

Quality characteristics of biodegradable film prepared from duck feet gelatin

ABSTRACT

Biodegradable films containing different concentrations of duck feet gelatin (DFG) (2.0, 2.5, 3.0, and 3.5%) were produced, and their mechanical and physicochemical properties were measured and compared to those of biodegradable films made from commercial bovine gelatin (CBG). Gel strength of DFG (306.96 g) was significantly higher than that of CBG (216.78 g). Elongation at break (EAB), thickness, and water vapour permeability of DFG films significantly increased as the concentration of gelatin increased. Films with DFG concentration of 3.5% had the EAB value 33.00, compare to CBG with EAB value 25.56%. DFG films exhibit significantly lower water solubility compared to CBG films. Water solubility of films with DFG concentration of 3.5% is 32.37%, meanwhile for CBG is 48.74%. Both of the gelatin films prepared from DFG and CBG were transparent, as indicated by the high L*, ranging from 94.64 to 96.01 for DFG and 95.54 to 96.06 for CBG sources. These results indicate that DFG has great potential for future application as a source material for production of gelatin-based biodegradable films.