QUANTITATIVE ASSESSMENT OF PHENOLIC COMPOUNDS, SUGAR AND THE ANTIOXIDANT ACTIVITY OF ZIZIIPHUS JUJUBAS GROWN IN TURKEY

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Abstract: In this study, we compared the polysaccharides and antioxidative effects of jujuba (Ziziphus jujuba) from five different production areas in Turkey. The analyzed components included moisture content, pH, titratable acidity (TA), total sugars, total phenolic content, pure phenolic compounds and mineral content. Fourteen phenolic compounds have been recognized as gallic acid, catechin, epicatechin, chlorogenic acid, caffeic acid, coumaric acid, para-coumaric acid, hesperidin, naringin, rutin, ellagic acid, quercetin, naringenin and vanillin by means of HPLC. Results demonstrated that total phenolic contents ranged from 652 to 1348 mg GAE/100 g fruit weight. Among the jujube selections, considerable differences in phenolic materials were found. Catechin levels ranged from 5.95 to 101 mg/100 g, and ellagic acid levels ranged from 5.87 to 26.3 mg/100 g for jujube fruits. Potassium, phosphorus, calcium and magnesium were the major mineral constituents in jujubes. The antioxidative capacity of the jujube extracts, evaluated with the reducing power, the 2,2-diphenyl-1-picrylhydrazyl (DPPH•), and the 2,2-azinobis (3-ethylbenzothiazoline-6-sulfonicacid) (ABTS•+) scavenging methods. Antioxidant capacities of jujubes were found to correlate with total phenolic content.

Keywords: Ziziphus jujuba, bioactive compounds, phenolics, polysaccharide, antioxidant capacity

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