

REVIEW ARTICLE



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A MINI REVIEW ON *CHENOPODIUM ALBUM* LINN.

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ABSTRACT

Vegetables can form the cheapest and most readily available sources of important vitamins, minerals, fibres, and essential amino acids in most developing countries where the daily diet is dominated by starchy staple foods. *Chenopodium album* Linn. (Chenopodiaceae) is an annual shrub which is widely grown in Europe, North America, Asia and Africa and used as a folk medicine. *Chenopodium album* L. (Family Chenopodiaceae), a globally distributed noxious weed that is a large genus widely known as white goosefoot and fat-hen, melde, pigweed, lambsquarters, or local names. It is a nutraceutical product, which is an alternative nutrient source. Apart from alkaloids, trigonelline, chenopodine, potassium and vitamin C, the plant contains essential oils, complete phenol flavonoid glycosides (quercetin, rutin and kaempferol). Nonpolar lipids, phenols, and lignins, alkaloids, flavonoids, glycosides, and saponins are the main class of phytoconstituents. This analysis provides a detailed account of the recorded morphology, phytochemical constituents, medicinal uses to explore this plant's immense medicinal potential.

KEYWORDS: *Chenopodium album* Linn. Morphology, Phytochemistry, Medicinal uses

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INTRODUCTION

Since the dawn of human history, medicinal plants have been part and parcel of human history in the war against diseases, since the dawn of human civilization^[1]. Herbal medicine remains one of the most commonly accessible methods of therapy in the entire population of the world. India is a rich source of wealth for plants and animals, due to its diverse geographical and agro-climatic regions.

Besides the abundant habitats, it holds a rich cultural heritage. While Indian health care systems currently consist of both traditional and modern medicine systems, traditional medicine systems such as Ayurveda, Siddha, Unani and unorganized systems such as folk medicine have been flourished. Ayurveda and Siddha are of Indian origin and constitute approximately 60

percent of the general health care system and 75 percent of the rural Indian population. These two medicine systems use plants, minerals, metals, and animals as medication sources, of which plants are the primary source. About 1500 plant species in Ayurveda and 1200 plant species in Siddha^[2] are believed to have been used for drug preparation^[3].

Plant Profile

Chenopodium album Linn. It is a wild plant distributed widely across the world, comprising more than 250 species^[4]. As per the records, *Chenopodium* in Indian, album may be described by 21 species. Some species are grown as edible vegetables to provide vitamins, fiber, essential fatty acids and minerals to humans. For the grains obtained from the field, some other species were cultivated^[5]. *Chenopodium album* or other *Chenopodium species* had a high nutritional

content, cultivated widely, and eaten as food crops. It is found as weed in croplands, ancient fields, gardens, nursery plots, vacant lots, weedy meadows, construction sites and various waste areas, particularly where the soil has recently been disturbed [6].

Common Names

- English - Fat Hen, Lamb's-quarters, Pigweed
- Hindi - Bathua
- Tamil - Paruppukirai
- Bengali- Chandanbethu
- Sanskrit- Vastukah
- Oriya- Bathua
- Kannada- Kaduoma
- Telugu- Pappukura
- Malayalam- Vastuccira
- Konkani- Chakvit

Taxonomy

Kingdom: Plantae
 Subkingdom: Tracheobionta
 Super-division: Spermatophyta
 Division: Magnoliophyta
 Class: Magnoliopsida
 Subclass: Caryophyllidae
 Order: Caryophyllales
 Family: Chenopodiaceae
 Genus: Chenopodium
 Species: *Chenopodium album* [7]

Origin and Geographical Distribution

Chenopodium album is widely regarded as a globally spread noxious plant, occurring from 70 ° N to 50 ° S, mainly at higher altitudes in the tropics and all African countries. From ancient times to the old and the new world it was well known herb. It has been domesticated and grown as a grain crop in northern India's Himalayan region like Nepal. It is also grown in India, as a typical leafy vegetable. Owing to extensive cultivation its native range is obscure but covers much of Europe. Plants native to East Asia are classified under *Chenopodium*. Collection but mostly different from European specimens. It is widely introduced elsewhere, such as Africa, Australia, Asia, North America, Oceania and now occurs almost everywhere in nitrogen-rich soils, especially in wastelands [6].

Morphology

It is a rapidly growing, very common in temperate regions, growing almost everywhere in nitrogen-rich soils, especially on wastelands. At first it appears to grow upright, to a height of 30-80 cm.

Stems

Rarely slender, angled, often striped green, red or purple.



Figure 1: Stem of *Chenopodium album*

Leaves

Easy, rhomboid, deltoid to lanceolate, upper round, lower dented or irregularly lobed, highly variable in cultivated types, 10-15 cm long, petioles often as long as thick blade, length 1 to 1.3 cm. In appearance the opposite leaves can be very different. At the base of the plant, the first leaves are dented and roughly diamond-shaped, 3-7 cm long and 3-6 cm wide. It was found in dark green, smooth under surface colour. The leaves look waxy-coated, unwettable and mealy, with a whitish coat on the underside.



Figure 2: Leaves of *Chenopodium album*

In *Chenopodium album* leaves, cinnamic acid was studied the effect of selected processing and storage methods on the concentration of ascorbic acid and beta-carotene [23].

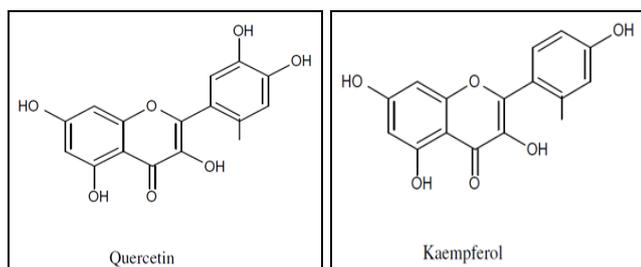


Figure 5: Chemical Constituents of *Chenopodium album*

Medicinal Uses

The plant is popularly called Bathua in India and is found abundantly during the winter season. You can eat the leaves and young shoots as a vegetable leaf. *Chenopodium album* has certain gentle medicinal properties and is a safe and very nutritious addition to the diet. *Chenopodium album* has anthelmintic, antiphlogistic, antirheumatic, preventive, laxative, odontalgic, etc. *Chenopodium album* used to treat rheumatism, insect bites, sunstroke, urinary issues, issues with the skin etc.

This plant's leaves and young shoots are used in such dishes as soups, curries, and paratha. *Chenopodium album* used to treat specific symptoms that are due to nutritional deficiencies. It is also said that it has sedative and refrigerant properties and people used the leaves of the poultice to soothe burns. Many wild birds, including chipmunks and squirrels, consume the seeds and the plants are used as fodder.

CONCLUSION

C. album is an excellent source of essential nutrients and has medicinal properties. It can be integrated into various extruded food products, making them more nutritious, safer and consumer oriented. For the production of useful drugs, the active constituents may be separated and tested further. Although this plant has been involved in phytochemical research for several years, further work needs to be done on its isolation and characterization. Phytochemical studies have been recorded but it still needs to advance. If the ethnobotanical arguments are properly tested, then it can provide effective remedies and can assist the human race in various ailments.

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CONFLICT OF INTEREST

None

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