

Brainstorm: Innovations in Thermal Food Processing Pt. 1

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The *Food Manufacturing* Brainstorm features industry experts sharing their perspectives on issues critical to the overall food industry marketplace. In this issue, we ask:

Which innovations in thermal food processing should manufacturers be aware of and how can they benefit operations and product quality?

Consumers are demanding minimally processed foods with high nutritional value without preservatives. Thermal processing is widely used for the preservation of food and beverages but can affect the organoleptic and nutritional properties of foods. High Pressure Pasteurization (HPP) is a non-thermal process that is one of the fastest growing food technologies.

In HPP, packaged foods are subjected to pressures up to 6,000 bars (87,000 psi) in a vessel containing water. These pressures inactivate pathogenic and spoilage microorganisms in foods without affecting the nutrients, flavor and taste of the foods. The pressure is distributed evenly on all sides of the package, allowing different sizes of products to see the same pressure at the same time, unlike thermal treatment where there is a temperature differential based on product size and differences in packages.

HPP is especially desirable for foods that are sensitive to heat such as guacamole, fresh juices and high nutritional beverages, wet salads, sliced deli meats and

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several other food categories. These products contain no chemical preservatives, meet food safety standards, and have an extension of quality and shelf-life. Published results on sensorial analyses and consumer panels have confirmed similarities of flavor and taste of HPP products to fresh.

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