

***Kalanchoe pinnata*: A Miraculous Plant**

Sandhya Dhyani

Research Scholar, Department of Food Science and Nutrition, College of Community Sciences, G. B. Pant

University of Agriculture and Technology, Pantnagar

Corresponding Author: sun19961015@gmail.com

Introduction

Kalanchoe pinnata, commonly known as the “air plant” or “cathedral bells,” is a fascinating species of succulent plant that belongs to the *Crassulaceae* family. Native to Madagascar, this plant is renowned for its striking appearance and impressive adaptability and can be found in almost every part of India. Its unique appearance makes it a popular choice for decorative indoor and outdoor arrangements. It is a succulent plant with medium sized thick leaves which remains green in every season. The other common names of *Kalanchoe pinnata* are Life plant, Love bush, Floppers etc. In India, it is referred to as Patharchattam, Patthar talk, Patharchur etc. In Ayurveda, this plant is highly admired as a potent medicinal herb which helps in treating several health issues.

Morphology

It is a fast-growing, perennial plant that can reach up to 3 feet (90 cm) in height. It often has a bushy, spreading growth habit. *Kalanchoe pinnata* exhibits a distinctive morphology that sets it apart from other succulents. The plant features fleshy leaves that are typically elliptical in shape. These leaves have a waxy surface, which helps in retaining moisture. They can vary in colour from green to bluish-green, sometimes with a reddish tint along the edges. The leaves are often serrated or have tooth-like projections along the margins as a defence mechanism to prevent it from herbivores and pests. Roots are shallow but are widely distributed throughout to anchor the plant securely in the soil. The plant can also propagate easily through plantlets that form along the edges of its leaves.



Fig. 1. *Kalanchoe* plant, its flowers and plantlets)

Benefits of plant

- **Ornamental uses:** It is used as indoor plant due to its attractive leaves and flowers.
- **Traditional remedies:** Various varieties of *Kalanchoe* plant is used as traditional remedies for various ailments.
- **Easy propagation:** *Kalanchoe* plants are known for their ease of propagation through leaf cuttings and plantlets, making them a popular choice for horticultural enthusiasts and commercial growers.
- **Pharmacological research:** Ongoing research is exploring the potential therapeutic uses of *Kalanchoe* plants, including their bioactive compounds and possible applications in modern medicine.
- **Nutritional benefits:** It is rich in various phytochemicals, vitamins and minerals.
- **Low maintenance:** It is a drought tolerant and minimal care requiring plant.

Nutritional and pharmacological properties

This plant is also called as miracle plant due to its use in curing various diseases. It has been used as an ethno medicine for digestive and skin problems in various parts of India. The juice extracted from the leaves of *Kalanchoe pinnata* is used in curing conditions such as kidney problems, urinary tract infections, gastric ulcers, cholera etc. The plant extract is rich in bioactive compounds such as alkaloids, phenolic compounds, terpenes, phytosterols, glycosides, saponins and flavonoids. Its phytochemical composition contributes to its pharmacological properties such as analgesic, antioxidant, anti-diabetic, nephroprotective, anti-inflammatory, anti-cancerous, anti-fungal, anti-bacterial and anti-ulcerous etc.

Along with the pharmacological properties, this plant it is also rich in various nutrients such as vitamins and minerals. The plant is a good source of vitamin C, riboflavin, niacin, thiamine and minerals like iron, phosphorus, potassium, calcium, magnesium etc. Roots of this plant contain good

amount of protein, carbohydrate and energy value. The leaves of *Kalanchoe pinnata* can be utilized in several ways, including drinking the juice directly by squeezing the leaves, chewing fresh leaves, or consuming dried leaf powder followed by drinking water. Additionally, the leaves can be prepared as a hot decoction by boiling whole or crushed fresh leaves in water, or by making a hot decoction from dried leaf powder. Both fresh and dried plant materials can be employed for extraction purposes. The plant is believed to offer digestive advantages, supporting gastrointestinal health and potentially relieving problems like indigestion and constipation. Researches indicate that *Kalanchoe pinnata* might possess hypoglycemic properties, which could be advantageous for those managing diabetes. The bioactive compound phenyl alkyl ether found in this plant may stimulate insulin secretion, helping to regulate blood sugar levels. The anti-lithiatic properties of this plant are well known in various parts of India. The leaf juice of *Kalanchoe* is known in help in relieving conditions like kidney stones due to its diuretic property which increases urination rate. The consumption of juice of *Kalanchoe pinnata* can enhance the excretion of citrate, which may contribute to a reduced risk of kidney stone formation and improve overall urinary tract health. The leaf juice of this plant helps in reducing oxalate excretion which lowers the risk of these stones forming. This reduction can be beneficial for individuals with a history of kidney stones or those at risk for developing them.

Conclusion

Kalanchoe pinnata, often celebrated for its remarkable properties, is a plant that truly stands out in both traditional and modern contexts. Its diverse benefits, ranging from its striking ornamental value to its potential therapeutic uses, underscore its significance. The plant's medicinal properties are particularly noteworthy. It has been traditionally utilized for its anti-inflammatory, antimicrobial, and wound-healing effects, contributing to its reputation

in herbal medicine. Recent studies also highlight its diuretic properties, demonstrating its ability to increase urine output while enhancing citrate excretion and reducing oxalate levels. These actions are beneficial in promoting urinary tract health and potentially preventing kidney stone formation. Furthermore, *Kalanchoe pinnata*'s adaptability and ease of propagation make it a versatile addition to gardens and homes alike. Whether used for its health benefits or as an ornamental feature, this plant offers a blend of practical and aesthetic advantages. In essence, *Kalanchoe pinnata* stands out as a plant of remarkable versatility and value. Its blend of therapeutic potential and ornamental charm makes it a truly fascinating and beneficial species, meriting recognition and appreciation for its diverse applications.

References

- Dogra P, Sharma K, Bharti J, Kumar N and Kumar D., 2022. *Kalanchoe Pinnata* is a Miraculous Plant: A Review. *J Biomed Allied Res.*, 4(2):1-10.
- Fernandes, J. M., Cunha, L. M., Azevedo, E. P., Lourenço, E. M., Fernandes-Pedrosa, M. F. and Zucolotto, S. M., 2019. *Kalanchoe laciniata* and *Bryophyllumpinnatum*: an updated review about ethnopharmacology, phytochemistry, pharmacology and toxicology. *Revista Brasileira de Farmacognosia*, 29:529-558.
- Singh, M., Kumar, S. and Verma, M. 2022. A Landscape Analysis of the Ethnomedicinal, Pharmacological and Therapeutic Potential of *Kalanchoe pinnata* (Lam.) Pers. *International Journal of Enhanced Research in Science, Technology & Engineering*, 8(11):24-32.
- Kumar, G., Kumar, R. and Rana, H. 2023. The pharmacological activities of mother of thousand (*Kalanchoe pinnata*). *Research Journal of Pharmacology and Pharmacodynamics*, 15(1):31-35.
