Extended Abstract

Antioxidant Activity and Phytochemical Compounds of *Capsicum annuum* L. [†]

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The benefits of *Capsicum annuum* L. are important for human health with its anti-inflammatory and analgesic properties in the case of stomach and back pain, muscle spasms, headaches, skin aging, peptic ulcers [1]. The aim of the present study was to characterize and investigate the antioxidant activity and phytochemical compounds [2] of three types (red, yellow, green) of hot pepper (*Capsicum annuum* L.) samples, using two methods of extract production (maceration and ultrasound).

In this research, we presented the results in the field of antioxidant activity and phytochemical analysis, using extracts obtained from three types of pepper native plants (red, yellow and green) extracted using two methods (maceration-M and ultrasound-U) in ethanol (EtOH) or methanol (MeOH) solvents. The sample extracts were studied using UV-VIS and TLC techniques. The antioxidant property was determined using DPPH method [3], Figure 1.

Figure 1. UV-VIS spectrum of *Capsicum annuum* L. and graph of the antioxidant activities (AA %) values for hot pepper samples.

For the maceration method in EtOH, the samples codifications are: GM—yellow hot pepper maceration in EtOH, VM—maceration in EtOH, RM—red hot pepper maceration in EtOH, RMM—red hot pepper maceration in MeOH. Ultrasound method: GU—ultrasound yellow hot pepper in EtOH, VU—ultrasound green hot pepper in EtOH, RU—ultrasound red hot pepper in EtOH, RUM—ultrasound red hot pepper in MeOH.

Red, yellow and green pepper extracts have a very high antioxidant activity (AA %), which denotes the benefits of the compounds existing in these vegetables. The ultrasound method revealed higher values compared to maceration. The color of the peppers is due to the presence of carotenoids, as demonstrated by the UV-VIS spectrum measurements. In the case of the yellow pepper extract (GM), the carotenoids are found in the range 325–425 nm. In red peppers (RM), β -carotenoid peak is found between 445–478 nm, which is more pronounced using ultrasound method. Hot pepper samples extracted in ethanol, using maceration method (RM, GM, VM), present higher values of flavonoids (TFC), compared to the samples extracted in the same solvent (ethanol), but using the ultrasound method (RU, GU, VU). In the case of terpenoids (TTpC), it was observed that the extracts of green pepper (VM and VU), obtained by both methods (M and U), have the highest values.

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