Research Journal of Pharmacognosy (RJP) 4(Supplement), 2017: 83

First Iranian Pharmacognosy Congress; Nov 29-30, 2017

Abstract

Antioxidant activity, phenolics content and total flavonoids of caper fruit (*Caparis spinosa*) at different maturity stages

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Background and objectives: *Capparis spinosa* is a perennial herb belonging to the Capparidaceae family that is mainly distributed in arid and semi-arid regions of the tropical and subtropical world. The plant is a potential source of valuable nutrients that is valued for human food. The fruit of this plant, being a rich source of high-value components, is usually pickled and added to salads, sauces and jams. Different organs have different amounts of biochemical compounds. Maturity stages have important effects on fruit quality. In order to determine the best time for obtaining the maximum secondary metabolites (phenolics content, antioxidant activity and total flavonoids) from caper fruits, three stages of maturity (unripe, ripe and over ripe fruits) were studied. **Methods:** Measured factors were antioxidant activity (DPPH radical scavenging property) total flavonoids, flavones and flavonols content, total phenolic compounds (Folin reagent by calorimetric method), tannin content and carbohydrate content. **Results:** The results showed the significant effect of fruit maturity on most measured traits. Maturity decreased flavones and flavonoles (0.72, 0.34 and 0.22 mg quercetin/g respectively) and total flavonoids content (7.20, 3.61 and 3.51 mg quercetin/g respectively) while total phenolic and carbohydrate has increased during ripening. Antioxidant activity had not significant changed during ripening. **Conclusion:** Unripe fruits were the best samples for achieving the maximum flavonoids content that were assumed as major compound of Caper fruit.

Keywords: *Capparis spinosa*, medicinal plants, phenolic compounds, ripening

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