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The unsung hero in the battle against food waste

Food waste is a staggering challenge on a global scale. With over 800 million people suffering from hunger worldwide and one third of all food ending up in the trash, the scale of this issue is immense. Every year, billions of tons of food are wasted, resulting in not only the loss of food but also the misuse of water, animal feed, fertilizer and energy used to produce it. It's an ongoing cycle because of our fear of consuming food that is stale or expired as we are concerned about contamination by harmful microbes like bacteria and fungi.

By utilizing the natural processes of fermentation and the power of beneficial bacteria, we can help extend the shelf life of food products, reducing waste and ensuring that more people have access to nutritious meals.

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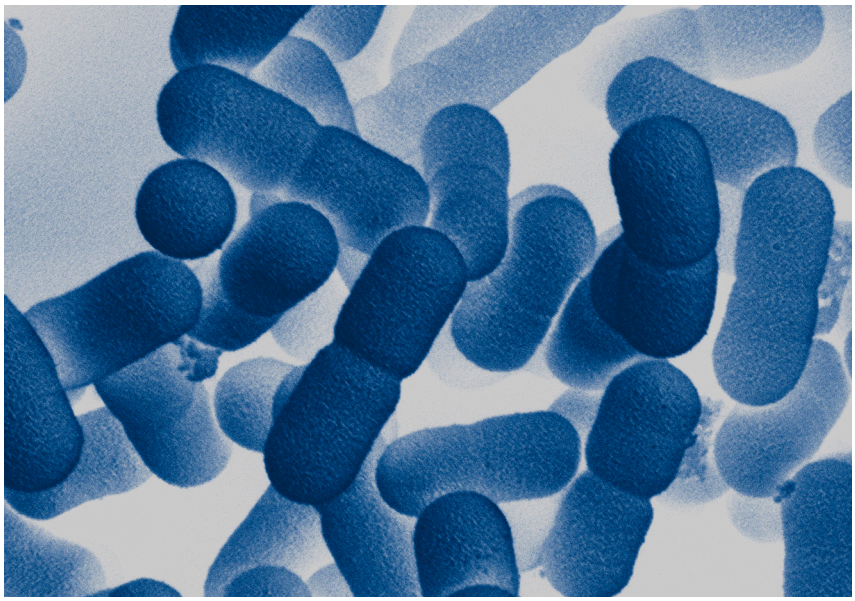
The Science Behind Fermentation

Fermentation has been used since ancient times. During the biological fermentation process, microorganisms, such as bacteria and yeast, break down carbohydrates in fruits, grains, vegetables and milk sugars, producing byproducts like acids, gases and alcohol. In ancient times, our ancestors discovered that a small amount of fermented starter could kickstart the process in a large batch of unfermented food – like the Egyptians used a fermented mash of ground grains and water to brew beer.



Case study: Fighting Food Waste with Food Cultures

When it comes to food cultures (lactic acid bacteria), they convert the sugar of the milk into lactic acid during fermentation. This lowers the pH level in the food product and creates acidity, which slows down the growth of unwanted bacteria. In this way, fermentation not only creates the tangy flavor and texture of dairy products that we like – it also results in a microbial environment that can inhibit growth of spoilage microbes in our food and thus keep it fresh and safe for longer.

The use of fermentation and food cultures has revolutionized the way we approach food quality and shelf-life improvement. These cultures, developed through years of research and testing, have been carefully selected for their beneficial effects in the fight against food waste.

In 2012, we launched our first food culture specifically developed to help enhance the bioprotective properties from the fermentation of dairy products such as yogurt, sour cream, and several fresh white cheese varieties. The launch was the culmination of several years of research, scrutinizing a vast culture collection of over 40,000 bacterial strains to find the right candidate for the job.

The secret lies in the mode of action of this particular culture. Technically, it simply “eats the food” that the bad bacteria need to survive in the dairy product. Good and bad bacteria compete for the same nutrients naturally present in our food, in this case manganese, which is crucial for the growth of yeast and molds. By depriving yeast and molds of this vital nutrient, the hero culture can effectively delay spoilage and enhance product quality and shelf life.

The potential impact of fermentation-enabled bioprotection extends far beyond the dairy aisle. By harnessing the power of beneficial bacteria, Novonesis’ sustainable biosolutions can prevent tons of food from ending up in landfills each year and pave the way for a healthier future with less artificial ingredients. Moreover, by improving the quality and shelf-life of food products, we can ensure that more people have access to safe and nutritious meals, addressing the global issue of hunger and food insecurity.

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