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# Anti-oxidant activity, total phenol and flavonoid content of selected macrofungi from the dry zone of Sri Lanka

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Macrofungi are an immensely rich resource of natural antioxidants and a spectrum of active metabolites including phenols and flavonoids. The objectives of this study were to evaluate the antioxidant activity of eight macrofungi species obtained from the dry zone of Sri Lanka and determination of total phenol and flavonoid content. Samples were collected from Dambulla. Air-dried powder of each specimen (10 g) was subjected to sonication extraction with 150 ml of methanol, methanol: dichloromethane (1:1) mixture and dichloromethane respectively. Crude extracts were obtained by flash concentrating the total filtrate using a rotary evaporator. Free radical scavenging activity of methanol extracts were assayed by 1, 1-Diphenyl-2-Picrylhydrazyl (DPPH) scavenging method. Ascorbic acid was used as the standard antioxidant.

The effective concentration of sample required to scavenge DPPH radical by 50% ($EC_{50}$) was obtained by linear regression analysis of dose response curve. Total phenol and flavonoid content of the methanol extracts were determined by the Folin - Ciocalteau method and aluminum chloride colorimetric method respectively. Antioxidant activity is inversely related to $EC_{50}$ values of the species. Among the analyzed specimens, all species showed antioxidant activity. *Phylloporia ribis* and *Phellinus sp.* showed the most potent radical scavenging activities ($EC_{50}$ values of 3.6 and 7.9 µg/ml respectively) compared to ascorbic acid ($EC_{50}$ value of 5 µg/ml) implying their strong antioxidant activity. Inonotus sp. showed an $EC_{50}$ of 114 µg/ml. Other species were found to exhibit lower radical scavenging capacities showing $EC_{50}$ values in the range of 500-1200 µg/ml. $EC_{50}$ values of the species studied were inversely related with their total phenol and flavonoid contents.

Keywords: Macrofungi, antioxidant activity, $EC_{50,}$ phenol content, flavonoid content

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