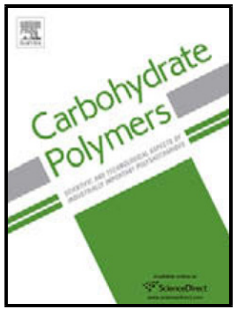

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Effects of high hydrostatic pressure and high pressure homogenization processing on characteristics of potato peel waste pectin

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Highlights:

- Pectin from potato peel waste was prepared.
- The pectin was modified using high hydrostatic pressure.
- The pectin was modified using high pressure homogenization.
- Structural and physicochemical properties and morphology were investigated.

Abstract

To better understand the effects of high pressure processing on potato peel waste pectins, the structural characteristics, physicochemical properties, and morphological features of the pectin treated with high hydrostatic pressure (HHP) and high pressure homogenization (HPH) at 200 MPa for 5 min were studied. The potato peel waste pectins subjected to high pressure treatments exhibited increased galacturonic acid contents as well as decreased esterification degree, (Gal+Ara)/Rha ratio, and molecular weight. Furthermore, the potato peel waste pectins treated with high pressure had an increased viscosity and improved emulsifying properties. The morphological features, determined by atomic force microscopy, shown the degradation of side chains of the pectin induced by high pressure treatments. The results suggest that high pressure