

SPECIES OF AMORPHOPHALLUS FOUND IN INDIA

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ABSTRACT

The genus *Amorphophallus* is part of the Araceae family and is found globally. These plants have been utilized in traditional medicine for centuries, particularly within Ayurveda and Unani practices. *Amorphophallus* species are rich in polyphenolic compounds, which are linked to various pharmacological benefits, including analgesic, neuro-protective, hepato-protective, anti-inflammatory, anticonvulsant, antibacterial, antioxidant, anticancer, anti-obesity, and immune-modulatory effects. They are also known to alleviate gastrointestinal issues and lower blood glucose levels. Additionally, these species contain a variety of other chemical compounds, such as alkaloids, steroids, fats, fixed oils, tannins, proteins, and carbohydrates, all contributing to their medicinal properties in treating conditions like acute rheumatism, tumors, lung inflammation, asthma, vomiting, and abdominal pain. *Amorphophallus* species are commonly used in various herbal formulations and pharmaceutical products. Despite the ongoing publication of experimental studies examining their pharmacological properties, a comprehensive review of the *Amorphophallus* genus has yet to be conducted. This review aims to provide an in-depth analysis of the pharmacological properties of *Amorphophallus* species, including their phytochemical components, ethno medicinal applications, and toxicological profiles.

KEYWORDS: *Amorphophallus paeoniifolius*, Elephant Foot Yam, Araceae family, Ethnobotany.

INTRODUCTION

The genus *Amorphophallus*, which belongs to the Araceae family, includes around 230 species. Many of these species, after careful processing to remove potentially harmful compounds, can serve as emergency or "famine foods" in times of scarcity. Among these, *Amorphophallus paeoniifolius*, commonly known as "elephant foot yam" or "Jimikand," is particularly notable for its culinary and medicinal uses. It is a tuberous herb widely valued in Ayurvedic medicine for addressing a range of health issues.

Amorphophallus paeoniifolius is a major tuber crop in tropical and subtropical regions, cultivated and consumed extensively in countries such as India, Indonesia, Malaysia, and the Philippines. Known for its high yield and appealing taste, it is now a valuable cash crop in India, grown widely in states like West Bengal, Andhra Pradesh, Uttar Pradesh, Gujarat, Tamil Nadu, Kerala, Maharashtra, and Jharkhand. Only a few, such as elephant foot yam and konjac, are suitable for human

consumption. Other species are used for their therapeutic properties or as ornamental plants.

During the rainy season, these plants bloom, producing a unique purple flower from the corm. The corms themselves are harvested at the end of the growing season and are rich in various therapeutic properties. Traditionally, the corms of *Amorphophallus* species have been used for their thermogenic, anti-inflammatory, digestive, carminative, and rejuvenating effects. They have applications in treating conditions such as asthma, arthritis, bronchitis, digestive disorders, and anemia, and are especially useful for managing ailments related to the Kapha and Vata doshas in Ayurveda.

Morphology

Surana is a unique plant that grows up to 2-4 feet tall with a soft, delicate stem. It thrives in the wild across India and is also cultivated for its edible tuber. The plant blooms annually at the start of the rainy season, producing large, umbrella-like leaves (2-3 feet wide).

Its flower starts as a purple bud emerging from the corm and later transforms into a striking inflorescence. The plant has both male and female flowers clustered in a cylindrical shape. The top part of the flower secretes a pungent, putrid-smelling mucus that attracts insects for pollination. Below this, the male (staminate) and female (pistillate) flowers are arranged in layers. The fruit is small (3-4 inches), red in color, and contains 2-3 seeds. The tuber itself is large (1-2 feet in diameter), dark brown, and widely used for culinary and medicinal purposes.

Medicinal Properties & Uses

Surana is valued in Ayurveda for its strong healing properties.

Types found all over the world

Titan arum	Amorphophallus myosuroides	Amorphophallus canaliculatus
Amorphophallus bulbifer	Amorphophallus ongsakulii	Amorphophallus gallaensis
Amorphophallus atroviridis	Amorphophallus hewittii	Amorphophallus amygdaloides
Elephant Foot Yam	Amorphophallus harmandii	Amorphophallus kachinensis
Konjac	Amorphophallus rostratus	Amorphophallus nanus
Amorphophallus gigas	Amorphophallus operculatus	Conophallus konjak
Amorphophallus kiusianus	Amorphophallus variabilis	Amorphophallus galbra
Amorphophallus henryi	Amorphophallus dracontioides	Amorphophallus borneensis
Amorphophallus albus	Amorphophallus impressus	Amorphophallus gliruroides
Amorphophallus pygmaeus	Amorphophallus adamsensis	Amorphophallus incurvatus
Amorphophallus abyssinicus	Amorphophallus allenii	Amorphophallus commutatus
Amorphophallus oncophyllus	Amorphophallus accrensis	Amorphophallus asterostigmatus
Amorphophallus muelleri	Amorphophallus curvistylis	Amorphophallus verticillatus
Amorphophallus yaoui	Amorphophallus aberrans	Amorphophallus sizemoreae
Amorphophallus richardsiae	Amorphophallus albispatus	Amorphophallus thaiensis
Amorphophallus aphyllus	Amorphophallus consimilis	Amorphophallus tenuispadix
Amorphophallus mossambicensis	Amorphophallus mangelsdorffii	Amorphophallus excentricus

Species found in India

Amorphophallus paeoniifolius

Amorphophallus paeoniifolius (Dennst.) Nicolson, commonly referred to as Elephant Foot Yam, is a member of the Araceae family, known for its large, edible tuber. This species flourishes in moist deciduous forests across various regions in India, particularly in Karnataka, Kerala, and Maharashtra.

It is predominantly found in districts like Uttara Kannada, Hassan, and Udupi in Karnataka, as well as throughout Kerala. Characterized by its substantial underground corm, The plant also features large, spreading leaves and produces a foul-smelling flower in a spadix structure, typically during May and June. It is locally called Soorana in Sanskrit and Jameenkand in Hindi and is widely recognized for its nutritional and medicinal value.

Amorphophallus konjac

Amorphophallus konjac commonly known as Konjac or Devil's Tongue, is a species in the Araceae family, native to East Asia, especially Japan, China, and Korea. This herbaceous plant produces a large tuber, rich in

Rasa: Pungent (Katu) and Astringent (Kashaya)
Guna: Light (Laghu), Dry (Ruksha), and Sharp (Teekshna)
Vipaka: Pungent (Katu)
Veerya: Hot (Ushna)
Karma: Balances Kapha and Vata doshas (Kaphavata Shamaka)
Prabhava: Highly effective in treating piles (Arshogna)

With its unique structure and powerful medicinal effects, Surana is not just a plant it is a natural healer, supporting digestion, metabolism, and overall well-being.

glucomannan, which is used in food products like konjac noodles and gelatin.

It thrives in temperate climates, flourishing in regions of Japan, China, and Korea. Known for its distinctive flower with a strong odor, the plant has medicinal benefits, aiding digestion, weight loss, and lowering cholesterol. A. konjac is also used in traditional medicine to treat ailments like coughs and inflammation.

Amorphophallus bulbifer is a tuberous herbaceous plant from the Araceae family, found in tropical and subtropical regions of India and Sri Lanka. Known for its small bulbils along the stem, which can regenerate into new plants, it grows in humid climates. This species is notable for its foul-smelling flowers and medicinal properties. It is traditionally used to treat digestive issues like diarrhea and inflammation. Additionally, it has analgesic and anti-inflammatory effects, making it useful for conditions such as rheumatism and joint pain. The edible tubers, after proper processing, are also used in some local diets.

Amorphophallus commutatus is a species of herbaceous plant in the Araceae family, native to India

and other tropical regions. It is characterized by large, ornamental leaves and a robust underground corm. Known for its medicinal uses, it has been traditionally employed in the treatment of liver ailments, such as jaundice. The plant's properties include anti-tumor effects, though more research is needed to confirm its effectiveness. Additionally, it is used for pain relief and reducing inflammation, often applied as a poultice. Like other species in the genus, *A. commutatus* contributes to both folk medicine and local agricultural practices.

Amorphophallus sylvaticus, also known as the Forest Elephant Foot Yam, is a herbaceous plant belonging to

the Araceae family. It is native to the tropical and subtropical forests of India, particularly in regions with high humidity. This species is known for its large, underground tuber and its distinctive flowering structure, which produces a foul-smelling spadix surrounded by a bell-shaped spathe. *A. sylvaticus* has several medicinal uses, including its antioxidant and blood-purifying properties. It is traditionally used to treat diabetes, digestive issues, and skin diseases. The plant is also considered beneficial for detoxification and overall health.

Species	Uses	Chemical component
Amorphophallus paeoniifolius (Elephant Foot)	Digestive Aid: Treats indigestion and hemorrhoids due to its laxative properties. -Anti-inflammatory: Reduces inflammation.	Alkaloids, flavonoids, tannins, saponins, carbohydrate proteins and amino acids.
Yam	particularly in arthritis and swelling. - Antimicrobial: Has antibacterial and antifungal properties for infection control. - Weight Management: Low in calories, traditionally used to support weight loss.	-
Amorphophallus konjac (Konjac Yam, Devil's Tongue).	Dietary Fiber: Rich in glucomannan, used for digestive health and weight management. - Cholesterol Reduction: Lowers LDL cholesterol, supporting heart health. - Blood Sugar Control: Helps stabilize blood sugar levels, useful for diabetes. - Skin Health: Used in cosmetics for its moisturizing properties.	Glucomannan, alkaloid, flavonoids, glycoproteins
Amorphophallus bulbifer (Bulb-bearing Elephant Foot Yam)	Anti-diarrheal: Used in traditional medicine for treating diarrhea and digestive issues. - Anti-inflammatory: Reduces inflammation, especially in rheumatism. - Wound Healing: Tubers are used topically to promote wound healing.	-
Amorphophallus sylvaticus (Forest Elephant Foot Yam),	Antioxidant: Has antioxidant properties that protect cells from oxidative damage. - Blood Purifier: Used to purify the blood and detoxify the body. - Antidiabetic: Studied for its potential to lower blood sugar levels.	Phenols, saponins alkaloids, glycosides.
Amorphophallus commutatus.	Liver Health: Used to treat liver diseases and jaundice in traditional medicine. - Anti-tumor Properties: Shows potential for inhibiting tumor growth, though further research is needed. - Pain Relief: Applied as a poultice for relieving pain and inflammation.	Flavonoids, tannin, saponin, alkaloids.

CONCLUSION

Surana is a powerful Ayurvedic herb known for its cleansing, astringent, and digestive-enhancing properties. It is light to digest, pungent in taste, and boosts digestion (Deepana).

Health Benefits

Digestive Health - Helps with constipation, piles, abdominal tumors, worm infestations, and colic pain. Also supports liver function and appetite.

External Use - Works as an anti-inflammatory and pain reliever. When applied with honey or ghee, it helps with joint inflammation, elephantiasis, and unwanted growths.
Respiratory Support - Soothes cough and breathing disorders by balancing Kapha dosha.
Reproductive Health - Acts as an aphrodisiac and helps manage oligomenorrhea.
Metabolic & Strength Boosting - Supports weight management, rejuvenation (Rasayana), and overall vitality.

With its diverse healing properties, Surana is a natural remedy for digestive, respiratory, and metabolic health, blending tradition with practical wellness benefits.

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