PHYSICOCHEMICAL PROPERTIES OF CHICKEN FEET GELATIN INCORPORATED WITH GREEN TEA EXTRACT

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ABSTRACT

PHYSICOCHEMICAL PROPERTIES OF CHICKEN FEET GELATIN INCORPORATED WITH GREEN TEA EXTRACT

Gelatin is a soluble mixture of proteins that can be produced by the hydrolysis process of collagen. The gelatin has biodegradable and highly reactive than other polymers. Chicken feet gelatin (CFG) has a great mechanical strength and high production yield by acid-soluble extraction compared to fish and mammalian gelatin but it had brittle and split with water challenging to fulfil food packaging applications. The research corresponding to incorporated CFG with GTE is insufficient. In this study, 7.39 % of CFG was successfully extracted by using acid-soluble extraction and crosslinked by 10, 20, and 30 w/w of green tea extract (GTE). It was found that the incorporated films with GTE showed better tensile strength (TS) and lower elongation at break (EAB), water solubility (WS) and water vapour permeability (WVP) of films. However, the excess concentration of GTE, the opposite effect had dominant. The optimum concentration of GTE incorporated was 20 w/w which was 1.11 MPa, 172.50 %, 41.62 % and 1.3689 ± 0.3313 g mm^{-1} kPa^{-1} h^{-1} of TS, EAB, WS and WVP. Based on this study, GTE had successfully acted as natural crosslinker on the film's matrix and it has potential to improving the physicochemical properties for food packaging application.