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# Potential Use of Mango Leaves Extracts Obtained by High Pressure Technologies in Cosmetic, Phamaceutics and Food Industries

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The greater consciousness awakened in recent years on healthy and organic has led to increase "natural" products demand worldwide. The quality and high content on bioactive compounds have consolidated their penetration in cosmetic and food market, showing great potential within the pharmaceutical sector too. For this reason, food, cosmetic and pharmaceutical sectors have been forced to develop natural products manufactured by efficient and environmentally clean process. Mango leaves extract have showed potential use in food and cosmetic, and pharmaceutical industries due to its high content in potent antioxidant phenolic compounds. The aim of this work was analyse the valorization of pruning mango residues into valuable chemical products by high pressure extraction techniques. An economic feasibility study was realized including industrial scale up, manufacturing costs and financial study, showing the viability of mango leaves extraction by high pressure technologies at industrial scale and the applications of extracts in food, pharmaceutical and cosmetic industries.

## 1. Introduction

In recent years, pharmaceutical, cosmetic and food industries have shown a growing interest in the use of natural antioxidants (non-synthetic origin) obtained from sources like plants, microalgae and microorganism. Mango (*Mangifera indica L.*) leaves are a rich source of phenolic compounds with strong antioxidant power, particularly mangiferin, a special xanthone commonly called as "super-antioxidant" because of their potent antioxidant capacity, and other phenolic compounds like quercetin, widely studied by its pharmacological properties (Massibo et al., 2008).
Thanks to its "super-antioxidant properties", mango leaves extract can be used as natural preservatives in food applications (Morsi et al., 2010) and as anti-aging compound in cosmetic products (Charrier et al., 2006). Also, mango leaves extracts present potential use in pharmaceutical applications as chemo-preventive agent of diseases relates with oxidative stress giving their numerous antioxidant and health-promoting properties scientifically demonstrated (Mohan et al., 2013).
The recovery of bioactive compounds from plants is frequently realized by conventional extractions methods. However, in the last decades, food, cosmetic and pharmaceutical industries have increased their safety requirements to protect the health of consumers and the environment, requiring more efficient and greener processes (Straccia et al., 2013). This work, evaluated a more effective an environmentally friendly extraction technique based on high pressure extraction techniques which present many advantages over conventional processes (Fernández-Ponce et al., 2012).
The present study shows important aspects related to the production of mango leaves extracts by high-pressure extraction techniques: global extraction yield, phenolic content and antioxidant activity of the extract. In addition, an economic feasibility study at industrial scale including scale up is realized. The cost of manufacturing (COM), demand of natural extracts and financial analysis, in order to know the viability of

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# Potential Use Of Mango Leaves Extracts Obtained By High

Raffaela Di Napoli

**Potential Use Of Mango Leaves Extracts Obtained By High:**

*Plant Biomass Applications* Mohammad Jawaid,Anish Khan,Abdullah Mohammed Ahmed Asiri,2024-05-18 Plant Biomass Application Materials Modification and Characterization focuses on the unique properties associated with plant biomass from their biodegradable non toxic and safe for handling characteristics to their potential in developing sustainable climate protecting products Plant biomass has found many applications in the fields of biomedical food packaging electronics automotive sensors and textile industry however there are very few books dealing in depth with materials derived from plant biomass for versatile application fields This book covers all aspects of plant biomass materials opportunities with focus on the value added product generated from plant biomass such as polymers composites transportation fuels chemical intermediates bulk chemicals or sources of heat and generated power The conversion of plant biomass into materials product such as plastics fabrics and carpets and specialty chemicals presents exciting possibilities for replacing traditionally used fossil fuels There are higher value and more attractive uses for for plant biomass use than just as fuel Meanwhile most agriculture forestry and food wastes contain ligno cellulosic resource creating a vast and diverse resource generating system for plant biomass Plant Biomass Materials provides and in depth discussion of the materials derived from plant biomass and their current and potential future applications Leading researchers from industries academics government and private research institutions across the globe have provided their insights making it an important reference for researchers and academics seeking to maximize plant biomass potential Presents basic concepts methods technical concepts literature review and detailed application in particular fields for plant biomass materials Focuses on the processing techniques for different biomass Describes in detail processing methods value added products and their applications in various fields like agriculture and food industry energy catalysis and bio medicinal applications **Artificial Intelligence: Towards Sustainable Intelligence** Sanju Tiwari,Fernando Ortiz-Rodríguez,Sashikala Mishra,Edlira Vakaj,Ketan Kotecha,2023-11-29 This book constitutes the proceedings of the First International Conference AI4S 2023 held in Pune India during September 4 5 2023 The 14 full papers and the 2 short papers included in this volume were carefully reviewed and selected from 72 submissions This volume aims to open discussion on trustworthy AI and related topics trying to bring the most up to date developments around the world from researchers and practitioners **Towards Sustainability in the Wine Industry by Valorization of Waste Products** Patricia Joyce Pamela Zorro Mateus,Siby Inés Garcés Polo,2023-08-01 This volume in our Sustainability Contributions through Science and Technology series reviews the use of alternative green technologies pressurized liquid and super critical fluid extractions for grape biomass valorization Environmental sustainability and circular economy are discussed in relation to agro industrial waste in the winemaking industry The waste contaminates water and soil and in large quantities it has been related to bad odors a high content of organic matter in water and greenhouse gas emissions over the entire winemaking industry Here the authors illustrate how green extraction of commercially valuable substances can be

scaled up at an industrial level Features Reports on waste valorization in the winemaking industry and converting the waste into more useful products including oils antioxidants and other valuable materials Explores research which contributes to environmental sustainability and circular economy in the winemaking industry Describes other ways to reduce the ecological footprint of the wine industry such as using less fertilizer more benign pesticides and reduction of water footprint Proposes options for a potential wine waste biorefining Reviews alternative uses of agro industrial wine wastes as sources of additives for the food cosmetic and pharmaceutical industries **Case Studies on Holistic Medical Interventions** Sai Kiran Oruganti,Dimitrios Karras,Srinesh Singh Thakur,Kalpana Nagpal,Shashi Kant Gupta,2025-02-14 The First International Medical Case Reports Conference 2024 IMED C was a pioneering event set to redefine the landscape of medical research and case reporting This conference was designed to foster collaboration and knowledge exchange among healthcare professionals researchers and scholars worldwide What made this edition exceptional was its virtual online format breaking down geographical barriers and transforming the way medical knowledge is shared It was a platform where the latest breakthroughs in medical case reports were unveiled innovative diagnostic strategies and treatment approaches showcased and visionary ideas were given a voice It became a central meeting point for professionals and scholars seeking to share experiences and expertise across borders *Utilisation of Bioactive Compounds from Agricultural and Food Production Waste* Quan V. Vuong,2017-09-07 The large quantity of waste generated from agricultural and food production remains a great challenge and an opportunity for the food industry As there are numerous risks associated with waste for humans animals and the environment billions of dollars are spent on the treatment of agricultural and food waste Therefore the utilisation of bioactive compounds isolated from waste not only could reduce the risks and the costs for treatment of waste but also could potentially add more value for agricultural and food production This book provides comprehensive information related to extraction and isolation of bioactive compounds from agricultural and food production waste for utilisation in the food cosmetic and pharmaceutical industries The topics range from an overview on challenges and opportunities related to agricultural and food waste the bioactive compounds in the waste the techniques used to analyse extract and isolate these compounds to several specific examples for potential utilisation of waste from agricultural and food industry This book also further discusses the potential of bioactives isolated from agricultural and food waste being re utilised in the food cosmetic and pharmaceutical industries It is intended for students academics researchers and professionals who are interested in or associated with agricultural and food waste **Proceeding Celebes International Conference on Diversity of Wallacea's Line (CICDWL 2015)** Sharma, S., Deshar, R., Rianse, U., Kusmaryono, Y., Zamrun F., M., Analuddin, Sahidin, I., ... Rahim, S.,2015-10-30 Prosiding ini memuat sejumlah abstrak dan makalah yang disajikan dalam Celebes International Conference on Diversity of Wallacea s Line CICDWL 2015 Mengusung tema Sustainable Management of Geological Biological and Cultural Diversities of Wallacea s Line toward A Millennium Era seminar ini diselenggarakan di Kendari pada

8 10 Mei 2015 *Comprehensive Foodomics* ,2020-11-12 Comprehensive Foodomics Three Volume Set offers a definitive collection of over 150 articles that provide researchers with innovative answers to crucial questions relating to food quality safety and its vital and complex links to our health Topics covered include transcriptomics proteomics metabolomics genomics green foodomics epigenetics and noncoding RNA food safety food bioactivity and health food quality and traceability data treatment and systems biology Logically structured into 10 focused sections each article is authored by world leading scientists who cover the whole breadth of Omics and related technologies including the latest advances and applications By bringing all this information together in an easily navigable reference food scientists and nutritionists in both academia and industry will find it the perfect modern day compendium for frequent reference List of sections and Section Editors Genomics Olivia McAuliffe Dept of Food Biosciences Moorepark Fermoy Co Cork Ireland Epigenetics Noncoding RNA Juan Cui Department of Computer Science Engineering University of Nebraska Lincoln Lincoln NE Transcriptomics Robert Henry Queensland Alliance for Agriculture and Food Innovation The University of Queensland St Lucia Australia Proteomics Jens Brockmeyer Institute of Biochemistry and Technical Biochemistry University Stuttgart Germany Metabolomics Philippe Schmitt Kopplin Research Unit Analytical BioGeoChemistry Neuherberg Germany Omics data treatment System Biology and Foodomics Carlos Leon Canseco Visiting Professor Biomedical Engineering Universidad Carlos III de Madrid Green Foodomics Elena Ibanez Foodomics Lab CIAL CSIC Madrid Spain Food safety and Foodomics Djuro Josic Professor Medicine Research Warren Alpert Medical School Brown University Providence RI USA Sandra Kraljevic Pavelic University of Rijeka Department of Biotechnology Rijeka Croatia Food Quality Traceability and Foodomics Daniel Cozzolino Centre for Nutrition and Food Sciences The University of Queensland Queensland Australia Food Bioactivity Health and Foodomics Miguel Herrero Department of Bioactivity and Food Analysis Foodomics Lab CIAL CSIC Madrid Spain Brings all relevant foodomics information together in one place offering readers a one stop comprehensive resource for access to a wealth of information Includes articles written by academics and practitioners from various fields and regions Provides an ideal resource for students researchers and professionals who need to find relevant information quickly and easily Includes content from high quality authors from across the globe Sustainable governance and management of food systems Eija Vinnari,Markus Vinnari,2023-08-07 This book focuses on the role of governance and management in the food chain These methods are now especially important as the current food system has been found to inflict unsustainable environmental pressures on our planet These include but are not limited to greenhouse gas emissions biodiversity loss excessive water usage and problems with nutrition cycles In addition issues such as the treatment of farm animals has attracted considerable media and public attention from the ethical point of view Therefore the prominent questions discussed in this book are What are the most important ethical issues in our fisheries agriculture and food systems How should we govern food systems when sustainability is a key goal What kind of management tools are available for this purpose Who is responsible for making the

agriculture and food system more sustainable Innovative Food Processing Technologies ,2020-08-18 Food process engineering a branch of both food science and chemical engineering has evolved over the years since its inception and still is a rapidly changing discipline While traditionally the main objective of food process engineering was preservation and stabilization the focus today has shifted to enhance health aspects flavour and taste nutrition sustainable production food security and also to ensure more diversity for the increasing demand of consumers The food industry is becoming increasingly competitive and dynamic and strives to develop high quality freshly prepared food products To achieve this objective food manufacturers are today presented with a growing array of new technologies that have the potential to improve or replace conventional processing technologies to deliver higher quality and better consumer targeted food products which meet many if not all of the demands of the modern consumer These new or innovative technologies are in various stages of development including some still at the R D stage and others that have been commercialised as alternatives to conventional processing technologies Food process engineering comprises a series of unit operations traditionally applied in the food industry One major component of these operations relates to the application of heat directly or indirectly to provide foods free from pathogenic microorganisms but also to enhance or intensify other processes such as extraction separation or modification of components The last three decades have also witnessed the advent and adaptation of several operations processes and techniques aimed at producing high quality foods with minimum alteration of sensory and nutritive properties Some of these innovative technologies have significantly reduced the thermal component in food processing offering alternative nonthermal methods Food Processing Technologies A Comprehensive Review Three Volume Set covers the latest advances in innovative and nonthermal processing such as high pressure pulsed electric fields radiofrequency high intensity pulsed light ultrasound irradiation and new hurdle technology Each section will have an introductory article covering the basic principles and applications of each technology and in depth articles covering the currently available equipment and or the current state of development food quality and safety application to various sectors food laws and regulations consumer acceptance advancements and future scope It will also contain case studies and examples to illustrate state of the art applications Each section will serve as an excellent reference to food industry professionals involved in the processing of a wide range of food categories e g meat seafood beverage dairy eggs fruits and vegetable products spices herbs among others **Agriculture and Natural Resources** ,2018 *Nutrition Abstracts and Reviews* ,2005 *Journal of Entomological Research* ,2001 **Proceedings of the 9th National Forum on Health Research for Action** ,2008 **Herbal Medicine for Diseases** ,2008 Indian Science Abstracts ,2003-11 English Mechanic and Mirror of Science ,1893 **Analyse Des Plantes Et Problèmes Des Engrais Minéraux** ,1964 **Plant Breeding Abstracts** ,1997 **Australian Journal of Plant Physiology** ,1988 Subsistence Farming Systems in Semi-arid Northern Yatengo (Upper Volta) Robert Elden Ford,1982

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In a digitally-driven world where screens reign great and quick conversation drowns out the subtleties of language, the profound techniques and psychological nuances hidden within words often move unheard. However, situated within the pages of **Potential Use Of Mango Leaves Extracts Obtained By High** a charming fictional prize pulsing with raw thoughts, lies a fantastic quest waiting to be undertaken. Published by a skilled wordsmith, this charming opus attracts visitors on an introspective trip, gently unraveling the veiled truths and profound affect resonating within ab muscles fabric of each and every word. Within the emotional depths of this touching evaluation, we shall embark upon a genuine exploration of the book is key themes, dissect their fascinating publishing style, and succumb to the strong resonance it evokes strong within the recesses of readers hearts.

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