The advantages of using high pressure processing with seafood

High pressure processing (HPP) is cold pasteurisation in pure water; it uses ultra-high pressure purified water to keep seafood both shell and pathogen free. HPP is used in several segments of the food industry to inactivate foodborne pathogens such as salmonella, Listeria monocytogenes, E. coli O157:H7, campylobacter species, and other vegetative pathogens.

by The Technical Team, Avure Technologies, USA. www.avure-hpp-foods.com

In the oyster industry, HPP provides an approved process for the inactivation of Vibrio bacteria which provides a high risk from the consumption of raw oysters and other shellfish. HPP helps producers increase food safety and extend shelf-life, while providing consumers with nutritious, natural, flavourful food.

Avure helps producers implement HPP from recipe development and process validations to installation, regulatory affairs and post installation support.

The company operates an in-house HPP Foods Applications Center in Erlanger, Kentucky, USA to help partners perfect their products, formulas and packaging.

Additionally, they partner with several HPP certified laboratories worldwide to facilitate HPP product process optimisation and regulatory requirements. Avure has an extensive library of process and package validated studies conducted for regulatory approval which are available for clients considering HPP technology.

Avure's HPP processing crushes pathogens and extends shelf life.

Benefits of HPP for seafood

Seafood processors reap extraordinary benefits through the application of high pressure to enhance product offerings and expand market opportunities.

HPP is extensively used in the lobster and oyster industries for the extraction of meat with limited or no manual labour.

At lower pressures the advantages of HPP include:

- Separates 100% of meat from the shells without the use of heat.
- Increases total meat yield in lobster by 80% compared to heat.
- Increases productivity, maximises labour usage and enhances operational efficiencies.
- Enhances nutrition, mouthfeel and taste.

HPP is applicable for both microbiological benefits and process enhancement on most seafood items such as lobster, crab, shrimp, oysters, fish, salted cod, mussels and clams. Innovative food processors use HPP to expand existing markets and enter new ones.

Food safety

HPP is a food safety intervention technology which is recognised by global food safety agencies.

The FDA recognises HPP as a decontamination process for Vibrio bacteria in oysters. Avure worked with the seafood branch of the FDA and several state certified university laboratories to validate this study.

Similar food-safety and shelf life benefits are achieved with other seafood items such as shrimp, crab meat and fish.

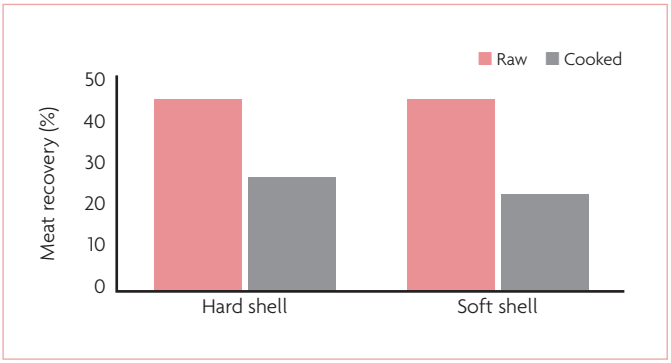
Pathogens inactivated by HPP include vibrio, salmonella, listeria, and E. coli.

Meat from shell separation and texture benefits

HPP allows 100% product yield without loss of product quality and nutritional benefits. Small to large shellfish and crustacean companies are major users of HPP for meat separation and finest quality meat for sushi and other premium entrée items.

HPP is also used for the inactivation of Anisakis and other parasites in sushi grade seafood items. Salted cod (Baccala) can be desalted and HPP used to extend the shelf life and enable the consumer to cook it immediately rather than waiting three days at home for desalting. ■

Fig. 1. Meat recovery in lobster using high pressure processing.



HPP yields the highest quality meat for premium food preparation.