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Exploring Date Palm, Desert Date, and Acacia as Promising Sources of Edible Oil in Moroccan Deserts Area

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Abstract

Investigating new sources of food has been of growing concern because of the increase of the population, climatic changes, and diverse industrial applications. These factors led to the processing and studying of new sources depending on each country.

Morocco is a country that is known for the scarcity of rains and successive periods of drought. In the dry season, many rural people rely on plants growing in the deserts such as date palm (*Phoenix dactylifera*), deserts date (Balanites aegyptiaca), or Acacia (*Acacia Raddiana*). On one side these plants provide people with nutrients from different parts of the plant and on the other side, they can cope with the increasing problems of climate change with less and less rainfall resulting in erosion, desertification, deforested soils, and a decrease of biodiversity. In addition, they can help to overcome the nutritional situation, result in a better income and safe employment and improve the situation of women working in cooperatives. Therefore, it is crucial to explore each part of these plants seeking nutritional compounds such as edible oil.

The lipid fractions of date palm seeds, acacia seeds, and desert date kernels were extracted by solvent and analysed by gas chromatography (GC-FID or GC-MS) and high-performance liquid chromatography (HPLC). The composition of the oils in terms of triacylglycerols, fatty acids, phytosterols, and tocopherols was done, and the oil content was measured. The composition of the extracted oils was compared with well-known edible oils and the results were used to obtain an informative profile that will serve as the basis for further chemical investigations and nutritional evaluation.

Keywords: Acacia, date palm, Desert date, fatty acids, sterols, tocopherols

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