

INTISARI

KARAKTERISTIK FISIK DAN KIMIA *KELOBOT* JAGUNG (*Zea mays*) SEBAGAI BAHAN PENGEMAS

Penelitian ini bersifat eksploratif yang bertujuan untuk mengevaluasi karakteristik fisik dan kimia *kelobot* sebagai bahan pengemas. Dilakukan evaluasi sifat fisik dan kimia terhadap *kelobot* segar dan kering, meliputi warna, ketebalan, kuat tarik, kuat sobek, mikrostruktur sel, kadar air, kadar lemak, profil asam lemak, senyawa volatil, total fenolik, aktivitas antioksidan, dan aktivitas antijamur. Hasil penelitian menunjukkan bahwa ketebalan, kadar air, dan kadar lemak *kelobot* menurun setelah dikeringkan dengan *shade drying*, namun kuat tarik *kelobot* meningkat setelah dikeringkan. *Kelobot* segar memiliki warna hijau cerah, mikrofibril pendek dan tidak teratur serta ditemukan asam palmitat dan senyawa volatil 7-Methyl-Z-tetradecen-1-ol acetate sebagai komponen major. Sedangkan pada *kelobot* kering memiliki warna kuning kecokelatan, mikrofibril panjang dan teratur, serta ditemukan asam palmitoleat dan senyawa volatil *cis-Vaccenic acid* sebagai komponen major. Pada pengujian senyawa bioaktif, ekstrak kasar metanol selanjutnya dilakukan fraksinasi dengan pelarut heksana, etil asetat, dan butanol. Total fenolik tertinggi terdapat pada fraksi etil asetat ekstrak *kelobot* segar 5,45 mg GAE/g dan ekstrak *kelobot* kering 4,46 mg GAE/g. Aktivitas antioksidan tertinggi terdapat pada fraksi etil asetat ekstrak *kelobot* segar 58,83% RSA dan ekstrak *kelobot* kering 56,96% RSA, masing-masing pada konsentrasi 6.000 ppm. Pengujian aktivitas antijamur menggunakan metode *needle point* menunjukkan pada semua fraksi ekstrak *kelobot* segar dan kering konsentrasi 2.000 ppm tidak memiliki aktivitas antijamur.

Kata kunci: *Kelobot*, karakteristik fisik, asam lemak, senyawa volatil, senyawa bioaktif

ABSTRACT

PHYSICAL AND CHEMICAL CHARACTERISTICS OF CORN HUSK AS PACKAGING MATERIAL

The aim of the exploration study was to evaluate the physical and chemical characteristics of corn husk as packaging material. The physical and chemical properties of fresh and dry corn husk were evaluated, including color, thickness, tensile strength, tear strength, cell microstructure, moisture content, fat content, fatty acid profile, volatile compounds, total phenolics, antioxidant activity, and antifungal activity. The result showed that thickness, moisture, and fat content of fresh corn husk were reduced using shade drying method, but the tensile strength of fresh corn husk increased after drying. Fresh corn husk had light green color, short microfibrils and irregular cross-section, aside from that was found palmitic acid and volatile compound *7-Methyl-Z-tetradecen-1-ol acetate* as the major components. Meanwhile, dried corn husk had brownish yellow color, long microfibrils and regularly cross-section, aside from that was found palmitoleic acid and volatile compound *cis-Vaccenic acid* as the major components. On the testing of bioactive compounds, crude methanol extract was fractioned afterwards with hexane, ethyl acetate, and butanol. The highest value of total phenolic contained in ethyl acetate fraction of fresh and dried corn husk extract were 5,45 mg GAE/g and 4,46 mg GAE/g respectively. The highest value of antioxidant activity contained in ethyl acetate fraction of fresh and dried corn husk extract were 58,83% RSA and 56,96% RSA respectively, at concentration of 6.000 ppm. Antifungal activity testing using needle point method showed all fractions of extracted fresh and dried corn husk at concentration 2.000 ppm had no antifungal activity.

Keywords: Corn husk, physical characteristics, fatty acid, volatile compounds, bioactive compounds.