

**Fermentation, Preserving food, and Sauerkraut**  
**By Nancy Varley, August 29, 2022**  
**Culinary Club – Clarinda Lied Library**

**Brief history of fermentation**

It is likely that the first fermentation was the preservation of milk from camels, goats, sheep and cattle into a form of yogurt. Brewed beverages would have been next with alcoholic drinks including wine, fermented rice for sake and fermented honey in mead. The ancient Egyptians first experimented with yeast in dough for leavening bread. Their techniques developed between 3500 and 300 BC. Pickled cucumbers originated in modern-day Iraq around 2000 BC. There is evidence that the Chinese were using moldy soybeans as an antibiotic treatment for boils and wounds beginning around 500 BC. Tea leaf fermentation was first documented in ancient Chinese civilizations around 200 BC, yielding the beverage many of us may have heard of even today: Kombucha. In 1856, Louis Pasteur discovered that fermentation requires live cells and yeast plays a critical role in the process. His heat-related experiments would later be used in pasteurization. In the early 1900s, Elie Metchnikoff, a Russian bacteriologist, discovered the bacterial strain Bulgarian bacillus in fermented milk. It was later reclassified as *Lactobacillus acidophilus*. Using his findings, Yale researcher Leo Rettger found that strains of *Lactobacillus* were active in the human gut, paving the way for the development and understanding of probiotics.

**History of refrigeration and Canned Food**

It can be difficult for modern day fermentation enthusiasts to begin to trust that their fermented food is preserved and safe, so much we have learned to rely on refrigeration. In our modern day and age, we have strayed quite a ways from our ancestor's method of preserving food. We rely heavily on refrigeration as well as canned and frozen foods. However, canning and refrigeration have not been around all that long in the world's history.

Canning: in 1795, Napoleon offered a reward of 12,000 French Francs for whoever could develop safe and reliable food preservation for his traveling army. Chef Nicholas Appert took that challenge and introduced heat processing of food in glass jars sealed with wax. It later evolved into tin cans and grew in popularity as methods of canning became safer and more popular through the 19<sup>th</sup> and into the 20<sup>th</sup> century.

Refrigeration started in the 1840's with the first iceboxes which were made by carpenters, designed to take advantage of the regular household delivery of large blocks of ice. They were insulated wooden boxes lined with tin or zinc and used to hold blocks of ice to keep the food cool. A drip pan collected the melt water – and had to be emptied daily. In the 1920's Electric fridges were not yet mass-produced and were mainly owned by the wealthy, costing around \$1,000.00. By 1945, full mass production of modern refrigerators began after World War II. It

brought efficient food storage to the American home, setting a new standard of food safety. By 1950 - More than 80 percent of American farms and more than 90 percent of urban homes had a refrigerator.

### **Modern Day Fermentation**

Consider returning to the old fashioned method of Fermentation to preserve food today. Modern studies are showing us that fermented food is good for your health and is a wonderful way to extend the life of those cabbages and cucumbers flowing out of your gardens and markets.

When considering fermenting your own foods, it is important to remember that fermentation is, essentially, controlled decay. It creates very strong, compelling flavors, which can be an acquired taste for some and culturally subjective for others. Fermented food is neither fresh nor rotten, and it is up to the personal tastes of the fermenter to decide what is palatable. Fermenting our produce is a great way to preserve a bit of summer.

Listed here are a few examples of fermented foods: yogurt, sour cream, kefir, beer, wine, mead, tea, kombucha, soy sauce, tempeh, miso, pickles, sauerkraut, kimchi, cheese, sourdough bread, and vinegar, just to name a few.

Advantages of acid-food fermentation are:

- 1 It renders foods resistant to microbial spoilage and the development of food toxins
- 2 It makes the foods less likely to transfer pathogenic microorganisms
3. It generally preserves the foods between the time of harvest and consumption
- 4 It can modify the flavor of the original ingredients and often improve the nutritional value.