

**EVALUATION OF ANTIOXIDANT ACTIVITIES
OF *HYGROCYBE CONICA*, *LENTINUS CILIATUS*,
AND *PLEUROTUS OSTREATUS*
(CULTIVATED MUSHROOM)**

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ABSTRACT

This study was carried out to investigate the effect of extraction conditions (solvent type, concentration, time and temperature) on the yields of phenolic substances and antioxidant capacity of extracts from wild mushrooms, i.e., *Hygrocybe conica*, *Lentinus ciliatus*, and cultivated mushroom, *Pleurotus ostreatus*. Several antioxidant-related phytochemical composition extractions, namely, total phenolic content (TPC), total flavonoids content (TFC), and condensed tannins content (CTC), were investigated. In addition, antioxidant activities were tested using 2,2-diphenyl-1-picrylhydrazyl (DPPH) and 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulphonic acid) (ABTS) free radical scavenging, ferric-reducing antioxidant power (FRAP), and β -carotene bleaching (BCB) assay. Water was used as solvent for extraction of all samples. *Hygrocybe conica* exhibited the most potent activity at 240 minutes extraction duration, and at 60°C to yield 442.37 ± 1.38 mg GAE/100g dried sample of TPC. *Lentinus ciliatus* yields the highest phenolic antioxidants extract at duration of 150 minutes, and 50°C to yield 67.50 ± 1.31 mg GAE/100 g dried sample of TPC. *Pleurotus ostreatus* extract was most potent at extraction duration of 330 minutes, and at 50°C to give 798.55 ± 4.76 mg GAE/100 g dried sample of TPC. Although, *Pleurotus ostreatus* yields one of the highest TPC value, it did not show relatively high antioxidant activities as compared to the other two mushroom species. The antioxidants activity of *Hygrocybe conica* was relatively more effective in DPPH, FRAP, and β -carotene bleaching assay but not in ABTS assay as compared to the other two samples. Naturally occurring antioxidants like condensed tannins, and flavonoid were also found in all the mushrooms. The present study suggests that the cultivated mushroom water extracts could be a source of food which is rich in natural antioxidants, and could be applied as food supplement of pharmaceutical agent. The two wild mushrooms showed comparable results to that of the cultivated mushroom, and hence, they could be applied in the same way if cultivated in a large scale. The study is considered to be relevant to both food and pharmaceutical industries.

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