

Effect of Aloe vera (*Aloe barbadensis* Miller) gel on the physical and functional properties of fish gelatin films as active packaging

ABSTRACT

Present study was conducted to investigate the feasibility of the combination of fish gelatin and Aloe gel in producing composite films and to determine the effect of Aloe gel concentrations (1, 3, 5, 7 and 9% wt/wt) on the physical properties and antioxidant activity of the composite films. The moisture content of the composite films was proportional to the concentration of Aloe gel. Also, the water solubility and tensile strength of the films decreased with increasing Aloe gel concentration. However, Aloe gel did not cause any significant effect ($p \geq 0.05$) on thickness, water vapour permeability (WVP) and colour of the composite films. The gelatin/Aloe composite films exhibited smooth surface microstructures similar to non-composite gelatin film when observed under scanning electron microscope (SEM). The gelatin/Aloe composite films also showed concentration dependant ABTS and DPPH radical scavenging activities.

Keyword: Aloe vera (*Aloe barbadensis* Miller); Active packaging; Biodegradable films; Fish gelatin; Water vapour permeability (WVP)