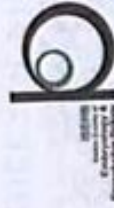


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Fatty Acid Composition of Seed Oils from some Wild *Salvia* Species Growing in Iran

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In the Flora of Iran, *Salvia* L. genus is represented by 58 species of which 17 species are endemic and grow widely in different regions of Iran. A very limited number of investigations for fatty acid patterns and contents of the seed oils have been reported in this genus. This study was carried out in order to evaluate the fatty acid composition of the oils obtained from the seeds of some wild *Salvia* species from Iran. Mature seed samples of six populations from five *Salvia* species (*S. multicaulis* Vahl, *S. reuterana* Boiss., *S. chloroleuca* Rech., *S. ceratophylla* L. and *S. atropatana* Bunge) were collected from their natural habitats. Seed oils were extracted using n-hexane as solvent in a Soxhlet apparatus. The fatty acid compositions were analyzed by gas chromatography (GC) and gas chromatography-mass spectrometry (GC-MS) as methyl ester derivatives after transmethylation reaction. The average of total oil ranged from 20.83% in *S. ceratophylla* to 33.86% in *S. multicaulis*. Major fatty acids were linoleic (C18:2n6) (19.48-59.24%), α -linolenic (C18:3n3) (2.36-47.53%), oleic (C18:1n9) (19.12-23.31%), palmitic (C16:0) (5.65-7.89%), and stearic acid (C18:0) (1.93-2.22%). Saturated fatty acids in total were observed in the lower levels (7.93-10.38%). Mono-unsaturated (19.36-24.23%) and poly-unsaturated fatty acids (PUFAs) (59.86-71.90%) varied substantially. Total percentages of unsaturated fatty acids accounted for 84.09% to 91.26% of the total fatty acids. There were significant differences between fatty acid profiles of samples based on n-3 (2.47-47.67%) and n-6 (19.78-59.49%) fatty acids concentrations. The parameters examined here may be useful as valuable biochemical markers for the discrimination of *Salvia* plants at intra and inter-specific levels. In general, investigated *Salvia* species could be evaluated as the alternative wild sources for the production of essential fatty acids including linoleic and α -linolenic acids as special dietetics and nutraceuticals.

Keywords: *Salvia* L., seed oil, fatty acids, linoleic acid, α -linolenic acid