



BY AMERICAN MEAT SCIENCE ASSOCIATION

Sous-vide Cooking

Sous vide cooking is a method of food preparation in which food is vacuum sealed and cooked in a water bath that is set to a precise temperature and circulated by a sous vide device. Due to ease of use and affordability, this cooking method has grown increasingly popular in food service kitchens and domestic settings.

Ensuring the safety of meat products during cooking is paramount, particularly when employing methods like sous-vide, which involve precise temperature control over extended periods. The U.S. Department of Agriculture's Appendix A provides guidelines on time and temperature combinations to achieve sufficient lethality against pathogens. Below are several published research studies to aid understanding parameters of safety for your process.

Low-temperature, long holding time sous vide cooking recommendations from some equipment manufacturers and chefs in popular press raise food safety concerns about this process – specifically those for the preparation of nonintact beef products.



Inactivation of Salmonella in nonintact beef during low-temperature sous vide cooking.

Read the details:

<https://www.sciencedirect.com/science/article/pii/S0362028X22000102>

Fate of E. coli in nonintact beef steaks cooked sous-vide at various temperatures and holding times.

This study confirms that certain time/temperature combinations can achieve desired pathogen reduction. Read the details here:

<https://www.foodprotection.org/members/fpt-archive-articles/2021-11-fate-of-escherichia-coli-in-nonintact-beef-steaks-during-sous-vide-cooking-at-different-hold/>

Integration of sous-vide cooking with high-pressure processing (HPP) adds an additional parameter that can impact on meat safety and quality.

Read more at these two studies:

<https://www.sciencedirect.com/science/article/pii/S0023643817305169>

<https://www.sciencedirect.com/science/article/pii/S0023643818311393>

These studies underscore the importance of adhering to validated cooking parameters to ensure meat safety.