

Original article

Korean diet: Characteristics and historical background



Soon Hee Kim ^a, Myung Sunny Kim ^{a, b}, Myoung Sook Lee ^c, Yong Soon Park ^d,
Hae Jeong Lee ^e, Soon-ah Kang ^f, Hyun Sook Lee ^g, Kyung-Eun Lee ^h, Hye Jeong Yang ^a,
Min Jung Kim ^a, Young-Eun Lee ^{i, *}, Dae Young Kwon ^{a, b, *}

^a Korea Food Research Institute, Songnam, South Korea

^b Department of Food and Bio-technology, University of Science and Technology, Songnam, South Korea

^c Department of Food and Nutrition, SungShin Women's University, Seoul, South Korea

^d Department of Food and Nutrition, Hanyang University, Seoul, South Korea

^e Department of Food and Nutrition, Gachon University, Songnam, South Korea

^f Department of Converting Technology, Hoseo University, Asan, South Korea

^g Department of Food and Nutrition, Dongseo University, Busan, South Korea

^h Department of Food and Nutrition, Seoul Women's University, Seoul, South Korea

ⁱ Department of Nutrition, Wonkwang University, Iksan, South Korea

ARTICLE INFO

Article history:

Received 16 January 2016

Received in revised form

23 January 2016

Accepted 2 February 2016

Available online 15 March 2016

Keywords:

bapsang

fermentation

K-diet

K-food

namul

ABSTRACT

Background: Korea has developed a unique food culture connected to its long agricultural history. Recently, interest in Korean food, especially regarding its health benefits, has greatly increased. However, there are insufficient resources and research available on the characteristics and definitions of Korean cuisine.

Methods: Researchers and professors of the food and nutritional sciences in Korea began working together in April 2015 in order to establish cohesive definitions and concepts to be used in dialogue related to the Korean diet (K-diet). The 100 most representative Korean dishes (K-food) were selected by evaluating their role in tradition, culture, and health promotion.

Results: Although the K-diet has been widely discussed in regard to raw ingredients, traditional cooking methods and technology, fundamental principles, and knowledge, it would be valuable to preserve the traditional methods and knowledge of Korean foods rather than focus on the raw materials themselves. Korean meals have historically been served with *bap* (cooked rice), *kuk* (dishes with broth), *kimchi*, and *banchan* (side dishes) to be consumed at the same time. As traditionally baking or frying were not common cooking methods, Koreans tended to use fermenting, boiling, blanching, seasoning, and pickling. Among these methods, the most characteristic method is fermentation. The process of fermentation enriches food flavors and preserves foods.

Conclusion: The K-diet is composed of *bap* (cooked-rice) and *kuk*, and various *banchan* with one serving called *bapsang*. *Kimchi* is always served at every meal. The principal aspects of the K-diet include proportionally high consumption of vegetables, moderate to high consumption of legumes and fish, and low consumption of red meat. *Banchan* is mostly seasoned with various *jang* (fermented soy products), medicinal herbs, and sesame or perilla oil.

Copyright © 2016, Korea Food Research Institute, Published by Elsevier. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Korea, located in Northeast Asia, has an agricultural history that has continued for > 5,000 years despite its close proximity to China.

* Corresponding authors. Department of Nutrition, Wonkwang University, 460 Iksandaero, Iksan, Chonbuk-do, South Korea (Y.-E. Lee); Korea Food Research Institute, 62 Anyangpangkyo-ro 1201-bunkil, Songnam, Kyongki-do, 463-746, South Korea (D.Y. Kwon).

E-mail addresses: yelee@wku.ac.kr (Y.-E. Lee), dykwon@kfri.re.kr (D.Y. Kwon).

The Han Chinese (漢族), who founded the Three Kingdoms (三國), Qin dynasty (秦), Tang dynasty (唐), Song dynasty (宋), and Ming dynasty (明), developed its own language and controlled China until the Qing (清) dynasty emerged. The history of Korea from Kochosun (古朝鮮) and the period of the Three States, including Kokuryo (高句麗), Baekje (百濟), Silla (新羅), to Koryo (高麗) and Chosun (朝鮮), maintained independence from China and developed a unique culture and language. Linguistically, Korean belongs to the Altaic language group along with Japonic, Mongolic, Tungusic, Hungarian, and Finnish languages. Moreover, the

Mongolian spot that is prevalent among Koreans suggests biological differences between Koreans and Chinese. Likewise, Korean food culture has also developed distinctly from Chinese cuisine.

As mentioned above [1], the development of food technology was prompted by the desire to preserve food resources. For example, in China, frying and pickling were the prevalent methods in reducing water content (a_w) to protect against microbial spoilage of food. By contrast, the limited production of cooking oils in Korea led to the development of the fermentation process for food preservation, which utilizes effective microorganisms against microbial spoilage. Although milk was the main ingredient in fermented products, such as cheese and yogurt, in countries with strong livestock industries, the main ingredients in Korean fermented foods were grains and vegetables. This was due to their settled lifestyle and focus on agriculture. Korean food has developed from the necessity of preserving foods during the hot summer and long harsh winter in the Korean peninsula characterized by rocky ocean fronts on the east, south, and west, and by rugged mountains on the north. This geographical isolation from neighboring countries and distinct weather allowed the early Korean people to develop most enduring cultural legacies of the Korean diet (K-diet). In this environment, salted beans, fish, and vegetables were preserved by fermentation. Historically, Koreans have made various *jang* (fermented soy products) [2], including *kanjang* (soy sauce), *doenjang* (soybean paste) and *gochujang* (red pepper paste), and diverse types of *kimchi* [3] with vegetables. These unique fermentation techniques are examples of authentic Korean food [4].

2. Materials and methods

Korea has developed unique foods, as well as a food culture that is fundamentally distinct from Chinese or Japanese food cultures. Food is one of the key elements of culture and presents possibilities for promulgation of various cultural contents. However, this effect has been diminished by a lack of cohesive definitions and concepts in Korean food culture. Therefore, it is necessary to establish consistent definitions and concepts to be used in relation to the K-diet.

As leading healthy lifestyles has become an important global trend, renowned healthy diets, such as the Mediterranean [5] and Nordic [6] diets, have been studied and promoted globally. Moreover, studies on the French diet have reported an interesting epidemiological observation called the French paradox [7], referencing that French people have low incidence of cardiovascular disease (CVD) despite high consumption of saturated fats in their diet. It is presumed that the French lifestyle and consumption of red wine and resveratrol lowers their incidence rates of CVD [8].

Research has suggested the health benefits of Korean food are due to the diversity of ingredients and cooking methods used in Korean cuisine [9]. The average life expectancy in Korea is > 80 years despite the popularity of high salt dishes such as *kuk*, *tang*, and *kimchi*. Excessive salt consumption is a risk factor for CVD. This phenomenon has been referred to as the Korean paradox [10] and some researchers have claimed that the paradox can be explained by the regular consumption of vegetables and the types of salt used in Korean cuisine. Historically, Koreans have used unrefined, baked, or fermented salts, which may have different health effects compared with refined salt in relation to CVD. Research has shown that consumption of fermented foods such as *kimchi* is not associated with high blood pressure [11]. Moreover, high potassium intake assists in discharging salt out of the body and, as a result, reduces the risk of CVD [10].

As problems of overnutrition have become prevalent, the K-diet [12], characterized by the high consumption of *namul* (seasoned vegetable dishes) and fermented foods, can bring about positive impacts worldwide. Although the health benefits of the K-diet have

been supported by research, resources are needed to further understand the elements of balanced meals in the K-diet. Although there are some definitions and characteristics of individual Korean dishes available, there is not a holistic approach to categorizing the data in order to explain the health benefits of Korean food.

The establishment of consistent definitions and concepts in Korean food should be based on systematic and scientific research in order to promote the health benefits of Korean food globally. Therefore, scholars of the food and nutritional sciences have collaborated and announced the “Seoul Declaration on K-diet: Korean Heritage and Healthiness” [13]. In the postindustrial age, culture is one of the key elements of a country's competitiveness in the global market. Therefore, this paper will discuss definitions, characteristics, representative Korean foods (K-food) that have been introduced in the Seoul declaration, and embody fundamental aspects of Korean meal table [12].

3. Results

3.1. The Definition of K-diet

K-diet and K-food are two separate concepts. Although the concept of K-diet is used to represent traditional Korean food culture, cooking methods, and dietary habits and patterns, K-food are the food constituents of K-diet. K-food and K-diet are often described as Korean cuisine, Korean diet, or traditional Korean food. A few elements of defining food culture have been put forward, such as frequently consumed foods, raw ingredients or materials, technology or cooking methods, and the fundamental principles found in the country's dietary patterns. These views put differing emphasis on food and diet.

The first aspect introduced above, which views K-food as frequently consumed foods, would allow popular foods among youth, such as *jajangmyeon*, pizza, or fried chicken, to be considered K-food. Therefore, a standard time period criteria for Korean food would be needed but introduces unnecessary complexity. The second idea, which has often been cited by the Korean Ministry of Agriculture, suggests that K-food should be made with ingredients (agricultural products) produced only in Korea [14]. According to this view, *kimchi* made from imported cabbage would not be considered as K-food. The third view proposes the use of traditional cooking technology as the key element of K-food in attempt to overcome this issue. Although it is important to preserve traditional Korean cooking methods, this point of view focuses only on the physical and materialistic aspects of methods. As this view overlooks technological advances, *doenjang* fermented in jars other than *hangari* (Korean earthenware crock) would not qualify as K-food.

Therefore, when discussing K-food and K-diet, one should focus on whether certain dishes are made with traditionally used ingredients regardless of the origin of produce, follow traditional cooking methods and principles, and lastly, preserve the spirit behind traditional Korean food practices. The definition of traditional Korean food by Chung [14,15] reflects these ideas: “Food made with raw materials or ingredients that have been traditionally used in Korea, or with the similar ingredients, use authentic or other similar cooking methods, have historical and cultural characteristics, and have developed and been passed on through people's lives.” This meaning in relation to Korean food has been interpreted as consistency, patience, consideration, beauty, and appreciation for art. In the Seoul Declaration, the definition of K-diet represents the interpretation as below: “K-diet is composed of Bab (cooked-rice) and Kuk, and various Banchan with one serving called bapsang. Kimchi is always served at every meal. The principal aspects of K-diet include proportionally high consumption of fresh or cooked vegetables (Namul), moderate to high consumption of

legumes and fish and low consumption of red meat. *Banchan* is mostly seasoned with various *Jang* (fermented soy products), medicinal herbs, and sesame or perilla oil.”

The traditional ingredients of K-food consist of grains and vegetables, however, oceanic regions have used fish and seaweed. Medicinal herbs such as garlic, green onions, and red pepper were also used to enhance flavor and add to the health benefits of food. Korean fermentation technology has played an important role in preserving the food resources above, including legumes, vegetables, and fish. Historically, grains, including rice and barley, were the main source of carbohydrates. Legumes and fish provided protein. Vegetable oils made from sesame or perilla served as a main supply of fat. As metabolic disorders caused by overnutrition have become a serious problem, the K-diet can be promoted as a healthy alternative. From a sociocultural perspective, the structure of the traditional Korean meal [12], which allows people to share various *banchan* together, has served an educational role in teaching common etiquette and courtesy to be practiced while eating communal meals (see Fig. 1 in Kwon et al [12]).

3.2. Characteristics of K-diet

The characteristics of K-diet include: (1) various recipes based on rice and grains; (2) more fermented foods; (3) more vegetables from wild landscapes and the seas; (4) more legumes and fish and less red meat; (5) more medicinal herbs such as garlic, green onion, red pepper, and ginger; (6) more sesame and perilla oil; (7) limited deep-fat fried cooking; (8) more meals based on seasonal produce; (9) various local cuisines; and (10) more home-cooked meals.

3.2.1. Various recipes based on rice and grains

Although the main energy source found in Western cuisine is wheat, the predominant Korean dietary energy source is grains such as rice and barley. *Bap* is served with *kuk* and *banchan* (Fig. 1). Variations of this format such as *kukbap*, a dish that combines *kuk* and

bap served in one bowl, and *bibimbap* [16], a dish with mixed *bap* and *banchan*, are also popular [12]. *Sungnyung* [17] is the last step of a meal. It is a traditional Korean drink made from the roasted crust of rice which forms on the bottom of a pot after cooking rice.

3.2.2. More fermented foods

Throughout the agricultural history of Korea, fermentation technology has been widely used to enrich the flavors of food by utilizing effective microorganisms against microbial spoilage. Fermented soy products such as *kanjang*, *doenjang*, *cheongkukjang* [2], and *gochujang* are the fundamental ingredients of various sauces and *kuk*. *Doenjangkuk*, made with vegetables and *doenjang*, is a traditional iconic *kuk*. *Kimchi* is another representative Korean fermented food known for its authenticity and its health benefit of reducing the activity of harmful bacteria. *Jeotgal* is salted fermented seafood that has been used to enhance flavor and appetite rather than increase the nutritional value of food. As seen above, traditional fermentation technology has been used to intensify flavors in food beyond its role in food preservation.

3.2.3. More vegetables from wild landscapes and the sea

The Korean diet is characterized by high vegetable intake, which is due to the agricultural environment in Korea. Vegetables such as lettuce, peppers, carrots, or cucumbers, were often consumed raw with sauces made of *gochujang*, *doenjang*, *kanjang*, or vinegar, and topped with sesame seeds. Cabbage or spinach were often blanched and seasoned with traditional spices. Both raw and dried vegetables were ingredients used for *kuk* (羹), which was flavored with *doenjang*. *Kimchi* is the most widely enjoyed vegetable dish in Korea. Korean cuisine also includes various types of seaweed dishes made from laver, green algae, kelp, *Hizikia fusiformis*, and *Capsosiphon fulvescens*, all of which are abundant sources of dietary fiber and vitamins.

3.2.4. More legumes and fish and less red meat

Koreans have enjoyed diverse legumes such as soybeans, mung beans, red beans, cowpea, peanuts, walnuts, and ginkgo nuts. Surrounded on three sides by oceans, Koreans have also consumed fish using various techniques, such as grilling, boiling in sauce, and marinating. Because lamb, horse meat, beef, and pork were rare in the agricultural environment, the main source of protein intake for Koreans was poultry, such as chicken and pheasant.

3.2.5. More medicinal herbs such as garlic, green onion, red pepper, and ginger

Compared with the geographically close countries of China and Japan, one of the interesting characteristics of Korean food is the diverse use of *yangnyeom* (a kind of seasoning), created using garlic, green onions, red pepper, and ginger [18]. Although spices such as black peppers have been widely used to hide the unpleasant odors of food in Southeast Asia, medicinal herbs were used to enhance flavors and increase the food's health benefits [19].

3.2.6. More sesame and perilla oil

Historically, the amount of animal-based and vegetable cooking oils produced in Korea was quite limited. Although camellia, castor, sesame, and perilla oil were produced in Korea, only sesame and perilla oil were used in cooking. With its distinctive aroma, sesame oil was used in *guk*, *namul*, and *bibimbap*. Perilla oil was used in pan-frying foods or making *yukwa* (a puffed rice snack).

3.2.7. Limited deep-fat fried cooking

As mentioned above, deep-frying techniques could not have been developed in Korea due to the limited production of animal-based and vegetable cooking oils in. Instead, cooking methods

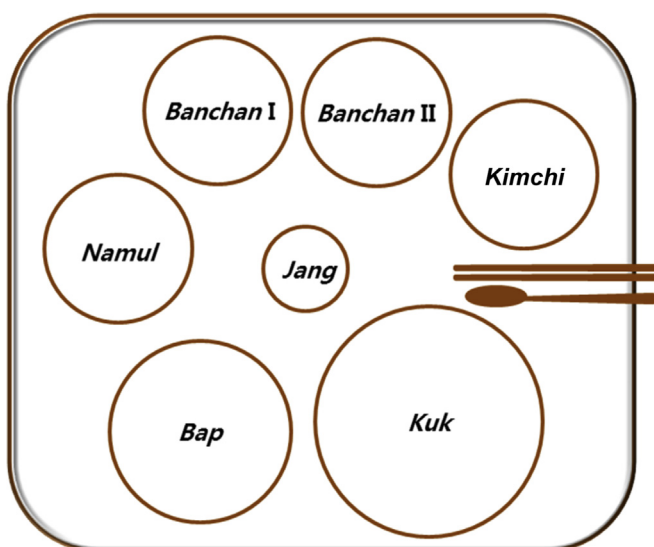


Fig. 1. Diagram of basic *bapsang* in everyday Korean diet. The structure of the traditional Korean *bapsang* (see Fig. 1 in Kwon et al [12]). *Bap* is served alongside *kuk*, which assists in the swallowing and digestion of the food. In the *bapsang*, *banchan* is comprised of one type of *kimchi*, one *namul*, one vegetable dish (*banchan I*), and one high protein dish (*banchan II*), usually made from fish or meat as *chim* or *gui*. *Jang*, or salted dishes such as *jangachi* and *jeotgal*, are used to season food and stimulate one's appetite. A variety of *bapsang* can be constructed using diverse ingredients and cooking methods depending on the season, regions, and one's preference. Overlapping ingredients and methods allow for well-balanced flavors and nutrients.

that did not require large amounts of oil, such as pan-frying or stir-frying, were developed. *Jeon*, a type of pancake made from flour batter, is the most representative example of this cooking method.

3.2.8. More meals based on seasonal produce

Korea has an advanced agricultural industry and four distinctive seasons, which provide an abundance and diversity of ingredients. For this reason, Korean cuisine has developed recipes that use fresh ingredients available in each season. For example, Koreans made fresh *kimchi* all year round utilizing different varieties of seasonal cabbage, except during the winter, when *kimchi* is stored underground in jars to control temperature for fermentation [3].

3.2.9. Various local cuisines

Surrounded by oceans on three sides, Korea lacks extensive plains—mountains cover over 70% of its territory. Recipes have been developed based on regional characteristics: grain-based dishes such as *bibimbap* in the plains [18], seafood dishes in oceanic regions [20], vegetable dishes such as *namul* in mountainous regions, and dishes with freshwater fish or clams in regions near rivers. The identification and refinement of these regional recipes and ingredients would be valuable.

3.2.10. More home-cooked meals

The history of agriculture in Korea has shaped a group culture based on family and community. Dedication, communication, and consideration among family members are deeply held values in Korean culture. As meals are cooked using natural ingredients rather than processed ingredients, usually by mothers, Koreans have believed that food represents a mother's love. This idea has been reflected in the K-diet with *jipbap* (집밥, home cooked meal) and *umma-sonmat* (엄마손맛, the taste of mother's love).

3.3. The structure of bapsang and representative K-food

As mentioned above [12], it is crucial to analyze the components of K-diet and identify K-foods representing these characteristics.

For easy understanding we adopted our previous paper's report [12] to introduce Korean *bapsang* as follows (Fig. 1 and see Fig. 1 in Kwon et al [12]): Korea's traditional meal (*bapsang*) is generally made up of four constituents. The first one is *bap* (cooked rice), which provides calories and is the main source of energy. Another important element is *kuk* (soup), which allows people to chew and swallow rice, in turn supporting the digestive system. Previously *kuk* was translated into soup, however, *kuk* is quite different from Western soup [12]. In Korean *banchan* (side dishes), make up the third element and make the food taste better to support digestion while replenishing the body with nutrition. Usually, *banchan* is made up with *namul*, legumes, and fish. The final item is *jang* (sauce, *yangnyum*), which stimulates peoples' appetite [2,21]. *Yangnyeom* includes herbs such as garlic, green onions, red pepper, and onions. Unlike spices which are often used to cover or remove unpleasant smells of food, Korean *yangnyeom* are used to enhance flavors and increase the health benefits of the foods they are combined with [19].

The kinds of *bap* (cooked rice) that are used in main dishes include steamed rice, boiled barley, and multigrain rice. As for *kuk*, *koenjang kuk*, *miyok* (sea mustard)-*kuk*, and beef *kuk* are commonly eaten. *Kimchi* is always used as a *banchan* (side dish) as are other foods, including roasted meat, vegetables, and salad dressed with garlic and chili powder; vegetables served as cooked or fresh *namul*; cooked *namul* seasoned with sesame seeds/oil or perilla seeds/oil and fresh vegetables seasoned with vinegar are also served as a side dish. The most basic seasoning used to make the food savory is *kanjang* (fermented soy sauce: *jang* in Korean means fermented soy sauce or paste), *doenjang* (fermented soybean paste), vinegar, *gochujang*, and *jeotkal* (fermented fish sauce from

Table 1
Categories of Korean *bapsang* (Fig. 1) and representative Korean foods.

Category	Subcategory	Representative Korean foods (K-food)
<i>Bap</i>		<i>Ssalbap</i> (white rice, brown rice, black rice), <i>boribap</i> , <i>kongbap</i> , <i>okokbap</i> , <i>nurungji</i> (<i>sungnyung</i>)
<i>Kuk</i>	<i>Kuk</i>	<i>Doenjangkuk</i> , <i>bukeokuk</i> , <i>kongnamulkuk</i> , <i>miyok-kuk</i> , <i>soegogimukuk</i> , <i>torankuk</i>
<i>Banchan</i>	<i>Chigae</i>	<i>Kimchichigae</i> , <i>doenjangchigae</i> , <i>cheongkukjangchigae</i> , <i>sundubuchigae</i> , <i>oigamjeong</i>
	<i>Kimchi</i>	<i>Baechukimchi</i> (<i>bossamkimchi</i>), <i>kkakdugi</i> , <i>oisobagi</i> , <i>chonggakkimchi</i> , <i>mulkimchi</i> (<i>dongchimi</i> , <i>nabakkimchi</i>), <i>yeolmukimchi</i> , <i>gatkimchi</i>
	<i>Namul</i>	<i>Saengchae</i>
		<i>Sukchae</i>
	<i>Banchan</i>	<i>Chim</i>
		<i>Gui</i>
		<i>Jorim</i>
		<i>Bokeum</i>
		<i>Jeon</i>
		<i>Hoe</i>
	Dried <i>banchan</i>	
<i>Jang</i>	<i>Jang</i>	<i>Bukak</i> , <i>ssam</i> (loose leaf lettuce, perilla leaf, crown daisy)
	<i>Jeolim</i>	<i>Jang</i> (<i>doenjang</i> , <i>cheongkukjang</i> , <i>gochujang</i> , <i>kanjang</i>)
	<i>Jeotgal</i>	<i>Jangachi</i>
Miscellaneous	One-bowl food	<i>Jeotgal</i> (<i>sikhae</i>)
		<i>Bibimbap</i> , <i>teokmandutkuk</i> (<i>teok-kuk</i> , <i>mandutkuk</i>), <i>kuksu</i> (<i>naengmyeon</i> , <i>kalkuksu</i> , <i>kongkuksu</i> , <i>kuksujangkuk</i>)
	<i>Teok</i> , <i>hankwa</i>	Shaped <i>teok</i> (<i>songpyeon</i>), pounded <i>teok</i> (<i>injeolmi</i>), steamed <i>teok</i> (<i>baekseolki</i> , <i>ssukseolki</i> , <i>siruteok</i> , <i>jeungpyeon</i> , <i>yaksik</i>), pan-fried <i>teok</i> (<i>hwajeon</i>), boiled <i>teok</i> (<i>gyeongdan</i>), <i>yakkwa</i> , <i>yugwa</i> , <i>dasik</i>
	Beverage	<i>Sikhye</i> , <i>sujeongkwa</i> , <i>omija-cha</i> , <i>hwachae</i>

anchovies, shrimp, etc.) [2]. *Jeotkal* can be eaten as a side dish itself and more often used as seasoning [21]. In Korea, people drink *soongnyung* (similar to tea made from left over scotched rice) to finish off a meal [17]. By using these four fundamental foods, Korean people have been developing their own unique meals (*bapsang*) by choosing one or more elements in each category.

Key elements of the Korean meal structure have been established and the 100 most representative K-foods have been selected according to these elements (Table 1). Most Korean meals are composed of *banchan* served with *bap*, but they are often misinterpreted as main dishes by Westerners. Although some modern Korean restaurants offer food served in courses, the traditional Korean meal is served all at once on the table. One-bowl dishes are not included in the *bap* category in Table 1 because one-bowl dishes and rice cake are consumed during busy farming seasons or on special occasions, such as weddings, 60th birthdays, and ancestral rites [12]. Examples of one-bowl meals include *kuksu* (noodle dish), *kukbap* made from *kuk* and *bap*, *bibimbap* [16] made from *bap* and *banchan* mixed with *jang*, and *tteokguk* made from rice cakes and consumed on New Year's Day. The *kuk* category includes *kuk* and *kuk*-based one-bowl dishes [12], such as *chigae*, *jeonkol*, and *tang*. The *banchan* category consists of *kimchi*, *namul*, and *banchan* made from protein sources such as meat and fish. The *jang* category is comprised of *jang*, which is used for seasoning and stimulating one's appetite. This includes salted *banchan*, such as *janggachi*, *jeotgal*, and other types of *yangnyeom*. Drinks, such as *sunngnyung*, *tteok*, and *hankwa* are included in the dessert category. Although this classification is disparate from the traditional Korean meal structure [22], it is helpful for sharing with those who are familiar with the theories and concepts of modern food science. More discourse will be needed to refine this table to effectively bridge this approach between traditional understandings and modern food science.

This paper will discuss some of the representative K-foods in the supplementary data section (see Table S1). The authors of this paper are in the process of publishing a book on K-food.

3.4. Representative Korean bapsang

Although cuisine from the Korean royal court has been widely studied and is currently served in restaurants, this paper will focus on food traditionally consumed by the common people. The traditional Korean meal table, or *bapsang*, is categorized by the purpose of the meal. It differs depending on whom the meal is for and for what occasion the meal is being. For example, a meal for guests would be different compared with a meal for elders of a family. Food consumed during celebrations such as birthdays and weddings would not be the same as food for funerals and ancestral rites. Each Korean holiday, including Seollal (New Year's day), Boreum (day of the full moon), Chuseok (Korean Thanksgiving day), Dano (the 5th day of the 5th month of the year according to the lunar calendar), Chilseok (July 7th in the lunar calendar) and Dongji (winter solstice) have been celebrated with unique and seasonal dishes such as spring *bapsang*, summer *bapsang*, autumn *bapsang*, and winter *bapsang*.

As seen above, the Korean *bapsang* varies according to the purpose of the meal. This paper will introduce *Jeongwol Daeboreumsang* (a kind of *bapsang* at first full moon of the year) as an example of a holiday meal table, and *kaeul bapsang* as an example of a seasonal *bapsang* (a kind of *bapsang* served at autumn).

3.4.1. Jeongwol Daeboreum bapsang

As Koreans traditionally used the lunar calendar, a full moon was considered to have a special importance and it was believed that days with a full moon were filled with Yin–Yang (陰氣, [16]). The celebration of the first full moon, which falls on the 15th day of the

lunar calendar, is the biggest holiday along with the eighth full moon, Chuseok. During the celebration, people wish for good health and fortune in the upcoming year by playing traditional games and sharing meals (Fig. 2). In the morning of *Jeongwol Daeboreum*, people make *okokbap* with five grains (glutinous rice, red beans, beans, sorghum, millet) and dried *namul* (bracken, mushroom, eggplant, squash, cucumber, dried radish greens, aster), which is preserved from the past year to be consumed in the winter. These dried *namul* are first soaked in water, blanched, then seasoned or stir-fried. Dried *namul* was a great source of nutrients, dietary fiber, minerals, and vitamin D, which was difficult to source during the winter season. Cracking *bureom* (nuts, such as walnuts and ginkgo nuts) is another popular tradition which is believed to prevent skin problems through the consumption of unsaturated fatty acid. People also enjoy the custom of *kwibalkisul*, which is sharing a type of rice wine together while wishing good fortune for the year ahead. *Kwibalki* means “ear-quickenening”.

3.4.2. Kaeul bapsang

Bapsang served in the autumn follows the basic structure of K-diet described in Fig. 3. This structure of *bapsang* was established in the Chosun dynasty. It consisted of *bap* made with new-harvest rice and other grains, *kuk*, *kimchi*, and various *banchan*. Depending on the available ingredients, mothers would make *banchan* using an appropriate cooking method, such as the ones suggested in Table 1. Then they would season with *jang*, garlic, green onions, ginger, red pepper powder, sesame, or perilla oil. In this sense, *banchan* can be considered as a bricolage food. *Banchan* typically consists of 80%



Fig. 2. *Jeongwol Daeboreum-sang*. This *bapsang* is served on *Jeongwol Daeboreum-sang*, the 15th day of the lunar calendar. It consists of *okokbap*, *gomkuk*, and *namul* from the past year (eggplant, bracken, squash, dried radish greens, aster, pepper, cucumber, mushroom), *kingui*, *nabakkimchi*, *yaksik*, and *bureom*. People share *kwibalkisul* with the meal and wish for good health and fortune in the upcoming year. *Kwibalki* means ear-quickenening.



Fig. 3. *Kaeul bapsang*, an example of a simple seasonal *bapsang*. New-harvest rice, *aukdoenjangkuk*, *dakbokeumtang*, *dububuchim*, *beoseotnamul*, *paramuchim*, *chongkak-kimchi* are served with *kanjang*.

namul dishes and 20% high protein dishes that are made with meat, fish, eggs, or tofu. The varieties of *banchan* offer a healthy, balanced diet that is rich in nutrients and phytochemicals. All dishes are served on a table at once so that people can consume them based on their needs and preference.

The authors of this paper will publish a book on the traditional Korean *bapsang*.

4. Discussion

When defining the K-diet, various components are considered, such as raw materials or ingredients, traditional cooking methods, and technology, and fundamental principles and knowledge. However, it would be preferable to establish the definition of Korean food by focusing on the preservation of traditional methods and core principles. The Korean meal table is characterized by servings of *bap*, *guk*, and *banchan* on one table. Although various cooking methods are used in Korean cuisine, the most representative method is fermentation which enhances both the flavor and preservation of the food. K-diet is composed of *bap* (cooked-rice) and *kuk*, and various *banchan* with one serving called *bapsang*. *Kimchi* is always served at every meal. The principal aspects of K-diet include proportionally high consumption of vegetables, moderate to high consumption of legumes and fish, and low consumption of red meat. *Banchan* is mostly seasoned with various *jang* (fermented soy products), medicinal herbs, and sesame or perilla oil. The declaration provides the features of the K-diet, and an introduction to K-food, and the traditions and health value of K-diet and K-food. Moreover, this declaration is vital to promote the cultural values of Korea (K-value) by bringing together traditional principles and scientific evidence.

Conflicts of interest

The authors have no conflicts of interest to declare.

Acknowledgments

This work is done with support of the project of Nutritional Epigenomics Study on Korean Healthy Diet (E0150302-01,02) in part from the Korea Food Research Institute. I would like to thank the following scholars for their contributions to establishing the definitions and characteristics of Korean food:

Haymie Choi (Professor Emeritus, Seoul National University), Hui Jung Chun (Professor, Korean Food Institute), Dong Hyo Chung (Professor Emeritus, Chung-Ang University), Ho Kwon Chung (Professor Emeritus, Konkuk University), Jae Sun Jo (Professor Emeritus, Kyung Hee University), Myoung Chae Joung (President, Korean Fermentation, Food Culture Forum), Sung Kon Kim (Professor Emeritus, Dankook University), Hyun Sook Kim (Professor, Sookmyung Women's University), Dae Young Kwon (Principal Researcher, Korea Food Research Institute), Tai Wan Kwon (Former President, Korea Food Research Institute), Mee Sook Lee (Professor, Hannam University), Sim-Yeol Lee (Professor, Dongguk University), Yeon-Sook Lee (Professor Emeritus, Seoul National University), Young-Eun Lee (Professor, Wonkwang University), Jong Mee Lee (Professor Emeritus, Ewha Woman's University), Hyo Gee Lee (Professor Emeritus, Hanyang University), Bongsoo Noh (Professor, Seoul Women's University), Sang Chul Park (Executive Vice President, Samsung Advanced Institute of Technology), Hyung Hee Park (President, Korean Food Service Industry Management Institute), Dong-Hwa Shin (Director, Shin-donghwa Food Research Institute), Hyun Kyung Shin (President, Jeonnam Bioindustry Foundation), Hyo Sun Shin (Professor Emeritus, Dongguk University), Jung Han Yoon Park (Professor Emeritus, Hallym University), Tae Jong Yu (Professor Emeritus, Korea University).

Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.jef.2016.03.002>.

References

- [1] Kwon DY. Why ethnic foods? *J Ethn Foods* 2015;2:91.
- [2] Shin DH and Jeong DY. Korean traditional fermented soybean products. *Jang. J Ethn Foods* 2015;2:2–7.
- [3] Jang DJ, Yang HJ, Chung KR, Kim KS and Kwon DY. Discussion on the origin of kimchi, representative of Korean unique fermented vegetables. *J Ethn Foods* 2015;2:126–36.
- [4] Kwon DY, Jang DJ, Yang HJ, Kim KS and Chung KR. History of Korean gochu (Korean red pepper), gochujang and kimchi. *J Ethn Foods* 2014;1:3–7.
- [5] Willett WC, Sacks F, Trichopoulos A, Drescher G, Ferro-Luzzi A, Helsing E and Trichopoulos D. Mediterranean diet pyramid: a cultural model for healthy eating. *Am J Clin Nutr* 1995;61(6 Suppl):1402S–6S.
- [6] Adamsson V, Reumark A, Cederholm T, Vessby B, Risérus U and Johansson G. What is a healthy Nordic diet? Foods and nutrients in the NORDIET study. *Food Nutr Res* 2012;56:181–9.
- [7] Ferrières J. The French paradox; lessons for other countries. *Heart* 2004;90:107–11.
- [8] Simini B. Serge Renaud: from French paradox to cretan miracle. *Lancet* 2000;355:48.
- [9] World's Five Healthiest Foods. *Health Magazine* 2006.
- [10] Park J and Kwok CK. Sodium intake and prevalence of hypertension, coronary heart disease, and stroke in Korean adults. *J Ethn Food* 2015;2:92–6.
- [11] Song HJ and Lee HJ. Consumption of Kimchi, a salt fermented vegetable, is not associated with hypertension prevalence. *J. Ethn Food* 2014;1:8–12.
- [12] Kwon DY, Chung KR, Yang HJ and Jang DJ. Gochujang (Korean red pepper paste): a Korean ethnic sauce, its role and history. *J Ethn Foods* 2015;2:29–35.
- [13] Kwon DY. Seoul declaration of Korean diet. *J Ethn Food* 2016;3:1 [Editorial].
- [14] Chung HK. The meaning and symbolism of Korean food culture. *Asia Review* 2015;5:97–121.
- [15] Chung HK. Cultural properties and aesthetics of Korean Foods. *Proceedings of Conferences for World Society of Comparative Literatures, Spring meeting. Seoul (Korea), 2009. p. 78–98.*
- [16] Chung KR, Yang HJ, Jang DJ and Kwon DY. Historical and biological aspects of bibimbap, a Korean ethnic. *J Ethn Food* 2015;2:74–83.
- [17] Moose JR. Village life in Korea. Nashville (TN): House of ME Church; 1911. 85 p.
- [18] Surh YJ. Cancer chemoprevention with dietary phytochemicals. *Nat Rev Cancer* 2003;3:768–80.
- [19] Hu J (許浚). *Donguibogam (東醫寶鑑)*. Seoul (Korea): 1610.
- [20] Kim SH and Jang DJ. *Fabulous Korean ethnic foods*. Seoul (Korea): Namdo: Korea Food Research Institute; 2015. p. 13–37, 59–78.
- [21] Hwang HS, Han BR and Han BJ. *Korean traditional foods*. Seoul (Korea): Kyomunsa; 2005. p. 16–29.
- [22] Yoon SS. *The culture and history of Korean foods*. Seoul (Korea): Shinkwang; 1999. p. 338–43.