1.4
				Porridge	1.4
				Pot stew	1.4
				Seasoned cooked vegetables (Type IV)	10.8
				Seasoned cooked vegetables (Type V)	5.4
				Soup	13.5
			Whole plant	Kimchi	5.4
				Korean Salad (Type I)	2.7
				Soup	2.7
Campanulaceae	<i>Adenophora triphylla</i> var. <i>japonica</i> (Regel) H. Hara	Jandae	Root	Tea	100.0
	<i>Codonopsis lanceolata</i> (Siebold & Zucc.) Trautv	Deodeok	Root	Korean Salad (Type II)	100.0
	<i>Codonopsis ussuriensis</i> (Rupr. & Maxim.) Hemsl	Sogyongbulal	Root	Brewing	50.0
				Fermentation (Type II)	50.0
	<i>Platycodon grandiflorum</i> (Jacq.) ADC	Doraji	Root	Brewing	50.0
				Fermentation (Type III)	

Contd

Table 2—Wild edible plants investigated—*Contd*

Family name	Scientific name	Korean name	Used part	Preparation	FL			
Caprifoliaceae	<i>Lonicera japonica</i> Thunb.	Indongdeonggul	Flower	Brewing	28.6			
				Fermentation (Type II)	42.9			
			Leaf	Fermentation (Type II)	14.3			
			Stem	Fermentation (Type II)	14.3			
Chenopodiaceae	<i>Beta vulgaris</i> var. <i>cicla</i> L.	Geundae	Young leaf	Soup	50.0			
				Wrapped in leaves	50.0			
Codiaceae	<i>Spinacia oleracea</i> L.	Sigeumchi	Aerial part	Seasoned cooked vegetables (Type I)	100.0			
	<i>Codium fragile</i> (Suringar) Hariot	Cheonggak	Thallus	Cold soup made from water, soy sources and vinegar	33.3			
				Seasoned with condiments	33.3			
Convolvulaceae	<i>Ipomoea batatas</i> (L.) Lam.	Goguma	Petiole	Kimchi	0.6			
				Seasoned cooked vegetables (Type I)	1.9			
				Seasoned cooked vegetables (Type I)	1.9			
				Seasoned cooked vegetables (Type II)	0.6			
				Soup	0.6			
				Tuberous root	Boiled	7.0		
					Boiled rice	14.6		
					Brewing	2.5		
					Chilled buckwheat noodle soup	1.9		
			Clear soup with flour dumplings		8.9			
			Fried		1.9			
			Mixed grain porridge		23.6			
			Pan fried		0.6			
			Porridge		4.5			
			Rice cake		10.2			
			Steamed	20.4				
			Cornaceae	<i>Cornus kousa</i> F.Buerger ex Miquel	Santtalnamu	Fruit	Raw (Type II)	100.0
			Crassulaceae	<i>Sedum sarmentosum</i> Bunge	Dolnamul	Aerial part	Korean Salad (Type I)	100.0
			Cucurbitaceae	<i>Cucumis koreana</i>	Gaegurichamoe	Fruit	Boiled	25.0
Raw (Type II)	75.0							
Korean Salad (Type I)	66.7							
<i>Cucumis sativus</i> L.	Oi	Fruit		Seasoned with condiments	33.3			
<i>Cucurbita moschata</i> Duchesne	Hobak	Fruit		Seasoned cooked vegetables (Type VI)	22.7			
				Soup	27.3			
				Young leaf	Seasoned cooked vegetables (Type I)	4.5		
				Soup	36.4			
				Wrapped in leaves	9.1			
<i>Lagenaria leucantha</i> Rusby	Bak	Flesh		Seasoned cooked vegetables (Type I)	100.0			
<i>Trichosanthes kirilowii</i> Maxim.	Haneultari	Fruit		Boiled	5.9			
				Brewing	5.9			
				Steamed	29.4			
			Tuberous root	Clear soup with flour dumplings	17.6			
			Rice cake	17.6				
			Steamed	23.5				
<i>Trichosanthes kirilowii</i> var. <i>japonica</i> Kitam.	Noranghaneultari	Fruit	Brewing	50.0				
		Tuberous root	Sub-ingredients	50.0				

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Table 2—Wild edible plants investigated—Contd

Family name	Scientific name	Korean name	Used part	Preparation	FL	
Ebenaceae	<i>Diospyros kaki</i> Thunb.	Gamnamu	Fruit	Raw (Type II)	100.0	
Elaeagnaceae	<i>Elaeagnus umbellata</i> Thunb.	Borisunamu	Fruit	Raw (Type II)	100.0	
Euphorbiaceae	<i>Euphorbia humifusa</i> Willd. ex Schltld.	ttangbindae	Whole plant	Tea	100.0	
Fabaceae	<i>Ricinus communis</i> L.	Pimaja	Young leaf	Seasoned cooked vegetables (Type IV)	100.0	
	<i>Amphicarpaea bracteata</i> subsp. <i>edgeworthii</i> (Benth.) H.Ohashi	Saekong	Seed	Boiled rice	100.0	
	<i>Arachis hypogaea</i> L.	Ttangkong	Seed	Roasted	100.0	
	<i>Glycine max</i> (L.) Merr.	Kong	Seed	Boiled rice	16.5	
				Cold bean soup noodles	1.3	
				Fermented soybean (Type II)	8.9	
				Fermented soybean (Type III)	17.7	
				Fermented soybean (Type I)	15.2	
				Hard-boiled	7.6	
				Mixed grain porridge	2.5	
				Porridge	10.1	
				Rice cake	3.8	
				Soup	3.8	
				Seedling	Seasoned cooked vegetables (Type I)	2.5
				Young leaf	Boiled rice	3.8
				Vegetables preserved in Korean traditional sauces (soy sauce)	2.5	
				Wrapped in leaves	3.8	
	<i>Medicago polymorpha</i> L.	Gaejari	Young leaf	Seasoned cooked vegetables (Type I)	60.0	
				Soup	40.0	
	<i>Pisum sativum</i> L.	Wandu	Seed	Boiled	9.1	
				Boiled rice	63.6	
				Porridge	9.1	
				Steamed	18.2	
	<i>Pueraria lobata</i> (Willd.) Ohwi	Chik	Root	Brewing	100.0	
	<i>Vigna angularis</i> (Willd.) Ohwi & H.Ohashi	Pat	Seed	Boiled rice	7.7	
	<i>Vigna radiata</i> (L.) Wilczek	Nokdu	Seed	Rice cake	92.3	
				Boiled rice	14.7	
				Grain flour for rice cake	11.8	
				Porridge	58.8	
			Seedling	Seasoned cooked vegetables (Type I)	14.7	
	<i>Vigna unguiculata</i> (L.) Walp.	Dongbu	Seed	Boiled rice	100.0	
Fagaceae	<i>Castanea crenata</i> Siebold & Zucc.	Bamnamu	Fruit	Boiled	100.0	
	<i>Castanea crenata</i> var. <i>kusakuri</i> (Blume) Nakai	Sanbamnamu	Fruit	Roasted	100.0	
	<i>Quercus acutissima</i> Carruth.	Sangsurinamu	Fruit	Starch jelly	100.0	
Gelidiaceae	<i>Gelidium amansii</i> (J.V.Lamouroux) J.V.Lamouroux	Umutgasari	Thallus	Agar	4.2	
				Boiled rice	8.3	
				Seasoned with condiments	20.8	

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Table 2—Wild edible plants investigated—*Contd*

Family name	Scientific name	Korean name	Used part	Preparation	FL
				Soup	33.3
				Starch jelly	20.8
				Steamed	12.5
Halymeniaceae	<i>Carpopeltis affinis</i> (Harvey) Okamura	Chamkkamaksal	Thallus	Boiled	100.0
Ishigeaceae	<i>Ishige foliacea</i> Okamura	Neolppae	Thallus	Boiled	100.0
	<i>Ishige okamurae</i> Yendo	Pae	Thallus	Boiled	100.0
Lamiaceae	<i>Isodon japonicus</i> (Burm.) Hara	Bangapul	Young leaf	Pan fried	50.0
	<i>Mentha piperascens</i> (Malinv.) Holmes	Bakha	Leaf	Spice Tea	50.0 100.0
	<i>Perilla frutescens</i> var. <i>japonica</i> (Hassk.) Hara	Deulkkae	Inflorescence	Vegetables preserved in Korean traditional sauces (soy sauce)	4.0
			Seed	Soup with sesame	8.0
			Young leaf	Korean Salad (Type I)	16.0
				Seasoned cooked vegetables (Type I)	8.0
				Vegetables preserved in Korean traditional sauces (soy sauce)	16.0
				Wrapped in leaves	48.0
Lardizabalaceae	<i>Akebia quinata</i> (Houtt.) Decne.	Eureumdeonggul	Fruit	Raw (Type II)	100.0
Lauraceae	<i>Cinnamomum camphora</i> (L.) J.Presl	Noknamu	Bark	Tea	25.0
			Leaf	Tea	25.0
			Root	Tea	25.0
			Stem	Tea	25.0
	<i>Cinnamomum loureirii</i> Nees	Yukgyenam	Bark	Spice Tea	50.0 50.0
	<i>Litsea japonica</i> (Thunb.) Juss.	Kkamagwikkamnamu	Fruit	Raw (Type IV)	100.0
Liliaceae	<i>Allium cepa</i> L.	Yangpa	Bulb	Pan broiled Spice Tea Vegetables preserved in Korean traditional sauces (soy sauce)	12.5 25.0 12.5 50.0
	<i>Allium fistulosum</i> L.	Pa	Leaf	Kimchi Pan fried Spice Vegetables preserved in Korean traditional sauces (soy sauce)	26.1 8.7 37.0 10.9
			Root	Porridge	8.7
			Seed	Vegetables preserved in Korean traditional sauces (soy sauce)	8.7
	<i>Allium macrostemon</i> Bunge	Sandalrae	Whole plant	Kimchi Seasoned cooked vegetables (Type I) Vegetables preserved in brine Vegetables preserved in Korean traditional sauces (soy sauce)	20.0 20.0 40.0 20.0
	<i>Allium monanthum</i> Maxim.	Dalrae	Whole plant	Kimchi Korean Salad (Type I) Korean Salad (Type II) Seasoned cooked vegetables (Type I) Vegetables preserved in Korean traditional sauces (soy sauce)	38.5 23.1 7.7 20.5 10.3
	<i>Allium scorodorpasum</i> var. <i>viviparum</i>	Maneul	Bulb	Kimchi	10.2

Contd

Table 2—Wild edible plants investigated—Contd

Family name	Scientific name Regel	Korean name	Used part	Preparation	FL
				Spice	50.8
				Vegetables preserved in Korean traditional sauces (soy sauce)	25.4
			Young leaf	Kimchi	3.4
				Seasoned cooked vegetables (Type VII)	3.4
				Seasoned cooked vegetables (Type I)	3.4
				Vegetables preserved in Korean traditional sauces (soy sauce)	3.4
	<i>Allium tuberosum</i> Rottler ex Spreng.	Buchu	Aerial part	Kimchi	10.0
				Korean Salad (Type I)	30.0
				Pan fried	20.0
				Seasoned cooked vegetables (Type I)	10.0
				Spice	30.0
	<i>Allium wakegi</i> Araki	Jjokpa	Leaf	Kimchi	50.0
				Spice	50.0
	<i>Hemerocallis fulva</i> (L.) L.	Wonchuri	Young leaf	Seasoned cooked vegetables (Type I)	100.0
	<i>Polygonatum odoratum</i> var. <i>pluriflorum</i> (Miq.) Ohwi	Dunggulre	Rhizome	Roasted	20.0
	<i>Scilla scilloides</i> (Lindl.) Druce	Mureut	Root	Tea	80.0
				Boiled	94.4
				Boiled rice	5.6
	<i>Smilax china</i> L.	Cheongmiraedeong gul	Fruit	Raw (Type II)	50.0
			Stem	Raw (Type IV)	50.0
Malvaceae	<i>Gossypium indicum</i> Lam.	Mokhwa	Fruit	Raw (Type IV)	100.0
	<i>Malva verticillata</i> L.	Auk	Young leaf	Soup	100.0
Meliaceae	<i>Melia azedarach</i> L.	Meolguseulnamu	Fruit	Raw (Type IV)	90.0
			Rhizodermis	Taffy	10.0
Moraceae	<i>Cudrania tricuspidata</i> (Carr.) Bureau ex Lavallee	Kkujippongnamu	Fruit	Brewing	100.0
	<i>Ficus carica</i> L.	Muhwagwanamu	Fruit	Raw (Type II)	100.0
	<i>Morus alba</i> L.	Ppongnamu	Fruit	Brewing	20.0
				Fermentation (Type II)	20.0
				Raw (Type II)	60.0
Musaceae	<i>Musa basjoo</i> Siebold & Zucc.	Pacho	Petiole	Seasoned cooked vegetables (Type I)	10.5
				Vegetables preserved in Korean traditional sauces (soy sauce)	31.6
			Rhizome	Vegetables preserved in Korean traditional sauces (soybean paste)	36.8
			Young leaf	Wrapped in leaves	21.1
Nymphaeaceae	<i>Nelumbo nucifera</i> Gaertn.	Yeonkkot	Rhizome	Hard-boiled	100.0
Paeoniaceae	<i>Paeonia japonica</i> (Makino) Miyabe & Takeda	Baekjakyak	Root	Brewing	100.0
Pedaliaceae	<i>Sesamum indicum</i> L.	Chamkkae	Seed	Condiment	54.5
				Oil	9.1
				Porridge	34.5
				Sub-ingredients	1.8
Pinaceae	<i>Pinus densiflora</i> Siebold & Zucc.	Sonamu	Endodermis	Boiled rice	12.5
				Raw (Type III)	10.0
			Needle	Brewing	10.0
				Fermentation (Type II)	10.0
				Fermentation (Type III)	5.0
				Sub-ingredients	7.5
				Tea	10.0

Contd

Table 2—Wild edible plants investigated—*Contd*

Family name	Scientific name	Korean name	Used part	Preparation	FL
			Shoot	Brewing	30.0
			Sprout	Brewing	30.0
				Fermentation (Type II)	5.0
Plantaginaceae	<i>Plantago asiatica</i> L.	Jilgyeongi	Young leaf	Kimchi	50.0
				Wrapped in leaves	50.0
Poaceae	<i>Echinochloa utilis</i> Ohwi & Yabuno	Pi	Seed	Boiled rice	63.6
				Porridge	18.2
				Rice cake	18.2
	<i>Hordeum vulgare</i> var. <i>hexastichon</i> (L.) Asch.	Bori	Seed	A sweet drink made from fermented rice	2.4
				Boiled rice	36.6
				Brewing	6.7
				Clear soup with flour dumplings	0.6
				Freshy juice	1.8
				Malted barley seedling	2.4
				Mixed grain porridge	11.0
				Porridge	7.3
				Powder made of roast grain	1.2
				Rice cake	10.4
				Roasted	2.4
				Steamed	1.8
			Seed coat	Boiled rice	2.4
				Clear soup with flour dumplings	4.3
				Mixed grain porridge	1.2
				Rice cake	7.3
	<i>Miscanthus sinensis</i> var. <i>purpurascens</i> (Andersson) Rendle	Eoksae	Stem	Raw (Type IV)	100.0
	<i>Oryza sativa</i> L. var. <i>sativa</i>	Byeo	Seed	Boiled rice	100.0
	<i>Oryza sativa</i> var. <i>glutinosa</i> Blanco	Chalbyeo	Seed	Boiled rice	50.0
				Brewing	50.0
	<i>Oryza sativa</i> var. <i>terrestis</i> Makino	Sandu	Seed	Boiled rice	70.2
				Rice cake	29.8
	<i>Phyllostachys bambusoides</i> Siebold & Zucc.	Wangdae	Bamboo shoot	Seasoned cooked vegetables (Type I)	100.0
	<i>Pseudosasa japonica</i> (Siebold & Zucc. ex Steud.) Makino	Idea	Bamboo shoot	Roasted	50.0
	<i>Setaria italica</i> (L.) P.Beauv.	Jo	Seed	Seasoned cooked vegetables (Type III)	50.0
				A sweet drink made from fermented rice	7.1
				Boiled rice	38.4
				Brewing	15.2
				Clear soup with flour dumplings	0.9
				Mixed grain porridge	18.8
				Porridge	2.7
				Rice cake	17.0
	<i>Sorghum bicolor</i> (L.) Moench	Susu	Seed	Boiled rice	70.0
				Rice cake	30.0
	<i>Triticum aestivum</i> L.	Mil	Seed	Boiled rice	3.6
				Bread	7.3
				Clear soup with flour dumplings	1.8
				Fermentation (Type I)	1.8
				Mixed grain porridge	5.5
				Noodles	10.9

Contd

Table 2—Wild edible plants investigated—Contd

Family name	Scientific name	Korean name	Used part	Preparation	FL
				Rice cake	9.1
				Soup	1.8
			Wheat bran	Boiled rice	5.5
				Clear soup with flour dumplings	5.5
				Mixed grain porridge	16.4
				Noodles	5.5
				Porridge	12.7
				Rice cake	12.7
	<i>Zea mays</i> L.	Oksusu	Fruit	Boiled	53.3
				Boiled rice	13.3
Polygonaceae	<i>Fagopyrum esculentum</i> Moench	Memil	Style	Tea	33.3
			Flower	Honey	0.6
			Seed	Boiled rice	1.3
				Buckwheat pancakes	20.1
				Chopped noodles	6.3
				Clear soup with flour dumplings	14.5
				Flour cake	0.6
				Mixed grain porridge	5.7
				Noodles	2.5
				Pan fried	3.8
				Porridge	7.5
				Rice cake	13.8
				Soup	3.8
				Starch jelly	13.8
			Young leaf	Korean Salad (Type I)	2.5
				Seasoned cooked vegetables (Type I)	3.1
	<i>Fallopia multiflora</i> (Thunb.) Haraldson	Hasuo	Root	Brewing	100.0
Portulacaceae	<i>Portulaca oleracea</i> L.	Soebireum	Aerial part	Seasoned cooked vegetables (Type I)	100.0
Punicaceae	<i>Punica granatum</i> L.	Seokryunamu	Fruit	Fermentation (Type II)	50.0
				Fermentation (Type III)	50.0
				Vinegar	50.0
Rhamnaceae	<i>Hovenia dulcis</i> Thunb.	Heotgaenamamu	Stem	Tea	100.0
	<i>Sageretia theezans</i> (L.) Brongn.	Sangdongnamu	Fruit	Brewing	36.4
				Raw (Type II)	63.6
	<i>Zizyphus jujuba</i> var. <i>inermis</i> (Bunge) Rehder	Daechunamu	Fruit	Tea	100.0
Rosaceae	<i>Duchesnea indica</i> (Andr.) Focke	Baemttalgi	Fruit	Raw (Type II)	100.0
	<i>Eriobotrya japonica</i> (Thunb.) Lindl.	Bipanamu	Fruit	Raw (Type II)	100.0
	<i>Potentilla chinensis</i> Ser. var. <i>chinensis</i>	Ttakjikkot	Root	Brewing	100.0
	<i>Prunus davidiana</i> (Carriere) Franch.	Sanboksanamamu	Fruit	Raw (Type II)	100.0
	<i>Prunus mume</i> Siebold & Zucc. for. <i>mume</i>	Maesilnamu	Fruit	Condiment	100.0
	<i>Prunus persica</i> (L.) Batsch for. <i>persica</i>	Boksanamamu	Fruit	Raw (Type II)	100.0
	<i>Prunus tomentosa</i> Thunb.	Aengdonamu	Fruit	Brewing	50.0
				Raw (Type II)	50.0
	<i>Pyrus pyrifolia</i> var. <i>culta</i> (Makino) Nakai	Baenamamu	Fruit	Tea	100.0

Contd

Table 2—Wild edible plants investigated—*Contd*

Family name	Scientific name	Korean name	Used part	Preparation	FL
	<i>Rosa multiflora</i> Thunb. var. <i>multiflora</i>	Jjilrekkot	Sprout	Raw (Type IV)	100.0
	<i>Rubus coreanus</i> Miq.	Bokbunjattalgi	Fruit	Brewing	50.0
	<i>Rubus crataegifolius</i> Bunge	Santtalgi	Fruit	Raw (Type II)	50.0
				Brewing	18.8
				Fermentation (Type II)	6.3
				Freshy juice	6.3
				Raw (Type II)	68.8
	<i>Rubus croceacanthus</i> H.Lev.	Geomeunttalgi	Fruit	Brewing	100.0
	<i>Rubus hirsutus</i> Thunb.	Jangttalgi	Fruit	Brewing	16.7
				Raw (Type II)	83.3
	<i>Rubus parvifolius</i> L. f. <i>parvifolius</i>	Meongseokttalgi	Fruit	Brewing	60.0
				Raw (Type II)	40.0
Rutaceae	<i>Sanguisorba officinalis</i> L.	Oipul	Root	Brewing	100.0
	<i>Citrus aurantium</i> L.	Gwanggyul	Fruit	Raw (Type II)	100.0
	<i>Citrus erythrosa</i> Hort. et Tanaka	Dongjeonggyulnamu	Fruit	Raw (Type II)	100.0
	<i>Citrus hassaku</i> Hort. ex Tanaka	Palsak	Fruit	Raw (Type II)	50.0
				Tea	50.0
	<i>Citrus junos</i> Siebold ex Tanaka	Yujanamu	Fruit	Fermentation (Type II)	3.4
				Raw (Type II)	75.9
				Tea	17.2
			Pericarp	Tea	3.4
	<i>Citrus natsudaidai</i> Hayata	Hagyul	Fruit	Raw (Type II)	88.2
				Tea	11.8
	<i>Citrus platyamamma</i> Tanaka	Byeonggyulnamu	Fruit	Raw (Type II)	100.0
	<i>Citrus tenuissima</i> Tanaka.	Dangyujanamu	Fruit	Fermentation (Type II)	16.7
				Raw (Type II)	66.7
				Tea	16.7
	<i>Citrus unshiu</i> S.Marcov.	Gyul	Fruit	Raw (Type II)	91.7
			Pericarp	Tea	8.3
	<i>Fortunella japonica</i> var. <i>margarita</i> (Swingle) Makino	Geumgam	Fruit	Raw (Type II)	100.0
	<i>Phellodendron amurense</i> Rupr.	Hwangbyeoknamu	Bark	Brewing	100.0
	<i>Zanthoxylum piperitum</i> (L.) DC.	Chopinamu	Young leaf	Spice	73.8
				Vegetables preserved in Korean traditional sauces (soy sauce)	11.9
				Vegetables preserved in Korean traditional sauces (soybean paste)	14.3
Sargassaceae	<i>Hizikia fusiformis</i> (Harvey) Okamura	Tot	Thallus	Boiled rice	39.2
				Canned food	1.4
				Cold soup made from water, soy sources and vinegar	6.8
				Korean Salad (Type II)	4.1
				Mixed grain porridge	6.8
				Porridge	5.4
				Seasoned cooked vegetables (Type I)	32.4
				Seasoned cooked vegetables (Type III)	1.4
				Seasoned cooked vegetables (Type IV)	2.7
	<i>Sargassum fulvellum</i> (Turner) C.	Mojaban	Thallus	Seasoned with condiments	5.3

Contd

Table 2—Wild edible plants investigated—Contd

Family name	Scientific name	Korean name	Used part	Preparation	FL		
Schisandraceae	Agardh			Soup	94.7		
	<i>Schisandra chinensis</i> (Turcz.) Baill.	Omija	Fruit	Brewing	40.0		
				Tea	13.3		
			Root	Brewing	20.0		
				Tea	6.7		
Scrophulariaceae	<i>Rehmannia glutinosa</i> (Gaertn.) Libosch. ex Steud.	Jihwang	Stem	Brewing	20.0		
			Root	Brewing	100.0		
Solanaceae	<i>Capsicum annuum</i> L.	Gochu	Fruit	Korean Salad (Type II)	16.7		
				Spice	50.0		
				Spice	50.0		
				Young leaf	Seasoned cooked vegetables (Type I)	16.7	
					Seasoned cooked vegetables (Type IV)	16.7	
		<i>Lycium chinense</i> Mill.	Gugijanamu	Fruit	Brewing	66.7	
					Tea	33.3	
		<i>Solanum melongena</i> L.	Gaji	Fruit	Seasoned cooked vegetables (Type □)	100.0	
		<i>Solanum tuberosum</i> L.	Gamja	Tuber	Boiled	12.5	
					Boiled rice	4.2	
				Pan broiled	25.0		
				Pot stew	4.2		
				Steamed	54.2		
Taxaceae	<i>Torreya nucifera</i> (L.) & Zucc.	Siebold Bijanamu	Fruit	Raw (Type IV)	100.0		
Ulmaceae	<i>Celtis sinensis</i> Pers.	Paengnamu	Fruit	Raw (Type IV)	100.0		
	<i>Ulmus davidiana</i> var. <i>japonica</i> (Rehder) Nakai	Neureupnamu	Root	Clear soup with flour dumplings	50.0		
Ulvaceae	<i>Enteromorpha linza</i> (Linnaeus) J. Agardh	Ipparae	Thallus	PorrIDGE	12.5		
				Rice cake	37.5		
				Boiled rice	100.0		
Vitaceae	<i>Vitis coignetiae</i> Pulliat ex Planch.	Meoru	Fruit	Raw (Type II)	100.0		
Zingiberaceae	<i>Zingiber mioga</i> (Thunb.) Roscoe	Yangha	Inflorescence	Korean Salad (Type I)	5.4		
				Korean Salad (Type II)	10.8		
				Seasoned cooked vegetables (Type I)	18.9		
				Seasoned cooked vegetables (Type III)	16.2		
				Soup	24.3		
				Vegetables preserved in Korean traditional sauces (red pepper paste)	10.8		
				Vegetables preserved in Korean traditional sauces (soy sauce)	2.7		
				Leaf	Wrapped in leaves	10.8	

Annexed explanation: Fermentation (Type I): yeast fermentation; Fermentation (Type II): sugar fermentation; Fermentation (Type III): honeycomb fermentation; Fermented soybean (Type I): soy sauce; Fermented soybean (Type II): red pepper paste; Fermented soybean (Type III): soybean paste; Korean Salad (Type I): seasoned raw; Korean Salad (Type II): dipped raw into red pepper paste and soybean paste; Raw (Type I): eating the uncooked plant parts; Raw (Type II): fruit; Raw (Type III): foods eaten during a famine; Raw (Type IV): flower or spikelet; Seasoned cooked vegetables (Type I): seasoned after partial boiling or boiling; Seasoned cooked vegetables (Type II): pan broil after partial boiling or boiling; Seasoned cooked vegetables (Type III): dip into soy sauce after partial boiling or boiling; Seasoned cooked vegetables (Type IV): seasoned after drying and partial boiling or boiling; Seasoned cooked vegetables (Type V): pan broil after drying and partial boiling or boiling; Seasoned cooked vegetables (Type VI): stew after partial boiling or boiling; Seasoned cooked vegetables (Type VII): raw after pan broil

Table 3—Numbers of species and mention according to each family

Family name	Number of species	Number of mentions (% of the total)
Poaceae	12	454 (16.69)
Liliaceae	11	220 (8.09)
Rutaceae	11	191 (7.02)
Brassicaceae	5	182 (6.69)
Asteraceae	15	180 (6.62)
Polygonaceae	2	161 (5.92)
Fabaceae	9	160 (5.88)
Convolvulaceae	1	157 (5.77)
Sargassaceae	2	93 (3.42)
Rosaceae	15	92 (3.38)
Alariaceae	2	90 (3.31)
Solanaceae	4	59 (2.17)
Pedaliaceae	1	55 (2.02)
Cucurbitaceae	6	52 (1.91)
Pinaceae	1	40 (1.47)
Apiaceae	5	38 (1.40)
Zingiberaceae	1	37 (1.36)
Araceae	2	36 (1.32)
Moraceae	3	31 (1.14)
Lamiaceae	3	28 (1.03)
Rhamnaceae	3	25 (0.92)
Gelidiaceae	1	24 (0.88)
Lauraceae	3	22 (0.81)
Ishigeaceae	2	21 (0.77)
Meliaceae	1	20 (0.74)
Aspleniaceae	1	19 (0.70)
Lardizabalaceae	1	19 (0.70)
Musaceae	1	19 (0.70)
Araliaceae	2	17 (0.62)
Ulmaceae	2	15 (0.55)
Schisandraceae	1	15 (0.55)
Amaranthaceae	2	14 (0.51)
Ulvaceae	1	13 (0.48)
Vitaceae	1	12 (0.44)
Malvaceae	2	11 (0.40)
Campanulaceae	4	9 (0.33)
Elaeagnaceae	1	9 (0.33)
Fagaceae	3	8 (0.29)
Cornaceae	1	8 (0.29)
Dioscoreaceae	1	8 (0.29)
Caprifoliaceae	1	7 (0.26)
Euphorbiaceae	2	5 (0.18)
Actinidiaceae	1	5 (0.18)
Taxaceae	1	5 (0.18)
Chenopodiaceae	2	4 (0.15)
Ebenaceae	1	4 (0.15)
Plantaginaceae	1	4 (0.15)
Punicaceae	1	4 (0.15)
Codiaceae	1	3 (0.11)
Crassulaceae	1	3 (0.11)
Halymeniaceae	1	3 (0.11)
Scrophulariaceae	1	3 (0.11)
Asclepiadaceae	1	2 (0.07)
Portulacaceae	1	2 (0.07)
Boraginaceae	1	1 (0.04)
Nymphaeaceae	1	1 (0.04)
Paoniaceae	1	1 (0.04)

Among the favorite plants, 33 species, which were used as beverages, included the root of *Achyranthes japonica* (Miq.) Nakai, the seed of *Setaria italica* Beauvois (*omegisul* in Korean), and the fruit of *Cudrania tricuspidata* (Carr.) Bureau ex Lavallee. Plants used as a tea totaled 19 species, including the fruit of *Citrus tenuissima* Tanaka.

For its unique use, *Fagopyrum esculentum* Moench was used as a main ingredient in buckwheat pancakes (*bingddeok* in Korean).

Our analysis reveals that a total of 31 different kinds of plant-parts were consumed as edible materials. Seeds (including seed coats and bran) were the most frequently used plant-parts, constituting 28.2% of the whole, followed by leaves at 19.9% which include young leaves, petioles, sprouts, shoots, young fronds, bamboo shoots, and needles, while fruit at 16.7%, including the pericarp and flesh, as well as other plant-parts (Fig. 3).

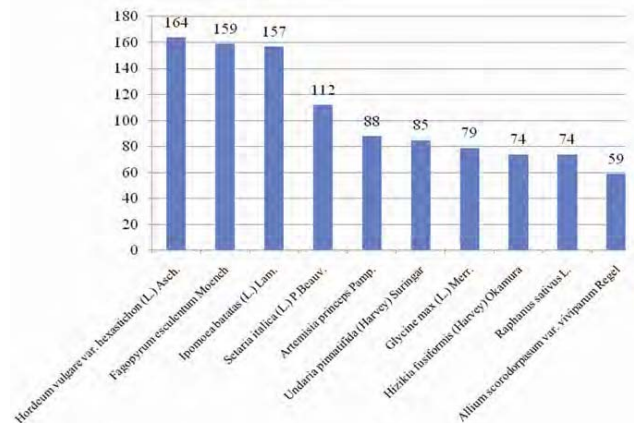


Fig. 2—Species frequently mentioned by the informants

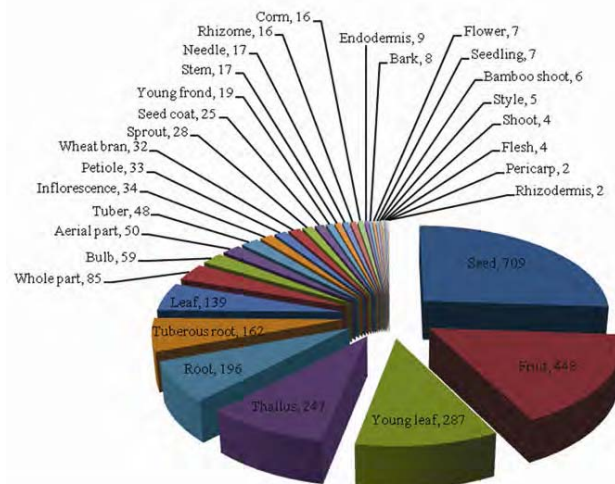


Fig. 3—Numbers of species according to used plant-parts

Sixty eight preparatory methods were utilized for the 164 species of wild edible plants. Seasoned cooked vegetables (Type I) were the most frequent method, constituting 37 species, collecting 176 recordings followed, by the brewing of 37 species with 160 recordings, 29 species eaten raw (Type II) with 277 recordings, 26 species eaten as a boiled rice, recorded 309 times, and 25 species of soup mentioned 203 times.

In this study, the 68 preparatory methods are much higher than the results of the ethnopharmacological studies, with 26 methods found in both the southern and western regions of North Jeolla Province in Korea^{10,11}. The major difference in the methods observed is largely due to the variations in edible and medicinal usages.

Some preparatory methods were divided into several sub-preparatory methods, such as six kinds of seasoned cooked vegetables, four kinds of vegetables preserved in Korean traditional sauces, three kinds of fermentation, three kinds of fermented soybean, and two kinds of Korean salads (Annexed explanation of Table 2).

Quantitative analysis

The fidelity level (FL) is useful for identifying the informants' most preferred plant species and its preparatory methods. FL values vary from 0.6% to 100%. Generally, a FL of 100% for a specific plant indicates that all of the use-reports record the plant being used the same way²⁹. This research classifies 55 species of plants with fidelity levels of 100%, even without considering plants

that were mentioned only once for better accuracy (Table 2). This information means that the informants had a tendency to rely on one specific plant species with one preparatory method than several preparatory methods.

Special attention was given to important species (N, Np) of plants with a FL of 100%: *Citrus aurantium* L. (34, 34), *Eriobotrya japonica* (Thunb.) Lindl. (28, 28), *Akebia quinata* (Houtt.) Decne. (19, 19), *Ishige okamurae* Yendo (17, 17), *Enteromorpha linza* (Linnaeus) J. Agardh (13, 13), *Vitis coignetiae* Pulliat ex Planch. (12, 12), and *Gossypium indicum* Lam. (10, 10) (Table 2).

Plant species using a variety of preparatory methods though having lower FL values were *Hordeum vulgare* var. *hexastichon* (L.) Asch. with 16 methods, *Fagopyrum esculentum* Moench, *Ipomoea batatas* (L.) Lam., *Raphanus sativus* L. each at 15 methods, *Glycine max* (L.) Merr. and *Triticum aestivum* L. at 14 methods, and *Artemisia princeps* Pamp. at 12 methods. Certainly, these species will be able to develop as functional foods.

As to the ICF, the 21 categories regarding the preparatory methods depicting the highest degree of consensus (ICF 1.00) were as follows: all kinds of fermented soybean, chopped noodles, raw (Type I), seasoned cooked vegetables (Type VI), and various kinds of oil. These results can be interpreted to mean that people have a large amount of traditional knowledge about the processing of wild edible plants. However, seasoned cooked vegetables (Type II) had the lowest degree of consensus (Table 4).

Table 4—Categories of preparation method and ICF

Preparation	Taxons	Use citations	ICF	Preparation	Taxons	Use citations	ICF
Fermented soybean (Type III)	1	14	1.00	Vegetables preserved in Korean traditional sauces (soybean paste)	3	20	0.89
Fermented soybean (Type I)	1	12	1.00	Seasoned with condiments	5	36	0.89
Chopped noodles	1	10	1.00	Soup	25	203	0.88
Fermented soybean (Type II)	1	7	1.00	Clear soup with flour dumplings	8	59	0.88
Raw (Type I)	1	6	1.00	Boiled	12	88	0.87
Oil	1	5	1.00	Porridge	17	118	0.86
Seasoned cooked vegetables (Type VI)	1	5	1.00	Raw (Type IV)	9	58	0.86
Bread	1	4	1.00	Kimchi	14	86	0.85
Grain flour for rice cake	1	4	1.00	Pan broiled	3	14	0.85
Half-moon shaped rice cake steamed on a layer of leaf	1	4	1.00	Seasoned cooked vegetables (Type IV)	5	23	0.82
Malted barley seedling	1	4	1.00	Vegetables preserved in Korean traditional sauces (soy sauce)	12	58	0.81
Raw (Type III)	1	4	1.00	Seasoned cooked vegetables (Type I)	37	176	0.79
Vegetables preserved in brine	1	4	1.00	Brewing	37	160	0.77
Vegetables preserved in Korean traditional sauces (red pepper paste)	1	4	1.00	Seasoned cooked vegetables (Type III)	6	22	0.76

Contd.

Table 4—Categories of preparation method and ICF —*Contd.*

Preparation	Taxons	Use citations	ICF	Preparation	Taxons	Use citations	ICF
Chilled buckwheat noodle soup	1	3	1.00	Flour cake	2	5	0.75
Fried	1	3	1.00	Korean Salad (Type I)	12	41	0.73
Sub-ingredients of soup	1	3	1.00	Hard-boiled	3	8	0.71
Powder made of roast grain	1	2	1.00	Wrapped in leaves	16	53	0.71
Seasoned cooked vegetables (Type VII)	1	2	1.00	Pan fried	6	18	0.71
Taffy	1	2	1.00	Tea	21	65	0.69
Vinegar	1	2	1.00	Fermentation (Type □)	9	26	0.68
Buckwheat pancakes	2	43	0.98	Korean Salad (Type □)	5	13	0.67
Condiment	3	33	0.94	Soup with sesame	2	4	0.67
Starch jelly	3	32	0.94	Cold soup made from water, soy sauces and vinegar	4	8	0.57
Mixed grain porridge	10	129	0.93	Roasted	5	10	0.56
Seasoned cooked vegetables (Type V)	2	15	0.93	Freshy juice	4	7	0.50
Rice cake	13	167	0.93	Sub-ingredients	3	5	0.50
Steamed	8	89	0.92	Pot stew	2	3	0.50
Boiled rice	26	309	0.92	Fermentation (Type II)	3	4	0.33
Noodles	2	13	0.92	Seasoned cooked vegetables (Type II)	4	5	0.25
A sweet drink made from fermented rice	2	12	0.91	Honey	2	2	0.00
Raw (Type II)	29	277	0.90				
Spice	11	96	0.89				

Conclusion

The field investigative method used semi-structured questionnaires and adopted the PRA method for this study and produced exceptional results in investigating and analyzing traditional wild edible plants. This investigated method will be widely used as a means to discover new edible resources in specific areas.

This study has emphasized to record and conserve traditional knowledge of wild edible plants because of its nutritional and food values. The utility and stability of the traditional preparatory methods have been considerably valued by local residents for many centuries.

Particularly, the 55 species tabulating a FL of 100% will exhibit a high probability for the development of new food resources through further study.

The numerous usages of wild edible plants are distinct examples concerning the traditional knowledge of a local community. Local residents and their communities are proud of their foods and gather wild edible plants for cooking and other personal needs. However, the globalization of all kinds of food in the world has caused an increase of the same or similar foods in various local communities of other cultures. Presently, the results of this study will greatly enhance the value of traditional knowledge of local communities concerning wild edible plants and provide various nutritional sources for residents within all communities.

Acknowledgement

The authors are extremely grateful to all the informants for sharing their oral traditional knowledge during the fieldwork surveys.

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