

Antioxidant activities and phenolics content of eight species of seaweeds from north Borneo.

ABSTRACT

The antioxidant activity of eight edible species of Malaysian North Borneo seaweeds obtained from Sabah waters (Kudat, Tanjung Aru and Semporna) consisting of three red seaweeds (*Eucheuma cottonii*, *E. spinosum* and *Halymenia durvillaei*), two green seaweeds (*Caulerpa lentillifera* and *C. racemosa*) and three brown seaweeds (*Dictyota dichotoma*, *Sargassum polycystum* and *Padina* sp.) were determined. Methanol and diethyl ether were used as extraction solvent. The antioxidant activities were determined by two methods, TEAC (trolox equivalent antioxidant capacity) and FRAP (ferric reducing antioxidant power) assays. The total phenolic content of the extract was determined according to the Folin–Ciocalteu method and results were expressed as phloroglucinol equivalents. The methanolic extracts of green seaweeds, *C. lentillifera* and *C. racemosa*, and the brown seaweed, *S. polycystum* showed better radical-scavenging and reducing power ability, and higher phenolic content than the other seaweeds. The TEAC and FRAP assays showed positive and significantly high correlation ($R^2=0.89$). There was a strong correlation ($R^2=0.96$) between the reducing power and the total phenolic content of the seaweeds methanolic dry extracts. These seaweeds could be potential rich sources of natural antioxidants.

Keyword: Seaweeds, Antioxidant activity, TEAC, FRAP, Phenolics, North Borneo waters