

High Hydrostatic Pressure Processing

CASE FSS 4.2.5

SCC Minnesota

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High Hydrostatic Pressure (HHP) is a method of cold processing foods using high pressure. HHP is also known as Pascalization, named after Blaise Pascal. HHP is an effective method to inactivate microorganisms and food borne pathogens. HHP can retain the flavor, texture, and overall appearance of foods, which the consumer is looking for in foods. HHP has been around since the 19th century but only became popular in 2000. Consumers demand that their food be healthy, easy to prepare, appealing, and nutrients are retained in the final product.

- History of HHP
 - How HHP started
 - Improvements made
- Process of HHP
 - Description of the process
 - Different pressures needed to eliminate potential negative microbes
- Overall effect on Micro-organisms
 - Heat resistant bacteria
 - Listeria
 - Staphylococcus
 - E. coli
 - Salmonella
- Benefits
 - Declining food cost
 - Food preparation time
 - Health aspects of the food
 - Convenience
 - Safety
- Negative aspects
 - Over processed
 - High sugar and salt content
 - Chemical preservatives
 - Increased calories
- Products used for
 - Dairy products
 - Fruits
 - Vegetables
 - Juices
 - Seafood
 - Meats

Adapting High Hydrostatic Pressure for Food Processing ... (n.d.). Retrieved from http://www.bing.com/cr?IG=D82C4AAEB66543A0A9F573D015512B1D&CID=31B10790EDBC69EB0B080BD1EC41685E&rd=1&h=MWWRqaj0UpXW1vxLhyicGlthkoifhITO7Gqtdv8sI1c&v=1&r=http://ffigs.org/2015/T_Koutchma_Adapting_HHP_for_Food_Processing.pdf&p=DevEx.LB.1,5845.1

This is a gives a basic overview of HHP: including pros and cons, foods that work best with it and compares it to other treatments.

Chawla, R., Patil, G. R., & Singh, A. K. (2010). High hydrostatic pressure technology in dairy processing: A review. *Journal of Food Science and Technology*, 48(3), 260-268. doi:10.1007/s13197-010-0180-4

This article focuses on use of HHP with preserving dairy products and connects it to the needs of the consumer.

Zamantha Escobedo-Avellaneda, Mirian Pateiro Moure, Nattaporn Chotyakul, J. Antonio Torres, Jorge Welti-Chanes & Concepción Pérez Lamela (2011) Benefits and limitations of food processing by high-pressure technologies: effects on functional compounds and abiotic contaminants; pages 351-364, published November 4 2011.

This article goes into more scientific detail about how HHP affects different foods and potential contaminants.

