

**Antioxidant properties of selected *Etlingera* and *Zingiber* species
(Zingiberaceae) from Borneo island**

Abstract

In this study, total phenolic and flavonoid contents as well as antioxidant properties of methanolic extracts of rhizomes and stems of four Zingiberaceae (*Etlingera belalongensis*, *Etlingera uelutina*, *Zingiber uinosum* and *Zingiber pseudopungens*) were investigated. Evaluation of antioxidant activity was conducted using 1,1-diphenyl-2-picrylhydrazyl free radical-scavenging (DPPH) assay, 2,2'-azinobis-3-ethylbenzothioazaline-6-sulphonate radical scavenging (ABTS) assay and Ferric-Reducing Antioxidant Power (FRAP). The results showed the total phenolic and total flavonoid contents were in the range of 5.3-41.7 mg gallic acid equivalent/g and 1.09-5.86 mg catechin equivalent/g of dry sample, respectively. The antioxidant activities of the extracts as assessed by using DPPH and FRAP assays were strongly correlated with all phytochemical tested ($p < 0.05$). As a conclusion, selected tropical gingers found in Sabah investigated in this study can be developed as natural antioxidant agents.