

## ABSTRAK

Amelia Octaviani 24020120140139. **Deteksi Senyawa Fenolik dan Aktivitas Antioksidan Jamur Tiram Coklat (*Pleurotus pulmonarius*) dari Berbagai Fraksi.** Di bawah bimbingan Wijanarka Wijanarka dan Rizki Rabeca Elfirta

Jamur pangan merupakan bahan pangan fungsional dan berpotensi sebagai sumber antioksidan alami karena kandungan senyawa bioaktif, seperti fenolik dan flavonoid. Tujuan penelitian ini adalah untuk menganalisis kandungan fenolik, flavonoid, aktivitas antioksidan dan menentukan fraksi dengan nilai tertinggi dalam ekstraksi jamur tiram coklat (*P. pulmonarius*). Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan tiga ulangan. Penelitian dilakukan dengan ekstraksi dan fraksinasi dengan pelarut etil asetat dan air. Aktivitas antioksidan dianalisis dalam hal kandungan fenolik total, kandungan flavonoid total, uji DPPH, AEAC, dan potensi daya reduksi. Senyawa bioaktif dianalisis menggunakan GC-MS. Hasil penelitian ini menunjukkan bahwa fraksi air menunjukkan nilai tertinggi pada hasil rendemen (28.52 %), kandungan total fenol (16.31 mg GAE/g), aktivitas antioksidan DPPH ( $IC_{50}$ : 1.39 mg/mL), AEAC (2839.07 mg AEAC/100 g), dan potensi daya reduksi (27.56 mg AAE/g). Fraksi etil asetat menunjukkan kandungan total flavonoid tertinggi (11.41 mg QE/g). Sebanyak 50 senyawa teridentifikasi pada fraksi air *P. pulmonarius* dan 8 senyawa memiliki sifat antioksidan (2-Pyridinecarboxylic acid (33.78%), Phenol (3.99%), N-Hexadecanoic acid (2.00%), L-(+)-Ascorbic acid 2,6-dihexadecanoate (1.52%), Uridine (1.20%), Fumaric acid, 4-heptyl tridecyl ester (0.88%), Fumaric acid, butyl heptadecyl ester (0.70%), dan Fumaric acid, 2-butyl dodecyl ester (0.53%)). Kesimpulan dari penelitian ini adalah penggunaan air sebagai pelarut untuk fraksinasi *P. pulmonarius* dianggap lebih efektif daripada etil asetat. *P. pulmonarius* memiliki potensi sebagai sumber antioksidan alami karena sifat antioksidannya

Kata kunci: *Pleurotus pulmonarius*, fenol, flavonoid, aktivitas antioksidan

## ABSTRACT

Amelia Octaviani 24020120140139. **Detection of Phenolic Compounds and Antioxidant Activity of Brown Oyster Mushroom (*Pleurotus pulmonarius*) from Various Fractions.** Under the guidance of Wijanarka Wijanarka and Rizki Rabeca Elfirta

Edible mushrooms are functional food that have the potential as a source of natural antioxidants due to the content of bioactive compounds, such as phenolics and flavonoids. This study aimed to analyze phenolic content, flavonoids, antioxidant activity and determine the fraction with the highest value in the extraction of brown oyster mushroom (*P. pulmonarius*). This research used a completely randomized design (CRD) with three replications. The research was conducted by extraction and fractionation with ethyl acetate and water solvents. Antioxidant activity was analyzed in terms of total phenolic content, total flavonoid content, DPPH and AEAC assay, and reducing power potential. Bioactive compounds were analyzed using GC-MS. The results of this research showed that the aqueous fraction showed the highest values in yield (28.52%), total phenol content (16.31 mg GAE/g), DPPH antioxidant activity (IC<sub>50</sub>: 1.39 mg/mL), AEAC (2839.07 mg AEAC/100 g), and potential reducing power (27.56 mg AAE/g). The ethyl acetate fraction showed the highest total flavonoid content (11.41 mg QE/g). A total of 50 compounds were identified in the aqueous fraction of *P. pulmonarius* and 8 compounds serving as antioxidant agents (2-Pyridinecarboxylic acid (33.78%), Phenol (3.99%), N-Hexadecanoic acid (2.00%), L-(+)- 2,6-dihexadecanoic acid (1.52%), Uridine (1.20%), Fumaric acid, 4-heptyl tridecyl ester (0.88%), Fumaric acid, butyl heptadecyl ester (0.70%), and Fumaric acid, 2-butyl dodecyl ester (0.53%)). This study concluded that the use of water as a solvent for *P. pulmonarius* fractionation is considered to be more effective than ethyl acetate. *P. pulmonarius* has potential as a source of natural antioxidants due to its antioxidant properties.

*Keywords: Pleurotus pulmonarius, phenol, flavonoid, antioxidant activity*