World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:9, No:07, 2015

Effect of Incorporation of Seaweed Extract in Gelatin Based Film on Physic-Chemical and Bioactive Properties of Film

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Abstract : Brown seaweed L. hyperborea is a rich source of phenolic compounds with antioxidant and antimicrobial properties. The aim of this work was to study the effect of incorporation of L. hyperborea extract to bovine gelatin film on the physicochemical and antioxidant properties of film. Films with fraction of 25% by weight of bovine gelatin sample were cast with addition of glycerol as a plasticizer. The total phenolic content and antioxidant activity of the films showed higher levels with addition of seaweed extract. Also film appearance properties such as film thickness, color and light transparency were evaluated. Film appearance was slightly modified whereas microstructure of films showed rough patches at 50% level of extract in the film. Hydrophilicity and glass transition temperature of the films also increased with increased level of seaweed extract. It was found that seaweed extract can be incorporated within gelatin and casein for development of biofunctional films.

Keywords : Laminaria hyperborea, ultrasound, seaweed extract, bovine gelatin film, antioxidant, phenolic compounds
Conference Title : ICFAE 2015 : International Conference on Food and Agricultural Engineering
Conference Location : Athens, Greece
Conference Dates : July 20-21, 2015