

## Italian Hemp (*Cannabis sativa* L.) Seed Oil Nutrients: Fatty Acids and Antioxidant

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Industrial hemp is an ancient multi-purpose culture. Its reborn involved consumers, academia and industry attention, due to important sustainability features. It belongs to the *Cannabis Sativa* L. species known for its psychoactive effects. Some varieties, with tetra-hydro-cannabinol (THC) content < 0.2%, are allowed for cultivation (EC Reg. No 1673/2000; EC Reg. No 73/2009). From hemp cultivation main products obtainable are: fiber (from the stem) and seeds (from the inflorescences). The seeds are characterized by a good content of macro and micro nutrients, leading to consider this product as an important nutritional and nutraceutical resource. By pressing the seeds it's possible to obtain an oil with a characteristic fatty acids composition. A 3:1 ratio in  $\omega$ 3- $\omega$ 6 fatty acids is considered ideal for human needs, in accordance with the recommendations of the European Food Safety Agency EFSA. Hempseed oil contains linoleic and linolenic acid, otherwise of other oils. Several studies reported health benefits associated with consumption of these fatty acids in cardiovascular diseases, rheumatoid arthritis and types of dermatitis. Hemp seed oil shows excellent oxidative stability, suggesting the presence of phenolic and antioxidant compounds. Natural antioxidants may play a role in reducing the risk of chronic diseases and in containing the oxidative damage to cellular components. In this study different oils are analyzed. Sampling was carried out by considering Italian hempseed oil in different processing of seeds and in different years of cultivation. The determination of the fatty acid profile was carried out with HPLC-UV, after a pre-column derivatization. The antioxidant capacity was determined by ABTS and DPPH assays. The total phenolic content, indeed, was determined with Folin-Ciocalteu reagents. Moreover, the multivariate statistical (chemometric) treatment of the data has allowed to characterize the oils on the basis of the original cultivar and the place of cultivation.

### Biography:

Salvatore Ciano pursuing PhD in Commodity Sciences at the Management Department of Sapienza University of Rome. In 2015, he obtained a bachelor's degree in Agro-Industrial Biotechnology and in 2017 a master's degree in Science and Technology for the quality and enhancement of agri-food products at Sapienza University of Rome. He works at the commodity laboratory and collaborates with the department's research team, focused on the characterization of food commodities, their production process and their environmental, economic and social sustainability.