

Poster Presentation

Antioxidant Activity, Total Phenolic Content, and Total Flavonoids Content of Zizphus Spina-Christi Fruits and Leaves from Palestine

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Abstract

Different samples of fruits and leaves of Zizphus Spina-Christi (sidr in Arabic) were collected from different areas of West Bank (north, middle, and south) at different maturation stages of the year. The samples were dried at 30 °C, grinded with a blender, and the dried powder was extracted with three different solvents: water, ethanol, and 80% ethanol for one hour. The crude extracts were then analyzed for their total phenolic content (TPC), total flavonoid content (TFC), and antioxidant activity (AA) using standard assay methods (Folin-Ciocalteu method for TPC, colorimetric assay method for TFC, and ferric ion reducing antioxidant power (FRAP) for AA), and compared with vitamin C which is a known chemical antioxidant. Three samples of leaves and fruits of each treatment were independently analyzed in each sampling, and all of the determinations were carried out in triplicate. The results revealed that the maturation stage affected the composition of the leaves and fruits under investigation in terms of total phenolic, total flavonoid, and antioxidant activity. Additionally it was found that there is a significant difference in TPC, TFC, and AA of the leaves and fruit samples collected from north, middle, and south of the West Bank. Pearson correlation between TPC, TFC, and AA of samples collected from the three areas in the West Bank showed that antioxidant activity is significantly correlated with total phenolic content, and weakly correlated with total flavonoids. It was also found that no significant correlation existed between TPC and TFC in any sample under investigation.