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DETERMINATION OF ROSMARINIC ACID IN LEAVES OF SOME IRANIAN *SALVIA* SPECIES BY A RAPID SPECTROPHOTOMETRIC METHOD

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Rosmarinic acid is a biologically active phenolic compound, which commonly found in species of the Boraginaceae and Lamiaceae. The majority of the phenolic acids in *Salvia* species (Lamiaceae) are almost as caffeic acid derivatives, which occur predominantly in the dimer form of rosmarinic acid. Rosmarinic acid is the most abundant and powerful natural antioxidant in various important Lamiaceae species. The antioxidant activity of rosmarinic acid is stronger than that of vitamin E. Anti-inflammatory, antiviral, and antimicrobial properties of rosmarinic acid have also been reported. Rosmarinic acid prevents cells from damage caused by free radicals, thereby reduces the risk of cancer and atherosclerosis. A total of 58 *Salvia* taxa at the specific level were reported to be present in Iran. To the best of our knowledge, among Iranian native *Salvia* species, only *S.limbata* has been studied for the presence of rosmarinic. The objective of this paper was determination of rosmarinic acid content in the leaves of some populations of eight *Salvia* species from Iran by a novel spectrophotometric method. The dried and powdered leaves of *Salvia* species were separately extracted with methanol. Methanol extracts solutions of samples were freshly prepared in 96% EtOH prior to measurement. Ethanolic extract of each sample was added to zirconium (IV) oxide chloride solution. This method was based on the complexation of rosmarinic acid with Zr^{4+} ions, giving a maximum absorbance at 362 nm. The content of rosmarinic acid in the leaf extracts were calculated according to the equation that was obtained from the standard rosmarinic acid graph. Based on our results, three populations of *S. limbata* (23.12 ± 0.92 , 21.26 ± 0.2 and 18.76 ± 0.55 mg/g dry weight) had the highest contents of rosmarinic acid, followed by *S. nemorosa* (17.28 ± 0.58 mg/g dry weight) and *S.reuterana* (15.66 ± 0.14 mg/g dry weight), while *S. sclarea* (4.84 ± 0.28 mg/g dry weight) showed the lowest content. In conclusion, among the *Salvia* species studied in the present work, *S. Limbata*, *S. nemorosa* and *S.reuterana* with considerable contents (higher than *S. officinalis* with 13.42 ± 0.83 mg/g dry weight) of rosmarinic acid, appear to be potential new sources of this valuable phenolic compound.

References

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