Food Preservation by Pickling

Module- 22
Lec- 22

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**Origin of word Pickling**

The term pickle is derived from the Dutch word pekel, meaning brine.

- **Pickling**, also known as **brining** or **corning** is the process of preserving food by anaerobic fermentation in brine (a solution of salt in water) to produce lactic acid, or marinating and storing it in an acid solution, usually vinegar (acetic acid). The resulting food is called a pickle. This procedure gives the food a salty or sour taste. In South Asia, edible oils are used as the pickling medium with vinegar.

- Another distinguishing characteristic is a pH less than 4.6, which is sufficient to kill most bacteria. Pickling can preserve perishable foods for months. Antimicrobial herbs and spices, such as mustard seed, garlic, cinnamon or cloves, are often added. If the food contains sufficient moisture, a pickling brine may be produced simply by adding dry salt.

- For example, sauerkraut and Korean kimchi are produced by salting the vegetables to draw out excess water. Natural fermentation at room temperature, by lactic acid bacteria, produces the required acidity. Other pickles are made by placing vegetables in vinegar. Unlike the canning process, pickling (which includes fermentation) does not require that the food be completely sterile before it is sealed.

- The acidity or salinity of the solution, the temperature of fermentation, and the exclusion of oxygen determine which microorganisms dominate, and determine the flavor of the end product.

- When both salt concentration and temperature are low, Leuconostoc mesenteroides dominates, producing a mix of acids, alcohol, and aroma compounds. At higher temperatures Lactobacillus plantarum dominates, which produces primarily lactic acid. Many pickles start with Leuconostoc, and change to Lactobacillus with higher acidity

- Pickling began as a way to preserve food for out-of-season use and for long journeys, especially by sea. Salt pork and salt beef were common staples for sailors before the days of steam engines. Although the process was invented to preserve foods, pickles are also made and eaten because people enjoy the resulting flavors. Pickling may also improve the nutritious value of food by introducing B vitamins produced by bacteria
Fermenting vs Pickling (differences)

Basis : definition

• Fermentation : In the context of food, fermenting is the conversion of carbohydrates to alcohols and carbon dioxide or organic acids. The process also occurs in pickling. Process of preserving foods by allowing it to anerobically ferment in brine.
• Pickling : Fermenting occurs during pickling

Basis : Method

• Fermentation : Fermentation is the biochemical process in which energy is extracted from sugar without the use of oxygen. Fermentation by yeast is the basis of the alcoholic beverage industry.
• Pickling : The jar and lid are first boiled in order to sterilize them. The fruits or vegetables to be pickled are then added to the jar along with brine and/or vinegar and are then allowed to ferment until the desired taste is obtained.
• Fermentation : Fermentation occurs naturally in fruits. Since ancient times, however, the earliest evidence of wine making dates from eight thousand years ago, in Georgia in the Caucasus area.
• Pickling : Pickling began as a way to preserve food for out-of-season use and for long journeys.

Foods

• Fermentation: Used in the production of beer, wine or cider
• Pickling : Vegetables and meats can be pickled for preservation.
References

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