

## **Antioxidant compounds, antioxidant activities, and mineral contents among underutilized vegetables**

### **ABSTRACT**

Natural sources may be a method to introduce antioxidants in the human diet. *Portulaca oleracea* L., *Peperomia pellucida* L., and *Trianthema portulacastrum* L are underutilized leafy vegetables. The plants may be sources for total phenolic (TPC), total flavonoid (TFC), total carotenoid (TCC), and  $\beta$ -carotene but information is lacking. Antioxidant activity, ferric reducing antioxidant power (FRAP), and 1,1-diphenyl-2-picrylhydrazyl (DPPH), and macro- and microminerals contents were investigated in *P. oleracea*, *P. pellucida* and *T. portulacastrum*. *Trianthema portulacastrum* had the highest TPC ( $1.34 \pm 0.13 \text{ mg}\cdot\text{g}^{-1}$ ), TFC ( $0.58 \pm 0.08 \text{ mg}\cdot\text{g}^{-1}$ ), TCC ( $0.14 \pm 0.01 \text{ mg}\cdot\text{g}^{-1}$ ), and  $\beta$ -carotene ( $0.94 \pm 0.18 \text{ mg}\cdot\text{g}^{-1}$ ) values. The antioxidant activity and FRAP assay were highest in *P. oleracea* ( $0.91 \pm 0.09 \text{ mg}\cdot\text{g}^{-1}$ ); the DPPH assay for *P. pellucida* was highest ( $\text{IC}_{50} = 7 \mu\text{g}\cdot\text{mL}^{-1}$ ). The amount of K was highest in *P. oleracea* ( $55.470 \pm 0.481 \text{ g}\cdot\text{kg}^{-1}$ ). The amount of Mn was highest in *P. pellucida* ( $0.251 \pm 0.002 \text{ g}\cdot\text{kg}^{-1}$ ). The individual underutilized vegetables may be able to supply some antioxidant compounds and mineral contents for the human diet.