

Abstract

Plants are a major source of natural antioxidants. Antioxidants play an important role in treating cardiovascular and cancerous diseases because they reduce the effects of free radicals and oxidative stress in the body. Since secondary metabolites of medicinal plants are different under various climatic conditions, it is essential to recognize the physiological function and medicinal properties of plants in a regionalized manner. *Chenopodium* is a herbal medicine from the family *Chenopodiaceae* and is effective in the treatment of eye, liver and cardiovascular disorders. In this research, three species of *chenopodium* currently delentified as *Chenopodium album*, *Oxibasis chenopodioides*, *Oxibasis rubra* from Sistan region were collected and after Identification, the amount of some secondary metabolites and their organs antioxidant activity (root, stem, leaf, seed) were measured. Antioxidant activity was determined by degradation of free radicals with 2, 2-diphenyl-1-picryl hydrazil (DPPH), total phenol compounds by folin-ciocalteu and flavonoid compounds were determined using aluminum chloride colorimetric method. Also, the amount Photosynthetic pigments, proline, anthocyanin and carbohydrate were measured. Data analysis was performed using SPSS software and Single strain analysis of variance. In general, the results showed that the highest amount of phenol was related to *Oxibasis rubra* leaf, The highest amount of flavonoids belongs to the leaf of *Oxibasis chenopodioides*, The highest antioxidant activity was related to *Chenopodium album* leaf, The highest amount of proline is related to leaf of *Oxibasis rubra*, The highest carbohydrate content is related to seed of *Oxibasis rubra*, The highest levels of chlorophyll a and carotenoids associated with *Chenopodium album* and The highest amount of chlorophyll b was related to *Oxibasis rubra*. The results also showed that there is no anthocyanin in this plant.

Keywords: *Chenopodium*, Antioxidant Activity, Photosynthetic Pigments



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