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Plasticiser Effect on Water Vapour Permeability Properties of Locust bean gum--Based Edible Films

Özgür Altan BOZDEMİR, Mehmet TUTAŞ

Department of Chemistry, Akdeniz University, Antalya-TURKEY

e-mail: aob@mail.akdeniz.edu.tr

 [Keywords](#)
[Authors](#)



chem@tubitak.gov.tr

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Abstract: The barrier properties of edible films prepared from polysaccharide polymer (locust bean gum) and various plasticisers (glycerol, propylene glycol, sorbitol, and polyethylene glycol 200) together with hydrophobic modifiers (stearopten and beeswax) were examined. It was determined that the films containing polyethylene glycol 200 (PEG 200) and sorbitol have the lowest water vapour permeability values and the films containing glycerol have the highest WVP values. It was found that the most reasonable of the studied plasticisers was PEG 200. Polysaccharide--based edible films have higher WVP values than those of lipid-- and protein--based edible films. In order to reduce the WVP of locust bean gum (LBG) based edible films they were modified by adding a small amount of stearopten or beeswax to the film structure. It was determined that the WVP values of such modified edible films were always lower than those of unmodified films.

Key Words: Locust bean gum, edible film, water vapour permeability, plasticiser, stearopten, beeswax

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