# SUSTAINABLE RECOVERY OF VALUABLE COMPOUNDS FROM WILD MUSHROOMS

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## Abstract

Serbia, along with the broader Balkan region, is known for its abundance of various mushroom species. Some of these mushrooms are collected and used for food but remain relatively under-researched in terms of their nutritional characteristics and potential pharmacologically valuable compounds. The objective of this work was to develop a sustainable process for the extraction of non-polar valuable compounds from wild edible mushrooms using for the first time supercritical carbon-dioxide extraction. The extractions were performed at the pressure of 30 MPa, temperature of 40 °C and and extraction time of 4 h. Five selected types of wild edible mushrooms *Lycoperdon saccatum, Pleurotus ostreatus, Craterellus cornucopioides, Russula cyanoxantha* and *Cantharellus cibariu* were analysed. The results showed that the highest EY was measured in *C. cornucopioides* (3.32%), followed by *C. cibariu* (2.18%) and *R. cyanoxantha* (2.06%). The chemical characterization of these extracts was performed by GC/MS. The main compounds detected were free carboxylic acids, as well as some aldehydes, alcohols, steroids, and aromatic compounds. After transesterification, methyl esters of carboxylic acids were quantified using GC/FID analysis. Oleic (25.41-67.69%), linoleic (6.64-40.25%) and palmitic acids (9.57-15.22%) were determined as the most abundant in all five species. The studied mushrooms species could potentially be used in well-balanced diets and as a source of valuable helath-promoting compounds.

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