



A mini review on the medicinal studies of the selected *Artocarpus* species in the Philippines

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Abstract

Medicinal plants found in various parts of the world serve as one source of healing commodities. The Philippines' rich and lively ecosystems are home to the *Artocarpus* genus, a group of plants known for their broad medicinal potential. This mini review article delves into providing sufficient data and information on several studies on the medicinal properties of selected *Artocarpus* species found in the Philippines, such as *Artocarpus heterophyllus* (Jackfruit), *Artocarpus odoratissimus* (Marang), and *Artocarpus camansi* (beadfruit), including their uses, constituents, and key points of their applications. These medicinal plants have long been used in traditional Filipino herbal medicine. Rare perspectives take into account the issues of sustainability in herbal medicine, as well as the balance between traditional practices and modern pharmacological demands.

Keywords: *Artocarpus*; Philippines; Medicinal Plants; Herbal Medicine

1. Introduction

Scientific experts throughout the world are researching alternate sources of pharmaceutical treatment options, one of which might be medicinal plants. The genus *Artocarpus* has 50 species from the Moraceae family that contain phytochemicals. *Artocarpus* species include a lot of phenolic substances such as flavonoids, stilbenoids, arylbenzofurans, and pectin. The extracts and metabolites of *Artocarpus*, particularly those from the leaves, bark, stem, and fruit, contain a number of useful bioactive compounds, and new data on their use in a variety of biological activities, including antibacterial, antiviral, antifungal, cytotoxicity, and *in vivo* biological activities that have recently emerged. Several pharmacological investigations on natural compounds on *Artocarpus* have firmly shown their mechanism of action in the treatment of a variety of disorders as well as other health advantages. Strong multidisciplinary programs that combine both traditional and modern technology is important for *Artocarpus*' future growth as a viable source of therapeutic compounds [1,2]. The aim of this present review is to gather ample data on the selected *Artocarpus* plant species found in the Philippines possessing medicinal properties.

2. Methods

This review was tendered using journal databases such as Directory of Open Access, Elsevier, Index Copernicus, Google Scholar, and Wiley online library. Search process was conducted for articles on each database without variations on language in the process of the study. The search started in June 1, 2025. The search keywords applied include *Artocarpus* species, Philippine *Artocarpus* plants, Jackfruit, Marang, Beadfruit and Moraceae. Suitable studies or articles were classified using specific criteria as follows: articles focused on *Artocarpus* plant species found in the Philippines and

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articles related to the reports of their medicinal properties. There was no online review undertaking for this study that occurred [3].

3. Results and Discussions

Artocarpus is an important group of plants in the Moraceae family. There are 55 *Artocarpus* species found in East Asia, South Asia, Southeast Asia, New Guinea, and the southern Pacific. Some *Artocarpus* species produce edible fruits, which has led to cultivation of the goods. The fruits can be eaten as soon as they're ripe. Most are eaten fresh when ripe, fried in batter, or served as sweets. *Artocarpus* trees are primarily evergreen, with thick white latex. The leaves are spirally arranged or alternating. While *Artocarpus* fruits have different sizes from small to large with fleshy seeds that are mostly large and embedded in the head of the fruit and surrounded by a waxy or pulpy succulent layer. The sapwood has various shades of light yellow which can be differentiated from the heartwood that has different shades of brown and sometimes traces of olive green. *Artocarpus* produces two types of hardwood, light and medium hardwood. *Artocarpus* species contain a variety of phenolic chemicals, including flavonoids, stilbenoids, arylbenzofurans, and the lectin Jacalin [4,5]. These chemicals contribute to the species' biological and therapeutic qualities. *Artocarpus* species often found in the Philippines include *heterophyllus*, *odoratissimus*, and *camansi*.

Artocarpus heterophyllus, frequently referred to as *jackfruit*, is a tropical tree that is extensively farmed in the Philippines. Aside from its nutritional importance, current scientific research has looked at its possible therapeutic characteristics, which might benefit both traditional and modern healthcare methods. Several components of the jackfruit tree are used in traditional medicine in the Philippines. It is said that the bark, roots, leaves, and seeds have medicinal qualities. The seeds are consumed for their purported nutritional and therapeutic properties, such as improving immunity and facilitating digestion, while the leaves are traditionally used to heal wounds, skin conditions, and inflammation. Extracts from jackfruit leaves and seeds have been shown to contain phenolic chemicals and flavonoids, both of which have antioxidant qualities. These chemicals may assist to reduce oxidative stress and inflammation. Experimental studies conducted in the Philippines indicate that jackfruit extracts have antibacterial properties against common pathogens, validating its traditional usage for wound healing and skin diseases. Preliminary *in vitro* studies indicate that some chemicals from jackfruit have cytotoxic effects on cancer cell lines, but further study is needed to substantiate these findings. A few studies in the Philippines show that extracts from jackfruit sections may assist in reducing blood sugar levels and improving lipid profiles, providing potential for management of metabolic disorders [6-9].

Artocarpus odoratissimus, a tropical fruit tree in the Moraceae family, is valued in the Philippines and other Southeast Asian nations for its delicious fruit and traditional medicinal uses. In Filipino ethnobotanical traditions, different plant parts, such as leaves, bark, and roots, are used for their claimed medicinal advantages. In traditional Filipino medicine, *A. odoratissimus* is thought to have anti-inflammatory, antibacterial, and antioxidant qualities. Its leaves are commonly used in poultices to treat skin irritations and wounds. The fruit is also said to have a cooling effect, which may assist to reduce fever and promote digestion. Furthermore, some native customs involve consuming bark extracts as tonics for overall health and vigor. Recent scientific investigations in the Philippines have sought to validate these traditional claims using phytochemical and pharmacological tests. Flavonoids, phenolics, and tannins have been isolated from various portions of the plant and are known to have antioxidant and antibacterial properties. *In vitro* studies, for example, have shown that the plant can prevent the development of some dangerous bacteria and fungus, lending credence to its traditional antibacterial properties. Furthermore, *in vitro* antioxidant experiments have shown that *A. odoratissimus* extracts exhibit high free radical scavenging activity, which may add to their potential as a natural antioxidant source. This is especially important considering the growing interest in natural products for treating oxidative stress diseases. While most research is still in its early stages, the intriguing bioactive chemicals found in *A. odoratissimus* point to potential therapeutic uses. These include the development of herbal wound healing medicines, anti-inflammatory medications, and perhaps anticancer drugs. However, large-scale clinical studies are required to determine effectiveness and safety for human usage [10-12].

Artocarpus camansi, often known as breadnut, is a tropical fruit tree native to the Philippines and other Southeast Asian nations. In traditional Filipino medicine, certain sections of *A. Camansi*, comprising the leaves, seeds, and bark, has been utilized for its supposed medicinal benefits. In the Philippines, *A. Camansi* has historically been used to treat a variety of health issues. The leaves are commonly used in decoctions to treat fever, diarrhea, and skin diseases. The seeds are occasionally used to increase energy and vigor, while the bark is utilized as a herbal cure for respiratory problems. Recent phytochemical investigations have shown beneficial chemicals in *A. Camansi* contains flavonoids, tannins, and saponins, which have antioxidant, anti-inflammatory, and antibacterial properties. These scientific findings lend credence to traditional usage while also indicating the possibility of more formal pharmaceutical use. Research in the Philippines has begun to investigate its pharmacological potential. It was found that leaf extracts have antibacterial

activity against bacteria like *Staphylococcus aureus* and *Escherichia coli*, indicating that they may be used as a herbal antimicrobial agent. Furthermore, anti-inflammatory and analgesic studies are promising and the extracts have demonstrated substantial action in animal laboratory models, indicating that they can be used to reduce fever and inflammation [13-16].

4. Conclusion

Artocarpus plant species found in the Philippines are promising medicinal plants that can be a source of treatment or pharmaceutical commodities due to the presence of active constituents. Further studies are needed to validate their safety and efficacy.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

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