

Fermented foods



What are fermented foods?

Scientists have defined fermented foods as those made through desired microbial growth and enzymatic conversions of food components. These foods are not new. Fermented foods have been around for thousands of years. To understand how fermented foods are made, let's look at yogurt.

Yogurt is a fermented food made from milk. During yogurt fermentation lactic acid-producing bacteria grow on the sugar and other nutrients in milk. As they multiply, the bacteria produce compounds that change the flavor, texture, and nutrients in the milk to give us what we know as yogurt.



The value of fermented foods

May be a source of live, active microbes

Improve taste, texture, and digestibility of food

Increase concentrations of vitamins and bioactive compounds in foods

Remove/reduce toxic substances or anti-nutrients in raw foods

Inhibit pathogens and food spoilage microbes

May benefit human health by reducing risk for some acute and chronic diseases



The fermentation process

Depending on the food, certain types of bacteria, yeasts and/or molds carry out the fermentation. Ingredients such as salt may be added and temperature and time will be manipulated to get the desired end-product. The fermentation microbes are still alive when we eat yogurt, kefir, cheeses, kimchi and some other fermented foods. But some foods that undergo fermentation are further processed (by pasteurization, baking, or filtering) so they are no longer sources of live microbes.



FERMENTED

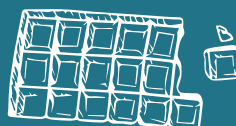
Fermented and retaining live fermentation microbes

- Yogurt
- Kefir
- Most cheeses
- Miso
- Natto
- Tempeh
- Kimchi/fermented vegetables
- Dry fermented sausages
- Most kombuchas
- Some beers



Fermented but fermentation microbes killed or removed (process)

- Bread, including sourdough (baked)
- Shelf-stable pickles/fermented vegetables (heat-treated)
- Sausage (heat-treated)
- Soy sauce (heat-treated)
- Vinegar (heat-treated)
- Wine, most beers, distilled spirits (filtered)
- Coffee and chocolate beans (roasted)



NOT FERMENTED

No live microbes used in production

- Fresh sausage
- Vegetables pickled in brine or vinegar
- Chemically-produced soy sauce
- Non-fermented cured meats and fish
- Acidified cottage cheese

