



# Ethnobotany: From the Traditional to Ethnopharmacology - Book Review

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## Book Review

A review of Marínez, J. L., Maroyi, A., & Wagner, M. L. (Eds.). (2023). *Ethnobotany: From the Traditional to Ethnopharmacology*. Routledge. London, U.K.

As highlighted in *Ethnobotany: From the Traditional to Ethnopharmacology*, edited by José L. Martinez, Alfred Maroyi, and Marcelo L. Wagner (2023), this book presents the latest research on the potential of plants commonly used in traditional medicine and their *pharmacological* applications. The need for new and alternative treatments arises from the inefficacy of some current therapies for various diseases. This compilation provides valuable insights for researchers aiming to develop novel medications.

The book also seeks to preserve the knowledge of indigenous communities worldwide while exploring the medicinal and *pharmacological* uses of plants. By integrating perspectives from *pharmacology*, *ethnobotany*, and *phytochemistry*, it enhances understanding of the role of plants in culture, health, and biodiversity conservation. The first section delves into *ethnobotany*, discussing the pharmaceutical applications of the *Cactaceae* family, along with medicinal and sacred plants with *ethnopharmacological* potential from regions such as Argentina, Colombia, Mexico, Morocco, and among the *Mapuche* people. The second section explores traditional plant knowledge, including the use of medicinal plants in the Atacama Desert, indigenous botanical practices in Buenos Aires, *mopane* utilization in South Africa, *Kichwa* healing customs in Napo, and remedies for bovine *haemonchosis* in Pakistan. Together, these sections underscore the critical importance of plants in *ethnopharmacology* and traditional medicine.

In the first chapter, the author emphasizes the significance of the *Aloysia* genus (Verbenaceae) in Argentina, particularly species such as *A. citrodora* and *A. gratissima*, known for their therapeutic properties and essential oil compositions. However, many species face challenges in classification, hybridization, and data availability. The author underscores the need for a multidisciplinary ethnobotanical approach combining phytochemistry, pharmacology, and cultural knowledge to advance the development of medications, cosmetics, and foods. With proper cultivation and collaborative research, species like *A. citrodora* show significant potential for further development. The chemical and cultural importance of *Aloysia* species highlights the necessity for scientific research and conservation efforts. To unlock their full potential, it is essential to support conservation initiatives and preserve traditional knowledge.

Chapter 2 examines the rich ethnobotanical tradition of southwest Colombia, emphasizing the use of holy and medicinal plants. The biocultural heritage of its inhabitants is reflected in the region's abundance of ecological and cultural variety. The

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authors talk about methods for combining scientific confirmation with local knowledge when researching the medicinal potential of plants. Examples like the use of *ayahuasca* and *Erythroxylum coca* show how vital these plants are to indigenous peoples' spiritual and health activities. By describing the intricate relationships that exist between local populations and their plant resources, the chapter also emphasizes the significance of conserving this biocultural knowledge for future generations. Chapter 3 explores the various uses of the *Cactaceae* family, which is well-known for its bioactive chemicals and ability to adapt to arid settings. The authors examine the pharmacological characteristics of cactus plants, including terpenes, flavonoids, and alkaloids, and their application in traditional medicine. The creative examination of the *Cactaceae* family highlights how these plants that evolved to the desert have grown to be significant elements in both conventional and modern medicines. Strong evidence is presented by the authors that the bioactive compounds found in different cactus species can be used to treat a variety of illnesses, including diabetes and inflammation.

Chapter 4 provides an ethnopharmacological analysis of traditional Mexican diabetes-management plants, with scientific assessments attributing antidiabetic properties to their bioactive constituents. The writers support the inclusion of traditional medicine in public health initiatives and stress the value of protecting indigenous knowledge systems. By using modern scientific methods to evaluate traditional knowledge, the chapter also emphasizes respect for indigenous knowledge. Through a thorough analysis, the authors demonstrate how traditional plant-based treatments can support contemporary medical procedures, serving as a useful paradigm for the creation of both traditional and scientifically based health plans.

Chapter 5 highlights the significance of utilizing local names to correctly identify plants while discussing the difficulties and constraints associated with plant valorization in Morocco. Particularly in traditional medicine, the loss of systematic botany and the use of colloquial nomenclature can result in identification errors and health hazards. Morocco's abundant vascular flora diversity presents prospects for the use of aromatic and medicinal plants however research and valorization activities are hampered by a lack of institutional backing and research on herbarium collections. To better understand and use plants in Morocco, the authors stress the value of a multidisciplinary approach that integrates botanical, scientific, and ethnobotanical knowledge.

Chapter 6 discusses how Mapuche tribes in Patagonia maintained traditional health systems rooted in nature and cosmology by developing biocultural resilience measures throughout the COVID-19 epidemic. According to one definition, COVID-19 is a "wigka" (Westerner's disease) that is associated with environmental damage and disregard for Mother Earth. To address community requirements, emergency committees are formed, and hazards are evaluated using traditional knowledge. This chapter highlights the value of independence, camaraderie, traditional medicine utilizing medicinal plants (lawen), and virtual communication adaption. The chapter also emphasizes how crucial it is to preserve indigenous knowledge considering the global health emergency.

Chapter 7 focuses on the medicinal plants of the Atacama Desert, emphasizing their unique adaptations to extreme environmental conditions. The authors highlight plants such as *Flaveria bidentis*, traditionally used for managing diabetes and wound healing, and *Equisetum giganteum*, utilized for treating respiratory and urinary disorders. These plants' physiological traits, including drought and UV resistance, enhance their pharmacological potential. The chapter further underscores the importance of ancestral knowledge maintained by Indigenous groups, such as the Aymara and Quechua, in preserving and utilizing these medicinal resources.

Chapter 8 examines the Mapuche Traditional Medicine System (MHS), which integrates ecological, spiritual, and communal dimensions of health. The authors discuss the MHS's extensive use of over 500 plant species and its adaptability in addressing modern challenges like the COVID-19 pandemic. Strategies such as biocultural risk assessment and community-centered practices illustrate the resilience of this system. The chapter advocates for the recognition and protection of Mapuche ethnomedical practices through culturally sensitive policies and conservation efforts.

Chapter 9 explores the role of high-altitude wetlands, or bofedales, in the Andes as critical ecosystems for medicinal, nutritional, and ecological purposes. The authors highlight species like *Oxychloe andina*, which support both human health and livestock nutrition. Sustainable practices, such as rotational grazing, are identified as essential for maintaining the productivity and ecological balance of these wetlands. The chapter calls for conservation initiatives to safeguard the biodiversity and cultural significance of bofedales.

Chapter 10 delves into the ceremonial and spiritual uses of plants in Andean cultures. Plants like *Psoralea glandulosa* (culén) are emphasized for their roles in rituals symbolizing purification and protection. This chapter also addresses the ethical aspects of ethnobotanical research, advocating for benefit-sharing frameworks that respect Indigenous intellectual property and foster collaboration between traditional and modern knowledge systems.

Chapter 11 highlights the global importance of ethnopharmacology in the face of biodiversity loss and climate change. The authors emphasize how Indigenous medicinal systems contribute to sustainable healthcare solutions and community resilience. Ethical considerations, such as preventing biopiracy and involving Indigenous communities in research, are discussed as critical for the equitable integration of traditional medicine into modern health frameworks. The chapter concludes with a call for balancing traditional and scientific approaches to address contemporary global health challenges.

The final section of this book discusses the pharmacological potential of medicinal plants due to their bioactive compounds, which make them valuable as traditional medicines. Notable examples include *Vismia* species, known for their diverse secondary metabolites with antimicrobial, antioxidant, and anticancer properties. These compounds demonstrate significant promise for modern medical applications. Additionally, the text highlights the ethical and sustainable practices required to prevent overexploitation while advancing bioprospecting efforts.

A comprehensive and perceptive examination of the interface between conventional wisdom and contemporary science is provided by *ethnobotany*. The book addresses issues like conservation and the moral conundrums in *ethnobotanical* study while highlighting the cultural, physiological, and ecological aspects of therapeutic plants. For scholars, professionals, and students with an interest in *ethnobotany*, *pharmacology*, and conservation, it is an essential resource. The book emphasizes the value of conserving biodiversity and encouraging sustainability for future generations by advocating for the merging of traditional knowledge with contemporary health practices.

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## Book Reviewed

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