



High pressure assisted infusion of antioxidants in pineapple slices.

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Abstract:

The effect of high pressure pretreatment (50-350 MPa/10 min) on mass transport process and the influence of process parameters on enhanced infusion of antioxidants into fresh pineapple slices was also carried out. The rate of mass transfer of moisture, solid and antioxidant content with or without the application of high pressure were studied over a wide range of concentration of osmotic solution (0 to 70° Brix). The increase in concentration of osmotic solution resulted in reduced infusion of antioxidants and enhanced mass transfer rates when pure water (aqueous suspension of curcuminoids) was used as an infusion medium. The diffusion coefficient for moisture ($1.17 \times 10^{-09} \text{ m}^2/\text{s}$ to $1.68 \times 10^{-09} \text{ m}^2/\text{s}$) and solid content ($1.42 \times 10^{-09} \text{ m}^2/\text{s}$ to $1.75 \times 10^{-09} \text{ m}^2/\text{s}$) for the pressure treated sample (350 MPa/10 min) was found to increase with increase in concentration (70°Brix) of the surrounding solution due to higher osmotic pressure. The pressure pretreatment (350 MPa/10 min) also resulted in higher diffusivity of the bioactive compound ($0.86 \times 10^{-09} \text{ m}^2/\text{s}$ to $1.53 \times 10^{-09} \text{ m}^2/\text{s}$) when pure water was used as an infusion medium. The present study concluded that high pressure pretreatment of solid foods is a feasible technology for infusion of bioactive compounds.

Biography:

Jincy M. George has completed her PhD at the age of 28 years from Central Food Technological Research Institute, Mysore, India. She is currently working as the as-



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Recent Publications:

1. Effect of High-Pressure Processing on Selected Food Processing Operations, Jincy M. George, Navin Kumar Rastogi
2. High Pressure Processing for Food Fermentation, Jincy M. George, Navin Kumar Rastogi
3. Studies on influence of moisture content on engineering properties of kodo and kutki millets, S. Balasubramanian, Jincy M. George, S.D. Deshpande, Pitam Chandra
4. Effect of high pressure pretreatment on drying kinetics and oleoresin extraction from ginger, Jincy M. George, H.B. Sowbhagya, Navin K Rastogi

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