

The Benefits of Freezing

As society becomes more curious about what we eat and how it is made, it is important to understand the science behind frozen foods. Read below to learn more about how freezing safeguards the quality, safety and sustainability of the foods we love.

Freezing Fundamentals— Putting Nature on Pause

Freezing preserves food by solidifying the naturally occurring water. The solidified water, or ice, pauses nutrient loss and microbial growth.

Commercial freezing uses low temperature to remove heat in a process known as “Individual Quick Freezing (IQF).” The speed at which food is frozen is critical to product quality. IQF reduces the temperature of food to -20°F in a few minutes, which creates the smallest ice crystals possible. Small ice crystals protect the cellular structure of meats, fruits, vegetables and multi-ingredients meals.

Freezing Ensures Quality

By pausing nutrient degradation, bacterial growth, and enzyme activity, the small ice crystals preserve flavor, texture, and color—all the things we love about the food we eat.

Freezing also locks in nutrients in the peak of ripeness for fruits and vegetables; protects protein, vitamins A and D, and other nutrients in meat, seafood, and poultry; and preserves macro- and micronutrients in prepared foods.¹ In fact, studies show that frozen fruits and vegetables are nutritionally equal to, and in some cases superior to, their non-frozen counterparts.

Freezing is simply a change in temperature that creates a nutritious, delicious, abundant and safe food supply year-round.

Freezing is Safe

Freezing halts microbe growth by making their environment uninhabitable, thus preventing spoilage. Foods are processed and handled in clean facilities, and often blanched (briefly exposing food to boiling water or steam) to reduce microbes before they are frozen. Rigorous hygiene practices and proper handling before and after freezing are crucial to ensure safety.

Freezing Supports Sustainability

Frozen food is less likely to spoil or cause extra leftovers, thanks to its longer shelf life, single-serve meals and the ability to prepare only what is needed. This means less opportunity for food waste, which saves the average American household at least \$1,500 annually² and reduces the amount of waste in landfills.



1. D.P. Attrey, Chapter 44 – Safety and quality of frozen foods, Editor(s): Rajul Kumar Gupta, Dudeja, Singh Minhas, Food Safety in the 21st Century, Academic Press, 2017, Pages 527–539, ISBN 9780128017739, <https://doi.org/10.1016/B978-0-12-801773-9.00044-3>.

2. MITRE–Gallup Survey Finds U.S. Households Waste 6.2 Cups of Edible Food Every Week on Average <https://www.mitre.org/news-insights/news-release/mitre-gallup-survey-finds-ushouseholds-waste-62-cups-edible-food-every#:~:text=>