

Review on Preserving and Processing of Foods using High Pressure Technology

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ABSTRACT

Food preservation using high pressure is a promising technique in food industry as it offers numerous opportunities for developing new foods with extended shelf-life, high nutritional value and excellent organoleptic characteristics. The resistance of microorganisms to pressure varies considerably depending on the pressure range applied, temperature and treatment duration, and type of microorganism. High pressure is an alternative to thermal processing. High pressure processing utilizes intense pressure (about 400–600 MPa or 58,000–87,000 psi) at chilled or mild process temperatures (<45°C), allowing most foods to be preserved with minimal effects on taste, texture, appearance, or nutritional value. The aim of this review is the different aspects and potential application of high pressure technology and critically examines high pressure processing related studies. In addition to discussing the effects of high pressure on food components, this review covers the combined effects of high pressure processing with: gamma irradiation, alternating current, ultrasound, and carbon dioxide or anti-microbial treatment.

Keywords: high pressure technology, food safety, Mechanism, Preservation.