

Momordica cymbalaria: An Underutilized Vegetable

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ABSTRACT

Momordica cymbalaria (*M. cymbalaria*), a member of the Cucurbitaceae family, is native to tropical regions of India and Southeast Asia. Commonly known as Karchikai (Kannada), Athalakkai (Tamil), Kasarakayee (Andhra Pradesh), and Kakrol (India), this plant has been a staple in various Asian traditional medicine systems for centuries. Its applications span the treatment of diabetes mellitus, rheumatism, ulcers, skin diseases, and diarrhea. Extensive research has highlighted the diverse medicinal properties of *M. cymbalaria*. Despite its significant medicinal value, *M. cymbalaria* faces the looming threat of extinction due to anthropogenic activities such as habitat destruction from grazing and urbanization, as well as challenges related to poor seed viability and germination.

INTRODUCTION

Momordica cymbalaria, an underutilized vegetable, emerges from the heart of diverse agricultural landscapes, offering a wealth of nutritional benefits that remain largely undiscovered. This humble and often overlooked member of the *Momordica* genus possesses unique qualities that make it a potential gem in the realm of unconventional

and nutritious food sources. From its distinctive appearance to its potential culinary applications, *Momordica cymbalaria* beckons exploration, inviting us to uncover the hidden treasures within its leaves, fruits, and stems (Raju and Balaraman, 2008).

In a world where traditional vegetables dominate our plates, the underutilized nature of *Momordica cymbalaria* hints at a reservoir

of untapped nutritional value. Its resilience in varying climates and soils, coupled with an ability to thrive with minimal cultivation inputs, makes it an attractive prospect for sustainable agriculture (Jeyadevi *et al.*, 2012).

Scientific classification:

- Kingdom : Plantae
- Order : Cucurbitales
- Family : Cucurbitaceae
- Genus : Momordica
- Species : *cymbalaria*

Botanical Description:

Climbing annual or perennial herb with slender, scandent, branched, striate stem.

- **Leaves** - display an orbicular-reniform outline, featuring a deeply cordate base and obtuse lobes, typically numbering between 5 and 7
- **Fruits** - 20 to 25 mm in length, exhibiting a pyriform shape distinguished by eight sharp ridges. Measuring 24 mm by 15 mm, they taper at the apex and feature a base that narrows into a curved peduncle. This peduncle is characterized by its fleshy, dark green appearance, marked with distinctive ridges.
- **Seeds** - measure 4.6 mm in length, possessing an ovoid shape with a smooth and glossy surface
- **Flowers** - exhibit a unisexual nature. In the case of male flowers, the peduncle ranges from 5 to 30 mm in length and takes on a filiform structure. These male flowers are characterized by their puberulous and ebracteate composition, arranged in racemes containing 2-5 flowers each. The blossoms feature a

pale-yellow corolla and two stamens per flower. On the other hand, female flowers appear solitarily, positioned on peduncles measuring 28 mm in length.

- **Roots** – woody



Fig 1: Fruits of *Momordica cymbalaria*

Nutritive value:

Composition	Value	Composition	Value
Moisture (%)	84.30	Calcium (mg/100g)	72.00
Fibre (%)	6.41	Sodium (mg/100g)	40.00
Beta Carotene (%)	0.01	Potassium (mg/100g)	500.00
Protein (%)	2.15	Iron (mg/100g)	1.70
Carbohydrate (%)	12.60	Zinc (mg/100g)	2.82
Energy k Cal/ 100 g	3.00	Maganese (mg/100g)	0..32
Vitamin C (mg/100g)	290.00	Phosphorus (mg/100g)	0.46

Medicinal Properties

Some of its notable medicinal properties (Rao *et al.*, 2001) include:

1. **Hypoglycemic Activity:** *Momordica cymbalaria* has been reported to exhibit hypoglycemic properties, making it

beneficial for individuals with diabetes mellitus.

2. **Hypolipidemic Effects:** The plant has demonstrated hypolipidemic activity, indicating its potential in managing lipid levels and promoting cardiovascular health.
3. **Cardioprotective Effects:** *Momordica cymbalaria* is associated with cardioprotective properties, suggesting a positive impact on heart health.
4. **Hepatoprotective Properties:** The plant has been recognized for its hepatoprotective effects, indicating a protective role in liver health.
5. **Nephroprotective Effects:** *Momordica cymbalaria* exhibits nephroprotective properties, suggesting potential benefits for kidney health.
6. **Antioxidant Activity:** The plant is rich in antioxidants, which play a crucial role in neutralizing harmful free radicals in the body, contributing to overall health and well-being.
7. **Wound Healing:** *Momordica cymbalaria* has been reported to have wound-healing properties, indicating its potential in promoting the healing of skin injuries.
8. **Infertility Treatment:** Traditional uses include the treatment of infertility, suggesting a role in reproductive health.
9. **Anti-ulcer Properties:** The plant is traditionally used for the treatment of ulcers, indicating anti-ulcer properties.
10. **Anti-cancer Potential:** Some studies suggest that *Momordica cymbalaria* may have anti-cancer properties, contributing

to the exploration of natural remedies against cancer.

CONCLUSION:

Herbal remedies, known for their cost-effectiveness and convenience, have a rich history of traditional use for medicinal purposes. In ancient times, as well as in our ancestral heritage, reliance on plants for disease recovery was predominant. However, the current trend of favoring artificial sources over natural ones in combating diseases is concerning. The escalating reports of antibiotic resistance and the adverse effects of synthetic drugs globally are sounding a health alert. The alarming rise in worldwide cases of diabetes, cancer, obesity, hypertension, and neurodegenerative diseases necessitates extensive research for causes and remedies. This paper emphasizes the urgent need for alternatives to synthetic drugs, focusing on *Momordica cymbalaria*. The plant exhibits significant nutritional and nutraceutical properties, containing phenolic acids, flavonoids, carotenoids, cucurbitane triterpenoid, and phytosterol. These components play a crucial role in combating various diseases, including diabetes mellitus, cardiovascular issues, ulcers, cancer, and diabetic neuropathy. *Momordica cymbalaria* is renowned for its hypoglycemic, wound healing, infertility, hypolipidemic, hepatoprotective, nephroprotective, and antioxidant properties, making it a promising candidate for addressing contemporary health challenges.

REFERENCES

- Jeyadevi, R. A., Sivasudha, T., Rameshkumar, A., Sangeetha, B., Ananth, D. A., & Aseervatham, G. S. B. (2012). Nutritional constituents and medicinal values of *Momordica cymbalaria* (Athalakkai)—A review. *Asian Pacific Journal of*

- Rao, B. K., Kesavulu, M. M., & Apparao, C. H. (2001). Antihyperglycemic activity of *Momordica cymbalaria* in alloxan diabetic rats. *Journal of ethnopharmacology*, 78(1), 67-71.
- Raju, K., & Balaraman, R. (2008). Antidiabetic mechanisms of saponins of *Momordica cymbalaria*. *Pharmacognosy Magazine*, 4(15), 197-20
- Tropical Biomedicine*, 2(1), S456-S461.