High Pressure Processing Applications in Plant Foods

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Abstract

High pressure processing (HPP) is a cold pasteurization technology by which products, prepacked in their final package, are introduced to a vessel and subjected to a high level of isostatic pressure (300–600 MPa). High-pressure treatment of fruit, vegetable and fresh herb homogenate products offers us nearly fresh products in regard to sensorial and nutritional quality of original raw materials, representing relatively stable and safe source of nutrients, vitamins, minerals and health effective components. Such components can play an important role as a preventive tool against the start of illnesses, namely in the elderly. An overview of several food HPP products, namely of fruit and vegetable origin, marketed successfully around the world is presented. Effects of HPP and HPP plus heat on key spoilage and pathogenic microorganisms, including the resistant spore form and fruit/vegetable endogenous enzymes are reviewed, including the effect on the product quality. Part of the paper is devoted to the industrial equipment available for factories manufacturing HPP treated products.

Keywords: fruit and vegetable products; HPP; heat assisted HPP; effect on microorganisms; effect on endogenous enzymes; industrial equipment

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