

Abstract

Plants are rich sources of phenolic and flavonoid compounds which are important natural antioxidants. Antioxidant compounds have ability to destroy free radicals and thereby protect the body. *Tamarix*, a medicinal plant, belongs to the family Tamaricaceae which contains bioactive compounds with antioxidant activity. The aim of this study was to evaluate the phenolic, flavonoids and antioxidant activity of different organs (leaves, flowers, stems) of 2 species of *Tamarix* (*T. kermanensis*, *T. aphylla*). The total amount of phenol and flavonoids was measured by Folin- Ciocalteu and Aluminum Chloride methods, respectively. Anthocyanin content evaluated by Wagner method. The essential oil of *T. kermanensis* flower was analyzed by GC / MS. In addition, the antioxidant activity was studied by DPPH radical-scavenging activity and ferric reducing-antioxidant power (FRAP) methods. Overall, the results showed that phenol and flavonoid content in *T. kermanensis* had the highest amount. The highest amount of anthocyanin was observed in stem *T. kermanensis*. GC / MS analysis showed 25 compounds in flower of *T. kermanensis*. The highest amount of essential oil was Phenol, 2-methoxy (19.67%), Tetradecane (18.51%) and Hexadecane (15.99%) respectively and in *T. aphylla* flower were identified 4 compounds, Phenol, 2-methoxy (72.23%) was the highest percentage. *T. kermanensis* flower showed high antioxidant capacity than other organs in both DPPH and FRAP methods. Therefore, the use of *T. kermanensis* flower as better natural antioxidant is recommended for use in the field of pharmacy and food industry.

Keywords: Secondary metabolites, Antioxidant activity, *Tamarix*



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**Comparison of some secondary metabolites and antioxidant activity
of different organs of 2 species of (*Tamarix kermanensis* BAUM,
Tamarix aphylla (L.) KARS)**

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