

Fatty Acid Composition, Total Sugar Content and Anti-Diabetic Activity of Methanol and Water Extracts of Nine Different Fruit Tree Leaves Collected from Mediterranean Region of Turkey

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Abstract : In this research, we determined the total sugar content, fatty acid compositions and α -amylase and α -glucosidase inhibitory activity of methanolic and water extracts of nine different fruit tree leaves. α -amylase and α -glycosidase inhibitory activity were determined by using Caraway-Somogyi-iodine/potassium iodide (IKI) and 4-nitrophenyl- α -D-glucopyranoside (PNPG) as substrate, respectively. Total sugar content of the nine different fruit tree leaves varies from 281.02 mg GE/g (glucose equivalents) to 643.96 mg GE/g. Methanolic extract from avocado leaves had the strongest in α -amylase and α -glucosidase inhibitory activity, 69.21% and 96.26 %, respectively. Fatty acid composition of nine fruit tree leaves was characterized by GC (gas chromatography) and twenty-four components were identified. Among the tested fruit tree leaves, the main component was linolenic acid (49.09%). The level of essential fatty acids are over 50% in mulberry, grape and loquat leaves. PUFAs (polyunsaturated fatty acids) were major group of fatty acids present in oils of mulberry, fig, pomegranate, grape, and loquat leaves. Therefore, these oils can be considered as a good source of polyunsaturated fatty acids. Furthermore, avocado can be regarded as a new source for diabetic therapies.

Keywords : fatty acid compositions, total sugar contents, α -amylase, α -glucosidase, fruit tree leaves, Turkey

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