KARAKTERISTIK FISIKOKIMIA *EDIBLE FILM* BERBASIS PATI TALAS (*Colocasia esculenta* (L.) Schott var. *pratama*) DENGAN VARIASI KONSENTRASI GLISEROL SEBAGAI KEMASAN MINYAK BUMBU

INTISARI

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Pati talas Pratama (*Colocasia esculenta* (L.) Schott var. *pratama*) merupakan sumber pati lokal yang berpotensi sebagai bahan baku *edible film biodegradable* pengganti plastik. Penelitian ini bertujuan untuk mengkaji pengaruh variasi konsentrasi gliserol sebagai *plasticizer* terhadap karakteristik *edible film* berbasis pati talas Pratama serta mengevaluasi potensinya sebagai kemasan minyak bumbu mi instan.

Edible film diformulasikan dengan konsentrasi gliserol 0,5%; 0,7%; dan 0,9% menggunakan Rancangan Acak Lengkap (RAL). Karakterisasi meliputi sifat fisik, kimia, optikal, dan reologi, serta karakterisasi pati menggunakan SEM, DSC, dan RVA. Uji aplikasi dilakukan secara visual melalui pengisian minyak, penyegelan, dan pengamatan dalam air panas.

Hasil penelitian menunjukkan bahwa pati talas Pratama memiliki diameter granula relatif kecil (1,69 μm) dengan morfologi poligonal tidak beraturan. Peningkatan konsentrasi gliserol meningkatkan *elongation at break*, kadar air, WVP, dan transmitansi, serta menurunkan *tensile strength* dan viskositas. Ketebalan, warna, dan kelarutan tidak berbeda nyata. Formulasi gliserol 0,7% menghasilkan sifat paling seimbang. *Edible film* mampu menahan minyak serta mengalami pelunakan dan terfragmentasi dalam air panas. Dengan demikian, *edible film* berbasis pati talas Pratama berpotensi sebagai kemasan alternatif minyak bumbu mi instan, meskipun masih diperlukan optimasi lebih lanjut.

Kata kunci: pati talas Pratama, *edible film*, gliserol, karakteristik fisikokimia, kemasan *biodegradable*

PHYSICOCHEMICAL CHARACTERISTICS OF EDIBLE FILM BASED ON TARO STARCH (*Colocasia esculenta* (L.) Schott var. *pratama*) WITH GLYCEROL CONCENTRATION VARIATION AS PACKAGING FOR SEASONING OIL

ABSTRACT

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Pratama taro starch (*Colocasia esculenta* (L.) Schott var. *pratama*) is a local starch source with potential as a biodegradable edible film material to replace conventional plastic packaging. This study aimed to evaluate the effect of glycerol concentration as a plasticizer on the characteristics of taro starch-based edible films and to assess their potential as alternative packaging for instant noodle seasoning oil.

Edible films were prepared with glycerol concentrations of 0.5%, 0.7%, and 0.9% using a Completely Randomized Design (CRD). The films were characterized for physical, chemical, optical, and rheological properties, while the starch was analyzed using SEM, DSC, and RVA. Application testing was conducted visually through oil filling, sealing, and observation in hot water.

The results showed that Pratama taro starch had relatively small granule diameters (1.69 μm) with irregular polygonal morphology. Increasing glycerol concentration increased elongation at break, moisture content, WVP, and light transmittance, while decreasing tensile strength and viscosity. Thickness, color, and solubility were not significantly affected. The 0.7% glycerol formulation showed the most balanced properties. The edible film was able to retain oil and showed softening and fragmentation in hot water. Therefore, taro starch-based edible film has potential as an alternative packaging for instant noodle seasoning oil, although further optimization is required.

Keywords: taro starch, edible film, glycerol, physicochemical properties, biodegradable packaging