

## Fermented Foods

**Fermentation** is a process in which an agent [typically bacteria and yeast] cause an organic substance to break down into simpler substances; especially, the anaerobic [no oxygen] breakdown of sugar into alcohol, i.e. the making of beer or wine.

Fermentation in food processing is the conversion of carbohydrates (plant foods) to alcohols and carbon dioxide, or organic acids, using yeasts, bacteria, or a combination thereof, under anaerobic (no oxygen) conditions. Fermentation usually implies that the action of microorganisms is desirable, and the process is used to produce alcoholic beverages such as wine, beer, and cider. Fermentation is also employed in the leavening of bread, and for preservation techniques to create lactic acid in sour foods such as sauerkraut, dry sausages, kimchi and yogurt, or vinegar (acetic acid) for use in pickling foods.

Nobel Prize winner Dr. Elie Metchnikoff was one of the first scientists to recognize the benefits of eating fermented foods. His research in the early 1900's focused on the Bulgarians. He believed the daily ingestion of yogurt was a major contribution to their superior health and longevity.

Bulgarians perfected the art of detoxifying and preserving milk (removing the lactose and predigesting the proteins) and transforming it into yogurt and cheese. For centuries, Europeans used wine as a source of clean, durable water. The Caucasians used Kefir grains for the same purpose: detoxify milk products to make Kefir. Vegetables were also fermented to preserve them from spoilage, such as kimchi in Korea. Most of the pickled products found on our grocery shelves were at one time a fermented product: pickles, saurkraut, and even catsup (a Chinese word for pickled fish brine). However, since fermentation isn't always a uniform process, manufacturers found another way to make these products.

At the start of the 20<sup>th</sup> century, Dr. Elie Metchnikoff put forward his belief that the 1. .... and good health of Bulgarians could be attributed to eating fermented food each day. By 2. .... and preserving milk, they were able to convert it into 3..... and 4. .... In other parts of Europe, fermented 5. .... was consumed as a replacement for clean water. Some 6. .... were fermented which gave them a longer lifespan but nowadays this is done by pickling.

A) ingesting   B) yoghurt   C) longevity   D) pickled products   E) wine   F) food   G) kimchi   H) cheese   I) detoxifying   J) vegetables