

## ABSTRACT

In this study, the antioxidant activity and total phenolic content of *Thunbergia laurifolia* Lindl. or Rang Chuet (RC) extracts from leaf, stem and rhizome were evaluated by using ferric reducing antioxidant power assay (FRAP) and the Folin Ciocalteu method for total phenolic compounds (TPC). The extracts were prepared by infusion using different amount of plant powder (2.5, 5.0 and 7.5 g) at different concentrations of ethanol as 0, 25, 50 and 75% and extracted for 24, 48 and 72 h. The crude extract of 7.5 g leaf powder extracted for 72 h using water as the extraction solvent showed the highest antioxidant properties and total phenolic content. This extraction condition produced a FRAP content of 2.622 (mmol Fe<sup>2+</sup>/g) that was significantly different from that of the stem and rhizome and the highest TPC content of 877.36 (mg GAE/g). The crude extract from the leaf was then subsequently encapsulated by using  $\beta$ -Cyclodextrin and maltodextrin 20DE as coating materials by using freeze drying method. The encapsulated powder was investigated for its antioxidant activity. The highest encapsulation efficiency (EE) was obtained when only Maltodextrin 20DE was used. The storage stability of encapsulated *T. laurifolia* leaf crude extract was then studied by storing the encapsulated powder at 35, 45 and 55°C for 5 weeks. The storage temperature had no effect on the stability of the encapsulated powder when TPC was used as the criteria unlike that of FRAP which was inconsistent during storage.

**Keywords:** *Thunbergia laurifolia* Lindl, Antioxidant Activity,  $\beta$ -Cyclodextrin, Maltodextrin, Encapsulation.