

Antioxidant properties and antimicrobial activity in the extracts of two edible mushroom, *Pleurotus sajor caju* and *Schizophyllum commune*

ABSTRACT

Extracts of two edible mushrooms, *Pleurotus sajor-caju* (commercial) and *Schizophyllum commune* (wild) were used to compare the antioxidant and antimicrobial properties. Aqueous and three types of organic solvents, like 50% of ethanol, methanol and acetone extracts were used in trial. DPPH scavenging activity in *P. sajor-caju* extract was determined in the range of 53.13% to 85.08%, whereas extracts of *S. commune* were observed in the range of 54.11% to 97.19% at a concentration of 5 mg/ml. The highest DPPH scavenging activity of 97.19% was observed in ethanol extract of *S. commune* (97.19%), higher than butyl hydroxytoluene (BHT). Half effective concentration (EC₅₀) in extracts of *P. sajor-caju* was found in the range of 1.47 to 4.23 mg/ml and that of *S. commune* in the range of 1.52 to 4.52 mg/ml. The reducing power of *P. sajor caju* aqueous concentration extract was found to be the closest of 3.353 (700 nm) that of antioxidant activity to BHT (3.445) at 2 mg/ml concentration. The best reducing power EC₅₀ was obtained in *P. sajor caju* aqueous extract (0.09 mg/ml), but in *S. commune* with acetone extract (0.22 mg/ml). Minimum inhibition concentration (MIC) was compared in extracts of mushrooms in various *Vibrio* species. All extracts were able to inhibit *V. harveyi* growth with MIC of lower than 1.25 mg/ml. In aqueous and methanol extracts of current study showed that bacteria inhibition activity occurred at the concentration of <1.25 mg/ml to 10 mg/ml. Aqueous extract of *P. sajor-caju* was able to act as reducing agent as functional as the commercial antioxidant agent, BHT. Crude extracts of *P. sajor-caju* and *S. commune* were observed to contain antibacterial potential against these mentioned *Vibrio* bacteria.