

Chapter 12



Japanese Food Loved by Overseas People

12.1 Ranking of Japanese dishes loved by overseas people

The favorite Japanese food of overseas people is *sushi* and *sashimi* (fresh raw fish), the second is Chinese noodles called *ramen*, the third, *tempura*, the fourth, *miso soup*, the fifth, Japanese noodles, *udon and soba* (Table 12.1). *Sushi* and *sashimi* may not need to be explained what they are. The origin of *ramen* is a Chinese food, but has been changed to Japanese taste, and we have many kinds of ramen brands, such as *Sapporo ramen*, *Tonkotsu ramen* and so on in Japan. Nowadays, American people are coming to like *ramen* and Japanese-type curry and rice (*kare-i-rice*). *Ramen* is going to become the most typical Japanese food in the USA and the situation is said to be the same as to the Southeast Asia like Thailand.

As many people in the world already know well about *tempura*, it is a dish of sea foods or vegetables which are deep fried in vegetable oil, after being coated with a mixture of egg, water and wheat flour. *Udon*, Japanese typical noodles is becoming more and more popular in the USA, Southeast Asia and Russia. *Udon* is white and thick wheat noodles, which are basically made by kneading wheat flour, salt and water. Dried, pre-boiled and fresh *udon* is also available at Japanese stores. *Soba* is a brown Japanese buckwheat noodle about the size of spaghetti. The noodles can be served cold with dipping sauces and toppings or hot in soups or broth. Since *soba* can be grown in rather poor and dry soil, we have been cultivating non-rice growing fields in Japan but recently it becomes expensive. However, some people, even Japanese, are allergic to it.

Table 12.1 Ranking of favorite Japanese foods in overseas.

No.	Food	%	Sample
1	Sushi, sashimi	79.9	
2	Ramen	64.5	
3	Tempura	61.4	
4	Miso soup	60.8	
5	Udon, soba (noodles)	52.1	
6	Curry rice	51.5	
7	Tofu	51.3	
8	Yaki-tori	44.1	
9	Okonomi-yaki	32.6	
10	Unagi (eel)	25.9	
11	Nabemono	23.4	
12	Natto	16.3	

(hotel.com)

A Japanese food loved by people from abroad includes *okonomi-yaki*, a kind of pancake with vegetables and meat (Table 12.1), and it will become a popular

food because it is delicious, nutritious and not so expensive, though there are very few *okonomi-yaki* restaurants in overseas countries. *Unagi* is the Japanese word for freshwater eel, *Anguilla japonica*. *Unagi* is a common ingredient in Japanese cooking. It is not to be confused with saltwater eel, which is known as *anago* in Japanese, but it has a good taste, too. *Unagi* is served as part of *don*, a *donburi* dish with sliced eel served on a bed of rice. A kind of sweet biscuit called *unagi pie* made with powdered *unagi* also exists. *Unagi* contains high soft protein, vitamin A and calcium, and thus Japanese have a custom to eat it in the hottest summer time to serve them with energy. *Natto* is ranked 12th as shown in Table 12.1, but I suppose people who like *natto* might have stayed in Japan for a long time or may be gourmets of Japanese food.

As I expected, the favorite foods of Japanese people are loved all over the world.

12.2 Rice grown in Japan is delicious indeed

In the past, we were not able to eat Japanese rice, *Japonica*, in the countries except in Japan. Talking of rice in other countries, it is usually rice called *Indica*, whose form is a little long and slender and is difficult to become glutinous even if it is steamed. It tastes dry and crumbling (Fig. 12.1). When I was boarding with a Thai family for teaching at Chulalongkorn University in my younger days for a couple of months, I ate Thai rice, but it didn't taste good compared with Japanese one. So I usually ate a bowl of Thai rice with *miso*-soup put into it. However, some species of *Indica* rice are tasty and fit for local dishes in Asian and European countries.

Once when I asked several students from Southeast countries about how delicious Japanese rice is, every student answered, "Japanese rice is very good.

I like it very much". I found that those students liked a little chewy rice besides dry and crumbling rice.



Fig. 12.1 *Japónica rice grains (left) and Indica rice grains (right).*

(Photos quoted from ja.wikipedia.org.)

12.3 The first vitamin was found in bran of rice by a Japanese scientist

We usually eat rice whose bran on it was washed out, since bran on unpolished rice has miscellaneous tastes. These days, polished and cleaned rice, '*senmai*' is marketed in Japan and busy women like it.

In 2010, we held a centennial commemorative celebration for the discovery of the first vitamin in Japan found by Dr. Umetaro Suzuki. He found an active compound in rice bran that can cure patients of beriberi, a serious disease in those days.

People in Edo period knew a special syndrome that local *samurai* became sick, beriberi while they stayed in Edo (now, Tokyo) for several years, but that they recovered from it when they came back to their local home. This syndrome was named 'Edo wazurai' meaning an Edo disease. People who lived in Edo ate polished rice, whereas local people ate unpolished rice or miscellaneous cereals. Dr. Suzuki thought that there might be a factor substance in rice bran to cure

them of beriberi. He succeeded in isolation of the factor and named it 'Orizantin' derived from rice, *Oryza sativa*. One year later, a Polish scientist, Dr. C. Funk found the same factor independently and named it 'vitamin'. We know now this vitamin is vitamin B₁.

As I mentioned in Chapter 2 that *kurosu* vinegar is good for our health than *komesu* or other umber vinegar since *kurosu* is produced from unpolished rice, while *komesu* is produced from polished rice. Thus, *kurosu* contains vitamins and other active compounds derived from bran and embryos on the surface of rice grains.

12.4 Why are Japanese brand of rice, *Kosi-hikari* or *Akita-komachi* delicious?

We define polysaccharide whose sugar molecules stretch as starch. Rice starch molecules are made of two kinds of polysaccharide, amylose and amylopectin. Explaining chemically a little bit more in detail, the structure of amylose is composed of strait-chain of glucose molecules, whereas the structure of amylopectin is composed of strait-chain of glucose and branch chain of glucose molecules (Fig. 12.2).

Cellulose also composed of glucose molecules that is the main ingredient of plant, is also polysaccharide similar to the starch, but the structure is a little bit different. Our human enzymes, amylases, digest starch polysaccharide, but cannot digest cellulose polysaccharide because of this structural difference. The reason why cows or goats can grow only by grass is that they have microorganisms in their stomach that can digest cellulose since these microorganisms have a special enzyme, so called 'cellulase'.

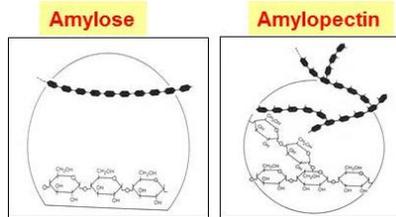


Fig. 12.2 Two types of starch structure, amylose (left) and amylopectin (right).

Amylopectin has branches of glucose chains and that is stickier than amylose, which has no such branch chains. (Figures provided by Dr. S. Hizukuri, Kagoshima University, Japan.)

Please, don't say, "I am not interested in chemical structure of polysaccharide, such as amylose or amylopectin." As a matter of fact, the difference of this structure is related to stickiness and texture of rice. For example, starch contained in glutinous rice, *mochi-gome*, out of which rice cakes, *mochi*, are made, contains little amylose, and is composed of amylopectin. Therefore, it is easy to become sticky and good texture. Japanese brand rice like *koshi-hikari* and *akita-komachi* contains more amylopectin and umami than other common rice, so they are loved by Japanese people.

Rice grown in California State is almost *Japonica* rice, because Japanese people moved there and grew them there. We can get inexpensive California rice like '*Kokuho*' or '*Calrose*' now. The same thing is said in Brazil, Peru and Chile. Nowadays, they are growing Japanese rice in Korea, Thailand, Indonesia, Vietnam, China, Italy and some other countries.

The taste of Japanese brand of rice was improved on and on, but it is delicate because they bred it one after another. Therefore, it is difficult to grow them easily compared with common rice because they are sensitive to harmful insects, temperature and yield to weeds easily. Japanese farmers who are growing good

rice make efforts to take care of it. Not all farmers can raise delicious Japanese rice. Therefore, even if good rice is a little expensive, it will sell well overseas.

12.5 Culture of rice cultivation that will recover the earth

When we are flying over European and American continents, we sometimes find round forms on stretching green farmland. They are places where farmers are growing grain by sprinkling water on the places. The round places sometimes look white or withered. The white parts show signs of salt which oozes out of farmland. Once salt oozes, we can't grow grain for a long time. In that case, farmers have to give up cultivating crops and move to new farmland. That is how it begins to turn into desert.

On the other hand, in Asian countries like Japan, Korea, southern part of China and Southeast Asia where the monsoon comes every year and people there have developed rice-cultivation-culture. Rice cultivating farmers have made every effort to grow rice every year in the same rice fields by river improvement or making irrigation ponds in order to get water with ease.

Algae and photosynthetic microbes in rivers and ponds propagate by utilizing carbon dioxide and nitrogen gas in the air and supply water with nutrition. We can find algae like *Azola* or *Anabaena* covering surface of water in rice paddy after rice planting. Chemical reactions caused by algae or photosynthetic microbes are called 'carbon dioxide fixation' and 'nitrogen fixation'. These chemical reactions are caused by the operation that solar energy changes carbon dioxide and nitrogen gas from air into organic materials. These microbes live symbiotically with plants, so called 'symbiosis'. It must be a starting point of ecology with limiting amounts of chemical fertilizers in human activity.

12.6 Fertilization of rice paddy utilizing symbiosis between plant and rhizobia

In Southeast Asian countries like Thailand, Indonesia, Vietnam, Malaysia and Philippines, agricultural instruction of symbiosis with microalgae such as *Azola*, *Anabaena*, Cyanobacteria and plant-growth-promoting rhizobacteria is given now. Practical use of symbiosis makes the use of chemical fertilizer in growing grains, vegetables and fruits much less than before.

On the other hand, in China and Japan, Chinese milk vetches (*Renge-soh* in Japanese or *Astragalus sinicus* as scientific name) have been grown in the rice fields as secondary crops to fertilize the soil (Fig. 12.3). Chinese milk vetches, by symbiosis with rhizobia of soil bacteria, have been providing nitrogenous fertilizer by changing a part of nitrogen accounting for 78 percent of air into ammonia. Thus, Chinese milk vetches are called a green manure like alfalfa in ranch and reduce the amount of chemical fertilizers. Planting Chinese milk vetches means fundamental ecological agriculture in cultivating rice and breeding cows and honeybees. One of scientific fields I named 'symbiotic engineering', which is concerned with engineering symbiosis by using Chinese milk vetches or bird's-foot trefoil, *Lotus japonicum*, has been one of the main themes in my research activities^{*1}.

Thus, people growing rice have been cultivating a marvelous culture of growing rice every year by fertilizing soil and circulating it without environmental destruction. We must keep and develop this rice cultivating culture for the future of our earth.



Fig. 12.3 Rice field is covered with Chinese milk vetch, reng-soh.

Renge-soh (*Astragalus sinicus*) has been cultivated in rice fields in China and Japan as a green manure since the plant produces ammonia from atmospheric nitrogen by symbiosis with rhizobia. Picture was taken in spring time at Azumino, Nagano, Japan.

Weed-grown uncultivated rice fields have been increasing even in my neighborhood since the younger generation does not like to become farmers. As a result, agricultural population is decreasing and the rate of old farmers is comparatively getting higher. My heart aches when I see such uncultivated rice fields not only in terrace paddy fields but also on plain fields. We must make better use of these uncultivated rice fields more effectively so that practical farmers or Agricultural Cooperatives can make use of them.

12.7 “They look really cool” young people who bear the destiny of agriculture and fishery on their shoulders

Agriculture should be changed into ensuring economic viability so that farmers can make their living by it and young people feel it charming.

Until recently, mountaineering was popular among middle-aged people. But these days more and more young girls and middle-aged women wearing fashionable colorful clothes are seen hiking in mountains. I sometimes go trek

in mountains not only in Japan, but also in overseas countries. However, I sometimes feel it guilty because I don't do anything productive or useful for other people. On the other hand, people working on farms, in forests, or over the sea are engaged in producing useful things and look cool and healthy.

I hope more and more young people will be engaged in productive activities in fashionable farmers' clothes and on nice tractors similar to Ferraris.

12.8 Japanese green tea is becoming more and more popular

A souvenir from Japan which I recommend is green tea whose taste is really nice. It is not heavy to take abroad and looks an article of high quality and very good for the health. Restaurants serving Japanese foods in overseas countries give free Japanese green tea to customers. They like it, because it contains much catechin, a kind of polyphenol, which is thought to be good for the health as an antioxidant. In China towns in San Francisco or other cities, we can get inexpensive tea labeled 'Japanese green tea produced in Japan', but most of them are not Japan-products and its color is light and its taste is weak. I recall the weak tea served in a cafeteria of the college where I learned.

Nowadays, not only green tea but roasted tea called *hoji-tea* and various kinds of devised tea are being exported abroad (Fig. 12.4). Efforts to look for a new market of sesame oil, which is said to be good for the health besides green tea, are also being made by assistance of JETRO (Japan External Trade Organization).



Fig. 12.4 Samples of exported teas and oils from Japan.

Upper left, roasted green tea; upper middle, yuzu (lemon) citron green tea; upper right, sweet sakura (cherry) tea; lower two photos, varieties of goma (sesame) oils. (Photos provided by JETRO USA.)

12.9 California rolled *Sushi* and bowl dishes, ‘*Donburi*’ are popular in overseas countries

Some people in overseas countries eat *maki-zushi*, vinegary rice rolled in a sheet of dried laver with various ingredients in the center, but they seem to be weak in laver. They say it smells fishy. Speaking of *maki-zushi*, California rolled *sushi* is well known in the USA (Fig. 12.5). It seems that American people like it because avocados and cheese, *etc.* are put into it and they feel they ate their fill. We can say it is one of the typical local dishes which were arranged from Japanese traditional dishes.



Fig. 12.5 A sample of Californian rolls.

I read about an article that bowls of rice, '*donburi*' and something which is a changed dish from California rolled *sushi* are taken by Australian people recently. Not only a bowl of beef cutlet and rice, '*gyu-done*'; but bowls of curry, '*curry done*'; pork cutlet, '*katsu done*'; broiled chicken and rice, '*teriyaki-chicken done*' are said to be popular among them, since the prices are reasonable and the dishes are served fast and delicious. Recently a bowl of *miso* pork cutlet, '*miso-katsu done*'; or smoke-sermon and rice, '*sermon done*', appeared in the food court in Brisbane.

12.10 Invitation to Japanese restaurants is pleased

Japanese-dish-serving restaurants are said in higher ranks in the same-class restaurants. However, nowadays we can choose a lot of menu not only from among light meals like *bento*, *udon*, *soba*, *ramen* and *done*, but from among expensive dishes like *sushi*, *shabu-shabu* and *kaiseki*. *Kaiseki* is a set of dishes served on an individual tray and it is served for entertaining guests. High-class atmosphere of restaurants is liked by people who were invited.

When we stay abroad, we sometimes invite people to our parties. In my case, I always invited them to Japanese-dishes-serving restaurants, while I usually invited guests from Japan to restaurants in Chinatown of San Francisco.

At the lunch time, our office members in San Francisco usually visit restaurants where they serve big American sandwiches, *udon* of Japanese noodle, *tempura done*, *tenshin* of Chinese dish, *harumaki* and noodles of Vietnam dish, *tacos* of Mexican dish, and *pasta* of Italian dish.

12.11 We have weekend parties by cooking fresh fishery

Japanese people who are staying in overseas countries often give parties with each other at weekends. Some of them have the license of fishery and sometimes bring big scallops, fishes and oysters, and we cook them together. Even if they have a license of fishery, they should follow the regulations as to catching scallops.

Much scallops and oysters are caught in the northern sea of San Francisco and the oysters were called *Kumamoto Oysters*. *Kumamoto* is a prefecture located in *Kyusyu* in Japan. I do not know why they called the oyster as *Kumamoto* since most of oysters are cultivated in Hiroshima area of the inland sea, *Setonaikai*, and Kamaishi area of Tohoku in Japan. I was advised to avoid oysters caught after raining, because Noroviruses or vibrio bacteria easily breed. I heard that it is because salt concentration in the sea decreased. In France, it is well-known that some restaurants serve us raw oysters put on pieces of ice and they are very delicious if they are taken by putting lemon or vinegar on them. I have not heard since 1970s that there appeared people who had stomachaches after eating oysters in French restaurants, so I guess that salt concentration in the sea may be high or very clean, or special sterilization is treated.

Of course, Dungeness crabs caught in the west coast of America are very delicious, and lobsters caught in the sea along American east coast from the

Prince Edward Island of Canada to Chesapeake Bay in Washington DC are also delicious.

12.12 Summary

Japanese-dish-serving restaurants are said in higher ranks among the same-class restaurants. However, we can choose a lot of menu not only from among light meals like *bento*, *udon*, *soba*, *ramen*, *tempura*, *karei-rice* and *done*, but from among marvelous dishes like *sushi*, *shabu-shabu* and *kaiseki*. Green tea is also loved, because it contains much catechin, a kind of polyphenol, which is thought to be good for the health, and it is really tasty.

Japanese brand rice like *koshi-hikari* and *akita-komachi* contains more amylopectin and umami than other common rice of *Japonica* or *Indica* species, and they are sticky and tasty. Rice cultivating farmers have been cultivating a marvelous culture of growing rice every year in the same fields by fertilizing soil with carbon- and nitrogen-fixing algae and microbes and circulating them without environmental destruction. We must keep and develop this rice cultivating culture for the future of our earth.

*1 Murooka, Y. Ike, A. and Yamashita, M., Bioremediation of heavy metals through symbiosis between leguminous plant and rhizobium with engineered metallothionein and phytochelatin synthase genes. In *Microorganisms in Industry and Environment*. A. Mendez-Vilas (ed), World Scientific, London (2011).