ANTIOXIDANT AND ANTIMICROBIAL PROPERTIES OF TWO LOCAL EDIBLE MUSHROOMS

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Noor Fariza Mohammad Fauzi

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ABSTRACT

ANTIOXIDANT AND ANTIMICROBIAL PROPERTIES OF TWO LOCAL EDIBLE MUSHROOMS

Antioxidant and antimicrobial activities of *Pleurotus ostreatus* and *Auricularia polytricha* extracts obtained with ethanol were investigated in this study. The study was aimed at determining the total phenolic content (TPC) of *P. ostreatus* and *A. polytricha*, the antioxidant activity (DPPH free radical-scavenging and FRAP – ferric reducing antioxidant power) and the antimicrobial activity by disc inhibition method. The TPC measured in μg GAE/mg extract observed in *P. ostreatus* and *A. polytricha* were 28.58 ± 0.77 and 31.417 ± 0.75 respectively. Their antioxidant activities were low compared to standards BHA/BHT and ascorbic acid. *P. ostreatus* showed the stronger radical scavenging activity pattern. The reducing power of *P. ostreatus* was also higher than that of *A. polytricha.* Positive correlations were found between total phenolic content in the mushroom extracts and their antioxidant activities. Edible mushrooms may have potential as natural antioxidants. Both mushroom species showed moderate antibacterial activity against both Gram-negative and Gram-positive bacteria tested. The crude extract exhibited mild anticandidal activity on *Candida albicans.* However, *Aspergillus niger* has high resistance against both mushrooms species since no inhibition occurred. As conclusion, *P. ostreatus* showed higher antioxidant activity compared to *A. polytricha.* Meanwhile, *A. polytricha* showed better antimicrobial activity than *P. ostreatus*. From this study, both mushrooms species exhibit the antioxidant and antimicrobial properties, so the extracts could be suitable as antimicrobial and antioxidative agents in the food industry.