Screening of Total Phenolic, Flavonoid and Flavonol content of Capparis Spinosa

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Introduction:

Capparis spinose L. belongs to the Capparidaceae family. Caper has been reported to have many pharmacological activities such as cytotoxic, anti-diabetic, anti-inflammatory, antimutagenic and antioxidant effects. It has very active chemical groups such as alkaloids, phenolic, flavonoids, tannins and many other minerals. Phenol compounds in plants have antioxidant activity and ability to scavenge free radicals and have beneficial effects on human health. This experiment was conducted in order to compare the phenolic, flavonoid and flavonol content of different parts (leaf, bud and root) of Capparis spinosa.

Methods:

Different parts of plant (leaf, bud and root) were collected from the lands in the moghan region of the Ardabil province, Iran, during the June of 2018. The collected plants were cleaned, dried under shade at room temperature and powdered and soaked in ethanol/ methanol solution in a large container for 3 days. The extract was filtered and the filtrate was dried by using a rotary evaporator.

The amount of total phenolic content in the extracts was determined with the Folin- Ciocalteu reagent and Gallic acid was used as a standard. The amount of flavonoid in the extracts was determined by a State Pharmacopeia of USSR method and rutin was used as a reference compound. Yermakov, Arasimov, & Yarosh method was used for determination of flavonol contents and rutin was used as a standard.

Results:

Comparing different components (phenols, flavonoids and flavonols) in the plant extract, phenolic content was more than the other component and the leaf extract had the most phenolic (534.55 mg/g GAE) content. The amount of all components in the root was very low and can be ignored.

Conclusions:

The present study indicated that leaf extract of Capparis spinosa has the greatest antioxidant activity and can be used to explore new medicines in treatment of diseases manifested by oxidative stress and inflammation.

Keywords: Capparis Spinosa L, Extract, phenols