EVALUATION OF ANTIOXIDANT ACTIVITY OF *PLEUROTUS OSTREATUS* (CULTIVATED MUSHROOM)

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ABSTRACT

This study was carried out to investigate effect of extraction solvent on the yield of phenoilic substances and antixiant capacity of cultivated mushroom (*Pleurotus ostreatus*) extract. In this study, several antioxidant compounds composition namely total phenolic content (TPC), total flavonoids content (TFC), and condensed tannins content (CTC) were investigated. In addition, antioxidant activities such as 2, 2-Diphenyl-1-picrylhydrazyl (DPPH) assay, 2-Azino-bis-(3-ethylbenzothiazoline-6-sulfonic acid) ($ABTS^{+}$) assay, ferric reducing antioxidant power (FRAP) assay and β-carotene bleaching assay were evaluated. Two types of solvents were used include [water (100%)] and [water/acetic acid (99.5:0.5, v/v)] at extraction temperature of 55°C for 330 minutes. As TPC exhibited the highest antioxidant content among all the antioxidant compound assays, it was chosen as indicator for evaluating correlation between TPC and antioxidant capacities. The results show that pure water extract significantly ($p<0.05$) higher than water/acetic acid extract in all antioxidant compounds and antioxidant capacity assays. Positive correlation was observed between phenolic compositions and antioxidant capacity where FRAP show the significant linear correlation ($r = 0.915$, $P<0.05$). The antioxidant activities of *Pleurotus ostreatus* were compared with synthetic antioxidant BHA, ascorbic acid and trolox. Results indicate that water extract exhibit a considerable amount of antioxidant activity compared to synthetic antioxidants which water extract showed highest FRAP value. However, water/acetic acid extract exhibit a little amount of antioxidant activity compared to others.