

Proximate Composition of the Local Hemp Seed (Beldiya Ecotype), Fatty Acid Profile, and Oxidation Stability of Its Oil as a Local Product from Northern Morocco

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Abstract

The United Nations Organization, effectively recognizing its medicinal and nutritional value, recently reclassified *Cannabis sativa* in international agreements. Hempseeds, considered as a by-product by Cannabis growers, could be a good source of key nutrients such as long-chain fatty acids n-3 and essential amino acids with high bioavailability. The goal of this study was to find out the proximate composition, fatty acid profile, and health lipid indices of hempseed from a local ecotype called "Beldiya" in Morocco's northern region. Lipids were extracted from seeds according to the Bligh-Dyer method (cold method), then methylated and separated by gas chromatography. The results show that the studied hempseeds "Beldiya" has an oil content of $32.81 \pm 0.43\%$ with an oil oxidative stability index at 101 °C of 10.82 ± 0.47 hours. The average values of dry matter, ash, and protein content are $94.08 \pm 0.72\%$, $4.29 \pm 0.03\%$, and $24.84 \pm 0.9\%$ respectively. The fatty acid profile analysis shows that the oil of "Beldiya" hempseeds has a polyunsaturated fatty acid (PUFA)/saturated fatty acids and n-6/n-3 PUFA ratio of 5.13 ± 0.02 and 3.48 ± 0.02 , respectively. These findings demonstrate that hempseed's nutritional and balanced value as an edible fruit can contribute to a healthy lifestyle.

Keywords

Cannabis sativa L., Fatty Acids, Hempseed Oil, Oxidation Stability, Proximate Composition