



The Evolution of Functional Bread in Japan



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Japan's diet in many ways resembles the Mediterranean diet, which includes the notion that good foods should actively promote good health. Cereal crops have long played a huge part in this, both historically and in modern times.

In the sixteenth century, during a period of exploratory sea voyages, many Europeans came to Japan. Marco Polo reported on Japan's striking images of golden fields of ripening wheat and rice. Even then, though at a rudimentary level, the inherent nutritional benefits of grains were recognized.

In recent times, and despite contra dietary trends such as the Atkins and Low Carb diets, cereals are still seen as one of

the most basic food groups vital to a healthy and balanced diet. Nutrition experts typically recommend the consumption of carbohydrates, such as whole grain breads and cereals, legumes, fruits, and vegetables, which all provide essential vitamins, minerals, and fiber. They also provide energy to get you through the day and to help maintain concentration. In Japan, the government has sought to improve eating habits by promoting the consumption of cereals.

Globally, there is a trend to recognize low-glycemic (low-GI) foods as being good for health. The concept of the Glycemic Index, as it applies to carbohydrate-based foods, is that by allocating a low-, medium-, or high-GI value to foods, people can make healthier choices about the food they eat. According to this view, low-GI foods are broken down more slowly in the digestive system, making energy available to the body over a longer period of time and causing people to feel more energetic and satisfied. As such, low-GI foods may contribute quite nicely to optimum health.

Because of its inclusion in diets across most ethnic groups, the bakery sector, and bread in particular, now presents a substantial growth opportunity in the functional foods market. There are two main thrusts to capitalizing on these opportunities, bread enrichment by supplementation and advocating the inherent benefits of natural cereal grain compounds.

In France, the functional bread market has focused not only on a rising obesity rate but also at reducing heart disease and lowering cholesterol. One French bakery, PAUL (La Madeleine, France), incorporated flax oil, famous for its high omega-3 content, into its new "Lin-dispensable" bread. Omega-3 polyunsaturated fatty acids have been the subject of numerous medical and clinical trials that have documented a wide range of health benefits for

consumers, including reduced risks of heart disease and heart attacks, as well as benefit for brain and neuromuscular development, particularly in children. The firm called its bread "Lin-dispensable," a play on the words linseed and indispensable. The bread was ideal for a range of meal occasions, including sandwiches, as toast, or as an accompaniment to a main course.

In this case, France's Lin-dispensable bread sells at a price premium, and the French bakery industry today acknowledges an emerging demand for premium, functional products. Several bakeries have joined the trend by introducing breads with additional functional ingredients, such as dietary fiber and other nutrients.

The bread industry in Japan is highly competitive with very low margins on the standard products. Emphasis on product attributes has been based on perceived consumer needs for texture, freshness, firmness, and the crunchiness of the crust. Now, rising health consciousness and awareness of advances in other food sectors are influencing and driving a large array of nonstandard and even exotic functional bread products. The following is a partial list of some of these products.

Calcium Bread

Yamazaki Bakery (Tokyo, Japan) sells a calcium-enriched bread that contains the equivalent calcium from 1 bottle of milk (220 mg) in one slice of bread. In this case, the product also contains vitamin D to enhance absorption of the calcium.

Twelve Whole-Grain Meal Bread

This Yamazaki Bakery bread contains a variety of cereal grains, including rye, oat, and millet. These are important for their dietary fiber, but they also have additional functional purposes. Millet, for example, is known to improve serum cholesterol levels.

Unpolished Rice

This concept is aimed at the traditional Japanese taste for rice products. Unpolished rice contains a rich matrix of vitamins and nutrients. This bread, which is quite popular in Japan, is made by soaking unpolished rice in sugar cane juice and black bean vinegar before kneading the mixture into a typical bread dough. The result is an aromatic sourness with a different yeast aroma than standards breads. Another variety is made from natural yeast taken from organic raisins and mixed with wheat and sprouted unpolished rice.

Soy Milk Bread

Soy milk is a well known ingredient in Japan. It is used in bread to achieve a low caloric value with a high protein content. In general, the use of soy milk replaces the other milk and milk-related ingredients. The resulting bread texture remains quite similar to the original recipes.

Collagen Bread

This can be called a “cosmetic” bread, as the bread contains collagen for improving the quality and health of skin tone. This bread, like the soy bread, is quite popular in Japan now. The collagen is made from fish scales. When added to the bread, it increases the bread’s softness and moisture and adds umami flavor, which has been identified as one of the five basic tastes sensed by the tongue and generally refers to a savory, meaty, or full flavor.

FOSHU (Food for Specified Health Use) Bread

FOSHU is a Japanese government authorized health category highly regarded by consumers. In this case, the breads are designed to help maintain intestinal health through the addition of Galactosylsucrose oligosaccharides.

Fiber Bread

In addition to the natural cereal fibers, this bread contains apple fiber and polyphenols. Each loaf is claimed to contain 2.5 kg of fresh apple.

Vitamin-Fortified Bread

Normally, it’s quite difficult for the food industry to demonstrate the meaning of fortified labeling. In Japan, one baker uses wheat flour fortified with vitamin B₁, which, it is maintained, turns sugar into energy. It is sold under the tagline “brain bread.”

Blended Herb Bread

These breads are derived from the concept of using foods as medicines. They combine various medicinal herbs directly into the bread dough, such as lily root, used for treating inflammation and promoting healing, lotus fruit, which benefits the kidneys and helps soothe upset stomachs, and dropwort, an expectorant that also helps kidney problems. The herbs also appeal to the Japanese sense of seasonal variety, with specific herbs being associated with specific seasons.

Breads for Dietary Purposes

Diet-specific breads are typically customized to the needs of diabetes and kidney patients. These are breads that are low in calories, low in proteins, and contain half the sodium and phosphorous of normal breads.

Despite the apparent increase in activity in new functional bread products in Japan, promotional issues have at times limited potential customer acceptance. In some cases, the new products have had similar shapes and packaging as the standard item, thereby confusing customers. In other situations, attempts to communicate the bread’s functional attributes have been unsuccessful. In reality, one can never be sure just how good the taste or textures of these breads will prove to be. The problem with most of these breads is that they may prove to be good for you in some ways, like having lots of fiber, but may actually contain unhealthy levels of salts and other components, such as sugar, as well.

An advertisement appeared here in the printed version of the journal.

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