RINGKASAN

Wildan Zuhdi. 201969050002. Pengaruh Penambahan Ekstrak Bunga Telang (Clitoria Ternatea) Dan Konsentrasi Sorbitol Terhadap Karakteristik *Edible film* Dari Pati Biji Durian Dan Pati Jagung. Dibawah Bimbingan Cahyaning Rini Utami, S.Si., M.Sc.

Edible film merupakan lapisan tipis yang diaplikasikan untuk melapisi produk pangan, yang dapat dikonsumsi bersama dengan produk pangannya. *Edible film* dapat terdegradasi oleh mikroorganisme, terbuat dari bahan yang dapat diperbaharui dan mampu menghambat perpindahan kelembaban, oksigen, karbon dioksida, aroma, dan zat-zat terlarut pada makanan. Tujuan penelitian ini untuk mengetahui pengaruh penambahan ekstrak bunga telang dan konsentrasi sorbitol sebagai plastisizer terhadap sifat mekanik dan kimia *Edible film* dari pati biji durian dan pati jagung yang dihasilkan serta pengaruh kombinasi perlakuan terbaik terhadap sifat mekanik, kimia dan organoleptik pada *Edible film* dan aplikasinya untuk coating sosis sapi.

Metode penelitian yang di pakai yaitu Rancangan Acak Kelompok (RAK) dengan satu variabel tetap berupa pati biji durian dan pati jagung. Dua faktorial dengan faktor pertama yaitu sorbitol 10%, 14% (v/v) dan faktor kedua, ekstrak bunga telang 0%, 4%, 6%, 8% (v/v). Dari dua faktor tersebut didapatkan 8 kombinasi perlakukan yang masing-masing diulang sebanyak 2 kali ulangan. Sehingga didapatkan 16 kali percobaan. Variabel uji yang diteliti meliputi parameter mekanik dan kimia (ketebalan, kuat tarik, elongasi, kadar air, pH dan antioksidan), parameter sensoris aplikasi edible coating sosis sapi (warna, rasa, tekstur, dan aroma). Analisis data untuk parameter fisik-mekanik dan kimia dianalisis mengunakan statistik ANOVA dan dilanjut uji Tukey. Parameter sensoris di analisa menggunakan metode Friedman. Perlakuan terbaik analisa fisik-mekanik, kimia dan sensoris menggunakan metode Indek Efektifitas De Garmo.

Hasil penelitian sifat fisik-mekanik dan kimia *Edible film* yaitu menghasilkan nilai rerata ketebalan (0.119-0.207 mm), kuat tarik (0.0051-0.0093 MPa), Elongasi (10.61-36.5%), kadar air (17.6-20.25%), pH (7.1-7.8), dan aktivitas antioksidan IC50 (164.69-101.73 ppm). Hasil Uji organleptik aplikasi *Edible film* sebagai coating sosis yaitu rasa antara 2.68 – 4 (kurang suka-suka), aroma antara 3 - 3.64 (netral), warna antara 2.88 – 3.56 (kurang suka-netral), Tekstur antara 2.92 – 3.8 (netral-suka). Perlakuan terbaik terdapat pada kombinasi perlakuan T2S2(Ekstrak bunga telang 4% dan sorbitol 14%) dengan parameter kimia dan Bobot Parameter Indeks Efektifitas sifat Fisik-mekanik dan kimia dan Organoleptik meliputi aktivitas antioksidan 148,83 ppm, kadar air 19,35%, ketebalan 0,178 mm, elongai 34,15%, kuat tarik 0,00 71 MPa, pH 7,5, warna 3.56 (netral), rasa 4 (suka), tekstur 3.52 (netral) dan aroma 3.64 (netral).

Kombinasi perlakuan dengan penambahan pati biji durian dan pati jagung. konsentrasi sorbitol dan konsentrasi ekstrak bunga telang berpengaruh nyata terhadap parameter kuat tarik, aktivitas antioksidan dan tidak berpengaruh nyata terhadap parameter ketebalan, elongasi, kadar air, pH. Uji organolaptik aplikasi *Edible film* sebagai edible coating pada sosis sapi dengan kombinasi perlakuan konsentrasi sorbitol dan konsentrasi ekstrak bunga telang berpengaruh nyata terhadap rasa, aroma dan tekstur. Sedangkan pada uji organoleptik warna tidak berpengaruh nyata. Saran pada penelitian ini yaitu perlu

dilakukan penelitian lanjutan mengenai bagaimana pengaruh penambahan konsentrasi sorbitol dan ekstrak bunga telang terhadap umur simpan edible film, Perlu dilakukan penelitian dengan persen konsentrasi sorbitol 2% atau dengan interval yang sama atau menggunakan jenis plastizier yang berbeda.

Kata kunci : *Edible film*, pati biji durian, pati jagung, sorbitol

SUMMARY

Wildan Zuhdi. 201969050002. Effect Of The Addition Of Butterfly Pea Flower Extract (Clitoria Ternatea) And Sorbitol Concentration On Edible film Characteristics Of Durian Seed Starch And Corn Starch. Supervisor by of Cahyaning Rini Utami, S.Sc., M.Sc.

Edible film is a thin layer that is applied to coat food products and can be consumed together with the food product. Edible film can be degraded by microorganisms, is made of renewable materials, and is able to inhibit the transfer of moisture, oxygen, carbon dioxide, aromas, and dissolved substances in food. The purpose of this study was to determine the effect of the addition of butterfly pea extract and the concentration of sorbitol as a plasticizer on the physical-mechanical and chemical properties of edible films produced from durian seed starch and corn starch, as well as the effect of the best combination of treatments on the mechanical, chemical, and organoleptic properties of edible films and their applications. for coating beef sausages.

The research method used was a Randomized Group (RAK) with one fixed variable in the form of durian seed starch and corn starch. Two factorials are presented, with the first factor being sorbitol at 10% and 14% (v/v) and the second factor being butterfly pea flower extract at 0%, 4%, 6%, and 8% (v/v). From these two factors, eight treatment combinations were obtained, each of which was repeated twice. So that 16 trials were obtained. The test variables studied included physical-mechanical and chemical parameters (thickness, tensile strength, elongation, moisture content, pH, and antioxidants) and sensory parameters for beef sausage edible coating applications (color, taste, texture, and aroma). Data analysis for physical-mechanical and chemical parameters was performed using ANOVA statistics and continued with the Tukey test. Sensory parameters were analyzed using the Friedman method. The best treatment for physical-mechanical, chemical, and sensory analyses uses the De Garmo Effectiveness Index method.

The results of the research on the physical-mechanical and chemical properties of the Edible film produced an average value of thickness (0.119–0.207 mm), tensile strength (0.0051–0.0093 MPa), elongation (10.61-36.5%), moisture content (17.6-20.25%), pH (7.1–7.8), and IC50 antioxidant activity (164.69–101.73 ppm). Organleptic test results for the application of Edible film as a coating for sausages, namely taste between 2.68 and 4 (less like-like), aroma between 3 and 36 (neutral), color between 2.88 and 3.56 (less like-neutral), and texture between 2.92 and 3.8 (neutral-like). The best treatment was found in the combination of T2S2 treatment (4% butterfly pea flower extract and 14% sorbitol) with chemical parameters and weights. 0.178 mm, elongation 34.15%, tensile strength 0.0071 MPa, pH 7.5, color 3.56 (neutral), taste 4 (like), texture 3.52 (neutral), and aroma 3.64 (neutral).

Combination treatment with the addition of durian seed starch and corn starch. sorbitol concentration and peacock flower extract concentration significantly affected the parameters of tensile strength and antioxidant activity but had no significant effect on the parameters of thickness, elongation, moisture content, or pH. Organolaptic test of Edible film application as an edible coating on beef sausage with a combination of treatments of sorbitol concentration and concentration of butterfly pea flower extract had a significant effect on taste, aroma, and texture. Whereas in the organoleptic test, the color has no significant effect. Suggestions for this study are that it is necessary to carry out further research on the effect of adding sorbitol and butterfly pea flower extract

concentrations on the shelf life of edible films. It is necessary to conduct research with a percent sorbitol concentration of 2%, at the same interval, or using a different type of plasticizer.

Keywords: corn starch, durian seed starch, edible film, sorbitol