

Chemical composition and antioxidant activity of Torch Ginger (*Etilingera elatior*) flower extract

ABSTRACT

Plant extracts with various bioactive compounds have gained considerable attention especially when used as functional ingredient. The aims of the present study were to profile the bioactive and volatile compounds in different maturity stages of torch ginger (*Etilingera elatior*) and also to study the effect of drying methods on bioactive compounds of torch ginger (*Etilingera elatior*) extract. The bioactive compounds in unopened and opened torch ginger were identified using Gas Chromatography-Mass spectrometry (GCMS). Unopened torch ginger flower was sun-dried with mid-day temperature ranged from 35–40°C for almost 27 hours, overnight oven drying at 40°C and the torch ginger also be lyophilized for 48 hours in a vacuum flask at 0.125 mbar and -50°C in a freeze-dryer till moisture content reached 10±2% in weight. The total phenols, total flavonoids and antioxidant activity of unopened torch ginger extract were determined by using UV-vis spectrophotometer. The most abundant compounds in torch ginger included α -pinene, decanal, and 1-dodecanol. Freeze-dried unopened torch ginger flower resulted the highest level of total phenols content (485.50±3.24mg GAE/100g), total flavonoids (61.26±14.87 mg GAE/100g), ferric reducing assay power (1943.50±84.15mg GAE/100g) and scavenging activity (89.24±1.24%) respectively. The extract from torch ginger flower could be potentially used as a new source of natural antioxidant in functional ingredient.

Keyword: *Etilingera elatior* inflorescence extract; Drying methods; Total phenolic content; Total flavonoid content; Antioxidant activity