ANALISIS PROKSIMAT, MINERAL, LOGAM BERAT, DAN AKTIVITAS ANTIOKSIDAN *Auricularia auricula-judae* YANG DIKULTIVASI PADA AMPAS TEBU (*Saccharum officinarum* L.)

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INTISARI

Auricularia auricula-judae merupakan cendawan yang memiliki kandungan makronutrien protein, lemak, karbohidrat, Ca, K, P, Na dan Fe. Kandungan tersebut dipengaruhi oleh substrat untuk kultivasi. Salah satu alternatif medium untuk pertumbuhan *A. auricula-judae* adalah ampas tebu yang mengandung 40% selulosa, 33% hemiselulosa, dan lignin 25%. Penelitian ini dilakukan untuk mempelajari pengaruh ampas tebu sebagai medium kultivasi serta mempelajari kandungan proksimat, mineral, logam berat, dan antioksidan *A. auricula-judae*. Strain *A. auricula-judae* diinokulasi pada ampas tebu dan serbuk kayu sebagai kontrol dengan masa inkubasi 7, 10, dan 14 hari. Selanjutnya dilakukan analisis proksimat (kadar air, kadar abu, lemak total, protein total, dan karbohidrat total), logam berat (Pb, Cd, dan Cu) dan mineral (Fe) metode Spektrofotometri Serapan Atom, kandungan fenolik total metode Folin-Ciocalteu, dan aktivitas antioksidan metode DPPH. Hasil penelitian menunjukkan biomassa miselium *A. auricula-judae* pada ampas tebu selama 14 hari sebesar 23,28 g, sedangkan kontrol 13,80 g. Analisis proksimat menunjukkan kandungan air miselium *A. auricula-judae* pada ampas tebu sebesar (5,10%) mengalami penurunan signifikan dibanding kontrol (28,66%), sedangkan kadar abu (25,88%), lemak total (4,35%), protein total (11,98%), dan karbohidrat total (52,71%) mengalami peningkatan signifikan dibandingkan kontrol. Kandungan mineral Fe mengalami peningkatan (337,03 mg/100 g) dibandingkan kontrol, sementara kandungan logam berat Pb (0,05 mg/100g), Cd (0,05 (mg/100g), dan Cu (2,08) menurun pada hari terakhir inkubasi. Total fenolik tertinggi terdapat pada perlakuan kultivasi 10 hari (4,738 mg/mL), dengan aktivitas antioksidan tertinggi pada perlakuan 7 hari (IC_{50}= 8,28 mg/mL). Dengan demikian, ampas tebu berpotensi sebagai medium kultivasi yang dapat meningkatkan biomassa, nutrien, mineral, dan antioksidan pada *A. auricula-judae* serta dapat menurunkan kandungan logam berat.

Kata kunci: *Auricularia auricula-judae,* Ampas tebu, Cendawan, *Saccharum officinarum* L.

ANALYSIS OF PROXIMATE, MINERALS, HEAVY METALS, AND ANTIOXIDANT ACTIVITY OF *Auricularia auricula-judae* CULTIVATED ON SUGARCANE BAGASSE (*Saccharum officinarum* L.)

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ABSTRACT

Auricularia auricula-judae is a mushroom that contains the macronutrients protein, fat, carbohydrates, Ca, K, P, Na and Fe. This content is influenced by the substrate for cultivation. One alternative medium for the growth of *A. auricula-judae* is sugarcane bagasse waste which contains 40% cellulose, 33% hemicellulose and 25% lignin. This research was conducted to study the effect of sugarcane bagasse waste as a cultivation medium and to study the proximate, mineral, heavy metal and antioxidant content of *A. auricula-judae*. The *A. auricula-judae* strain was inoculated on bagasse waste and sawdust as a control with an incubation period of 7, 10, and 14 days. Then, proximate analysis was carried out (moisture content, ash content, total fat, total protein and total carbohydrates), heavy metals (Pb, Cd and Cu) and minerals (Fe) using the Atomic Absorption Spectrophotometry method, total phenolic content using the Folin-Ciocalteu method, and antioxidant activity of the DPPH method. The results showed that the biomass of *A. auricula-judae* mycelium in bagasse waste for 14 days was 23.28 g, while the control was 13.80 g. Proximate analysis showed that the water content of *A. auricula-judae* mycelium in sugarcane bagasse waste was (5.10%) significantly decreased compared to the control (28.66%), while the ash content (25.88%), total fat (4.35%) %), total protein (11.98%), and total carbohydrates (52.71%) experienced a significant increase compared to controls. The mineral content Fe increased (337.03 mg/100 g) compared to the control, while the heavy metal content Pb (0.05 mg/100g), Cd (0.05 (mg/100g), and Cu (2.08) decreased on the last day of incubation. The highest total phenolics were found in the 10-day cultivation treatment (4.738 mg/mL), with the highest antioxidant activity in the 7-day treatment (IC_{50}= 8.28 mg/mL). increases biomass, proximates, minerals, and antioxidants in *A. auricula-judae* and can reduce heavy metal content.

Keywords: *Auricularia auricula-judae*, Mushroom, *Saccharum officinarum* L., Sugarcane bagasse.