



Cleome gynandra: A Marvellous Plant in the Front Yard

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ABSTRACT

Cleome gynandra is a widely found plant that grows as a weed in barren lands and agricultural fields across India. Globally, it is utilized in various traditional medicine systems to treat numerous ailments and is also incorporated into different culinary practices due to its impressive nutritional and antioxidant benefits. In India, traditional healers commonly use it to manage conditions such as epilepsy, irritable bowel syndrome, and parasitic infections. The plant is rich in proteins, amino acids and minerals, making it a potentially valuable crop that can be easily cultivated for economic purposes. This review article highlights the medicinal uses of *Cleome gynandra*, citing its properties as an immunomodulator, antioxidant, anticancer agent, and analgesic. Given these established benefits, *Cleome gynandra* shows promise as a potential therapeutic option in the future.

INTRODUCTION

C*leome gynandra* is a species of *Cleome* that is used as a leaf vegetable. It is known by many common names including Shona cabbage, African cabbage, spiderwisp, cat's whiskers and stinkweed. It is an annual wildflower native to Africa but has become widespread in many tropical and sub-tropical parts of the world (Chweya *et al.*, 1997).

In front of my households, a seemingly ordinary plant has been thriving for years. *Cleome gynandra* L. a plant often overlooked as a weed, but it holds significant nutritional and medicinal value. Despite its common occurrence in rural landscapes, this plant remains underutilized in modern diets and healthcare practices. As urbanization and changing agricultural practices continue to shift dietary patterns, traditional plants like *Cleome gynandra* are at risk of being forgotten.

Vernacular names in India (Mishra, 2011)

Sanskrit	: Pasugandhi, Ajagandha
Assamese	: Bhutmulla
Bengali	: Hurhuria, Shulte
English	: Dog Mustard
Gujarat	: Talvani, Dhelitalavan
Hindi	: Hulhul, Hurhur, Kavalia
Kannada	: Naram bele Soppu, Nayeetulasi
Kashmiri	: Gandi Buti
Malayalam	: Atunari vela
Marathi	: Tilvan, Bhatvan, Mabli, Tilavana, Tilvant
Oriya	: Anisorisia, anasorisa, Hulhulia
Punjabi	: Bugra
Tamil	: Nal valai, Nal velai
Telugu	: Vaminta, Vayinta



Family	Characteristics
Cleomaceae	Herbs or shrubs; inflorescence bracts usually present; leaves usually palmately compound; fruits capsules; nutlets, or schizocarps; seeds 0.5-4 mm, subglobose, triangular, oblong, or horseshoe-shaped, usually not arillate (except Hemiscola); cotyledons incumbent, radicle-hypocotyl elongated, showy zygomorphic flowers and the occurrence of C4 photosynthesis.

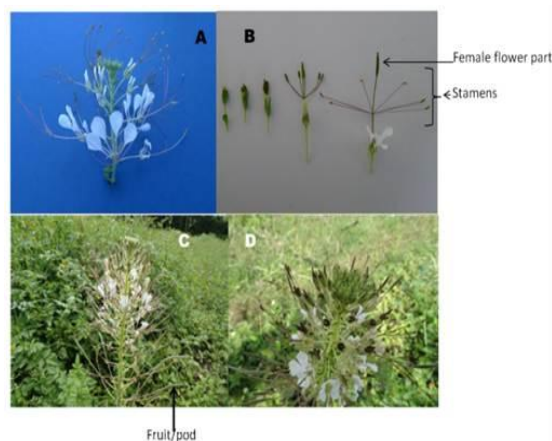


Figure 1. *C. gynandra* inflorescence; A – male flower parts, B – female flower parts at different growth stages, C – sparse type flowers, D – dense flowers. Source: Shilla *et al.*, 2016, WorldVeg-ESA.

Nutritional and Medicinal Importance

Traditionally, *Cleome gynandra* L. has been recognized as a powerhouse of nutrients. It is rich in iron, vitamins A and C, calcium and antioxidants, making it an excellent addition to the diet. Research indicates that consuming *Cleome gynandra* can help improve haemoglobin levels, making it beneficial for human consumption. Apart from its dietary benefits, *Cleome gynandra* is widely used in traditional medicine. It is known to aid digestion, reduce body heat and alleviate joint pain. The leaves, when crushed and applied externally, help in treating wounds, insect bites and skin irritations. A decoction made from the plant is used for fever and inflammation, highlighting its therapeutic potential. Studies also suggest that its bioactive compounds possess antimicrobial and anti-inflammatory properties, which further solidify its value in traditional healthcare (Waithaka *et al.*, 1991).

Additionally, its antioxidant properties contribute to overall wellness by reducing oxidative stress, which is linked to various chronic diseases. Many rural communities have relied on *Cleome gynandra* L. for generations to maintain health and well-being, but its benefits remain largely unexplored in mainstream medicine.

Cleome gynandra is high in beta-carotene, folic acid, ascorbic acid and calcium. It also contains vitamin E, iron, and oxalic acid. Generally, the leaves are about 4.0% protein. 100 g of *C. gynandra* contain around 1.4 g crude fibre, 127–484 mg vitamin C and 0.76 mg zinc, 3.1–7.7 g crude protein. The contents of iron and calcium vary by zone from 1–11 mg, and 213–434 mg, respectively.

Culinary Uses and Potential

Despite its health benefits, *Cleome gynandra* remains underutilized in modern diets. In many parts of India, Africa and Southeast Asia, it is included in meals as a nutritious

vegetable. It can be cooked with lentils, mixed with other greens, or fermented for pickles. Some recipes also involve combining it with groundnuts or coconut to balance its natural bitterness, making it more palatable.

In Kenya and other African countries, it is widely cultivated and consumed as a staple leafy green known as “spider plant”. It is often sautéed with onions, tomatoes and spices to create a flavourful dish. The bitter taste of the leaves is considered an acquired flavour, but when cooked properly, it enhances the overall nutritional value of meals. The seeds of *Cleome gynandra* are also known to be rich in oil and proteins, making them a potential food source as well.

Promoting Awareness and Conservation

While modern diets often overlook such indigenous plants, there is a growing interest in reviving traditional food sources. Encouraging the cultivation and consumption of *Cleome gynandra* can contribute to better health and sustainable agricultural practices. It requires minimal care and thrives in diverse environmental conditions, making it an accessible and beneficial crop.

One of the key aspects of promoting *Cleome gynandra* is to integrate it into food security programs and public health initiatives. Given its ability to grow in arid and semi-arid conditions, it serves as an excellent candidate for improving nutritional intake in regions facing food scarcity. Agricultural researchers and policymakers should recognize its potential and advocate for its inclusion in community farming projects.

Cultivation

Cleome gynandra is normally not a cultivated crop. Leaves are in most cases harvested from the plant found as naturally growing weed. However, some studies on the most suitable cultivation techniques have been conducted.



- ✓ *Cleome gynandra* requires deep, well drained fertile soils. It grows well on loose soils, with high humus content and with pH ranging from 5.5 to 7 (Shilla *et al.*, 2016).
- ✓ In cultivation, propagation of the plant is done by seed sowing. Given the small seed size, the depth of sowing and the preparation of the seedbed are important factors. Seeds can be dispersed unevenly by broadcasting or shallowly drilled in rows spaced around 30 cm apart and around 1 cm deep.
- ✓ Generous and frequent nitrogen-based fertilizers can be applied to delay flowering, prolong vegetative growth and increase number and dimensions of the leaves.
- ✓ To result in a good yield, *C. gynandra* needs adequate soil water content throughout the whole vegetative growing period. Frequent and controlled irrigation is desirable and must be determined depending on soil water retention properties.
- ✓ Harvesting can be done in two distinct ways. The first one consists in complete uprooting of the whole plant and successive separation of the leaves from the stem. Alternatively, multiple harvesting can be done by cutting the higher part of the plant and collecting the upper leaves. This second strategy helps to increase lateral leaves growth and to delay flowering, extending the vegetative period.

CONCLUSION

Cleome gynandra is more than just a weedy plant-it is a valuable resource with immense nutritional and medicinal benefits. Recognizing and utilizing such natural gifts

can significantly enhance dietary diversity and traditional health practices. Instead of dismissing it as a weed, integrating it into everyday meals can lead to a more balanced and health-conscious lifestyle.

To fully harness the potential of *Cleome gynandra*, efforts should be made to conduct further scientific research, promote local cultivation and educate communities about its advantages. With greater awareness and proper utilization, this humble plant can play a crucial role in addressing malnutrition and improving overall well-being.

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