

**PHYTOCHEMICAL CONSTITUENTS, VITAMIN C
CONTENT, TOTAL FLAVONOID CONTENT
AND ANTIOXIDANT ACTIVITIES OF
Etlingera elatior (JACK) R. M. SMITH**

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ABSTRACT

PHYTOCHEMICAL CONSTITUENTS, VITAMIN C CONTENT, TOTAL FLAVONOID CONTENT AND ANTIOXIDANT ACTIVITIES OF *Etlingera elatior* (JACK) R. M. SMITH

Methanolic extracts from fresh and dried fruits and inflorescences of *Etlingera elatior* (Jack) R. M. Smith from Kampung Lipasu Baru, Ranau were screened for phytochemical constituents, vitamin C content by iodometric titration method, total flavonoid content (TFC), thin-layer chromatography (TLC) and antioxidant activity (AOA) using 1,1-diphenyl-2-picrylhydrazyl (DPPH). Phytochemical screening of the fresh fruit and inflorescence methanolic extract of *E. elatior* revealed the presence of flavonoid, phenolic, tannins, and terpenoids but no alkaloid and saponins. Whereas dried fruit and inflorescence contain alkaloid, flavonoid, phenolic, tannins and terpenoids but not saponins. The vitamin C content of the fresh fruit and inflorescence were 292.50 mg/100g and 337.95 mg/100g respectively using ascorbic acid as the reference. Meanwhile, the Total Flavonoid Content for fresh and dried inflorescence were 249.93 mg/ml and 243.44 mg/ml respectively while fresh and dried fruit were 102.13 mg/ml and 33.11 mg/ml using rutin as reference. The presence of flavonoid from the qualitative analysis of phytochemical screening is fortified by qualitative analysis which is thin-layer chromatography (TLC) where three suspected flavonoid compounds were detected. The antioxidant properties in both fresh and dried fruit and inflorescence methanolic extract were evaluated through DPPH radical scavenging activity. This study found significantly high amount of antioxidant where the fresh fruit and inflorescence were 95.30% and 91.35% of inhibition. Meanwhile, dried fruit and inflorescence were 91.35% and 91.97% of inhibition respectively. The results obtained suggest the use of fruit and inflorescence of *Etlingera elatior* as source of natural antioxidants for food and nutraceutical applications.