

Comparative evaluation of nutritional compositions, antioxidant capacities, and phenolic compounds of red and green sessile joyweed (*Alternanthera sessilis*)

ABSTRACT

The nutritional compositions, antioxidant capacities, and phenolic compounds of *Alternanthera sessilis* red (ASR) and green (ASG) in water and ethanolic extracts were compared. Nutritional compositions were determined according to an AOAC method. Total phenolic content was evaluated by a colorimetric reduction using the FolinóCiocalteu method. High-performance liquid chromatography combined with diode array and electrospray ionization mass spectrometric detection was used to the study phenolic compounds. Antioxidant capacities were evaluated by five different methods. The results showed that ASR contained significantly ($p < 0.05$) higher protein, fat, carbohydrate and mineral contents compared to ASG. The ethanolic extracts of both ASR and ASG presented significantly greater antioxidant capacity than the water extracts at $p < 0.05$. The total phenolic content exhibited a positive correlation with the antioxidant capacities, which could be one of the critical contributors to the antioxidant activity of ASR and ASG.

Keyword: Antioxidant capacity; *Alternanthera sessilis*; Phenolic compounds; Nutritional composition