Title High pressure processing of fruits and vegetables

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Citation Stewart Postharvest Review, Volume 2, Number 1, February 2006, pp. 1-10(10)

Keyword high pressure processing; enzyme inactivation; fruits and vegetables; juices; microorganisms; colour; texture; pressure-shift freezing

Abstract

Purpose of review: High pressure processing (HPP) is one of the many novel techniques for processing food materials. This review details potential applications of the HPP technique for fruit and vegetable processing.

Recent findings: HPP employs high pressures (400–1200 MPa) to kill microorganisms and inactivate the enzymes that cause undesirable changes in fruits and vegetables, which reduces their shelf-life. This technique can be applied with minimal increase in product temperature. HPP is gaining in popularity because of its potential to achieve desirable effects with minimum changes in sensory and nutritional attributes, and reliable food safety.

Directions for future research: Future research should: evaluate synergistic effects among pressure, temperature and other variables, investigate the influence of pressure on reduction/elimination of pathogenic and spoilage microbial populations, investigate the inactivation of enzymes in fruits and vegetables using a proper experimental design so that kinetic parameters are quantified, identify and evaluate the critical process factors for the survival of pathogens or surrogates in a statistical manner, and develop Hazard Analysis and Critical Control Point plans for the application of HPP for the processing fruits and vegetables.