

ABSTRAK

Jeni Yanwar Norgandhi. NPM 20.03.4.1.1.00023. Karakteristik *edible film* dengan formulasi yang berbeda berbasis gelatin kulit ikan dan ekstraksi karaginan dari rumput laut (*Euclima cottoni* sp.) Dibawah bimbingan Insafitri, S.T, M.Sc., Ph.D.

Produksi plastik mengalami peningkatan diikuti dengan sampah plastik yang dihasilkan. *Edible film* merupakan inovasi baru untuk menekan penggunaan plastik yang terbuat dari bahan alami gelatin kulit ikan *Redman fish* dan ekstrak karaginan dari rumput laut (*Euclima cottoni*) dan *plastizer* gliserol. Tujuan penelitian ini untuk mengetahui karakteristik dan perbedaan nyata pada setiap formulasi meliputi kadar air, ketebalan, kelarutan, Adsorpsi, laju transmisi uap air, transparansi dan kuat tarik. Metode penelitian dengan *experimental laboratorium* dan formulasi mengacu pada Rancangan acak lengkap (RAL). Formulasi P1 60% Gelatin : 40% karagenan, P2 70% gelatin : 30% Karagenan, P3 80% gelatin : 20% karagenan, P4 90% gelatin : 10% karagenan dan P5 100% gelatin : 0% karagenan. Terdapat perbedaan nyata pada karakteristik kadar air (6,47%-14,54%), Kelarutan (32,61%-48,29%), Transparansi (1,12%-0,57%), Laju transmisi uap air (18,64%-6,54%), Adsorpsi (1,03%-2,01%). Karakteristik ketebalan (0,17m²- 0,09m²) dan kuat tarik (28,24%-178,33%) tidak terdapat perbedaan nyata. Karakteristik ketebalan, kadar air, adsorpsi, transparansi, kuat tarik telah sesuai standard baku mutu dan karakteristik kelarutan dan laju transmisi uap air belum memenuhi standard baku mutu. Formulasi terbaik dari penelitian ini adalah P1 dengan 60% gelatin dan 40% karaginan.

Kata kunci: *Edible film*, *Karaginan*, *Gelatin kulit ikan*, *Gliserol*.

ABSTRACT

Jeni Yanwar Norgandhi. NPM 20.03.4.1.1.00023. Characteristics of edible film with different formulations based on fish skin gelatin and extraction of carrageenan from seaweed (*Eucheuma cottoni* sp.) Under the guidance of Insafitri, S.T, M.Sc., Ph.D.

Plastic production has increased, followed by plastic waste produced. Edible film is a new innovation to reduce the use of plastic made from natural ingredients, Redman fish skin gelatin and carrageenan extract from seaweed (*Eucheuma cottoni*) and glycerol plasticizer. The aim of this research is to determine the characteristics and real differences in each formulation including water content, thickness, solubility, adsorption, water vapor transmission rate, transparency and tensile strength. The research method used experimental laboratories and formulations referring to a completely randomized design (RAL). Formulation P1 60% Gelatin: 40% carrageenan, P2 70% gelatin: 30% Carrageenan, P3 80% gelatin: 20% carrageenan, P4 90% gelatin: 10% carrageenan and P5 100% gelatin: 0% carrageenan. There are significant differences in the characteristics of water content (6.47%-14.54%), solubility (32.61%-48.29%), transparency (1.12%-0.57%), water vapor transmission rate (18.64%-6.54%), Adsorption (1.03%-2.01%). There are no significant differences in the characteristics of thickness (0.17m²- 0.09m²) and tensile strength (28.24%-178.33%). The characteristics of thickness, water content, adsorption, transparency, tensile strength have met quality standards and the solubility characteristics and water vapor transmission rate have not met quality standards. The best formulation from this research was P1 with 60% gelatin and 40% carrageenan.

Key words: *Edible film, Carrageenan, Fish skin gelatin, Glycerol.*