

Proceeding Paper

Use of Patent Information to Characterize Innovation and Trends in the Application of “Moroccan Argan Oil” in the food Applications [†]

Reda El Boukhari ¹, Samira Oubannin ², Said Gharby ² and Ahmed Fatimi ^{1,*}

¹ Chemical Science and Engineering Research Team (ERSIC), Department of Chemistry, Polydisciplinary Faculty of Beni Mellal (FPBM), Sultan Moulay Slimane University (USMS), P.O. Box 592 Mghila, Beni Mellal 23000, Morocco; elboukhari.reda.fpb21@usms.ac.ma

² Biotechnology, Analytical Sciences and Quality Control Research Team, Polydisciplinary Faculty of Taroudant (FPT), Ibn Zohr University (UIZ), P.O. Box 271, Taroudant 83000, Morocco; oubannin.samira@gmail.com (S.O.); s.gharby@uiz.ac.ma (S.G.)

* Correspondence: a.fatimi@usms.ma

[†] Presented at the 3rd International Electronic Conference on Foods: Food, Microbiome, and Health—A Celebration of the 10th Anniversary of Foods' Impact on Our Wellbeing; Available online: <https://foods2022.sciforum.net>.

Abstract: Argan oil is a non-refined vegetable oil produced from the Argan tree (*Argania spinosa* L.), a species endemic only to southwestern Morocco. Argan oil has been used in this country for centuries, either as food or applied to the skin for cosmetic or medicinal purposes. Depending on the use of roasted or raw argan kernels, food or cosmetic grade oil is obtained. The use of roasted kernels produces an edible oil with a nutty and roasty flavor. Argan oil functions well as a component and a condiment in preparations for both savory and sweet foods. Furthermore, it can be added to vegetables, salads, and soups or drizzled over food just before serving. Argan oil has antioxidant and anti-inflammatory properties and numerous health benefits. It is primarily made up of unsaturated fatty acids and a variety of phenolic and tocopherol compounds that improve heart health, help with diabetes, and have anticancer properties. The purpose of this study is to analyze patent filings on argan oil that were used in food preparations all over the world between 2002 and 2022. This study encapsulates information which could be used as a reference by researchers in the fields of nutrition and food engineering, as well as those interested especially in vegetable oils. The state of the art has been reviewed by introducing what has been patented in relation to argan oil. Furthermore, a detailed analysis of the patentability has been provided by determining publication years, classifications, inventors, applicants, owners, and jurisdictions. As a result, a total of 107 patent documents (i.e., patent applications and granted patents) related to argan oil for food applications were found. The United States leads the patent race in this sector as well, and the University of Arkansas is ranked as the top applicant, indicating that it is a research university leading the way. Based on patent classifications, most found patents and inventions concern fatty acids or derivatives, oils, as well as plant extracts. Furthermore, research and development are based on the investigating or analyzing of food compositions, functions of food ingredients, or processes for food or foodstuffs, which are concentrated in most patents. Finally, this work, which gives an analysis of the past, present, and future trends, leads to various recommendations that could help one to plan and innovate a research strategy in the area of argan oil.

Citation: El Boukhari, R.; Oubannin, S.; Gharby, S.; Fatimi, A. Use of Patent Information to Characterize Innovation and Trends in the Application of “Moroccan Argan Oil” in the Food Applications. *Biol. Life Sci. Forum* **2022**, *2*, x.

<https://doi.org/10.3390/xxxxx>

Published: 1 October 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Keywords: Morocco; argan oil; formulation; food additive; innovation; patent

Author Contributions:

Funding:

Institutional Review Board Statement:

Informed Consent Statement:

Data Availability Statement:

Conflicts of Interest: