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CHEMICAL COMPOSITION AND ANTIOXIDANT ACTIVITY OF *O. VULGARE* VAR. *VULGARE* AND VAR. *HERACLEOTICUM*

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Oregano (*Origanum vulgare*) is an aromatic plant from the Lamiaceae family. Due to its rich content of polyphenols, flavonoids and other important secondary metabolites, oregano have anti-inflammatory, antioxidant, and antimicrobial properties. This research was aimed to compare the chemical composition of *O. vulgare* var. *vulgare* and var. *heracleoticum* and their antioxidant activity. Investigated extracts were prepared by ethanol maceration. The total phenolic content was determined by the Folin-Ciocalteu method. The total amount of flavonoids was determined spectrophotometrically by analysing flavonoid complex formation with AlCl_3 . Chemical characterization was performed by high-performance liquid chromatography. The ability of the tested extract to neutralize 2,2-diphenyl-1-picrylhydrazyl (DPPH), hydroxyl ($\text{OH}\cdot$) and nitroso ($\text{NO}\cdot$) radicals was tested by the spectrophotometric methods. The total phenolic content was approximately equal in both, *O. vulgare* var. *vulgare* and var. *heracleoticum* (87.53 and 90.5 mg of the gallic acid equivalents/g dry extract, respectively). Also, the total amount of flavonoids was approximately equal in both, *O. vulgare* var. *vulgare* and var. *heracleoticum* (21.8 and 23.23 mg of the quercetin equivalents/g dry extract, respectively). Rosmarinic, ferulic and chlorogenic acids, and rutin were identified as dominant polyphenolic compounds. Moreover, antioxidant activity of both extracts was similar. Half-maximal inhibitory concentration (IC_{50}) for DPPH was 2.28 mg/mL for *O. vulgare* var. *vulgare* and 2.59 mg/mL for *O. vulgare* var. *heracleoticum*. The ability of the tested extract to neutralize $\text{NO}\cdot$ was similarly good for both extracts (IC_{50} = 17.71 and 20.53 mg/mL). The tested extracts showed weaker activity in neutralizing $\text{OH}\cdot$ (IC_{50} = 285.37 and 192.24 mg/mL). Due to the similarity in chemical composition and antioxidant activity both varieties can be used as medicinal herbal drugs.

Keywords: *O. vulgare* var. *Vulgare*, *O. vulgare* var. *Heracleoticum*, Chemical Composition, Antioxidant Activity.

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