



A REVIEW OF CHEMICAL CONSTITUTIONS AND TRADITIONAL USES OF CLEOME GYANDRA

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ABSTRACT:

Throughout India, cleome gynandra is a widely accessible plant that spreads as a weed in agriculture fields and common bare areas. It is utilised in many different nations throughout the world to treat a variety of disorders using their traditional medical systems.

and it is also used in various traditional culinary systems for its remarkable nutritional and antioxidant properties. Traditional healers in India alone utilise it to treat a wide range of illnesses, including worm and protozoal infections, irritable bowel syndrome, and epilepsy. This plant is very commercially significant and is readily produced and farmed because to its high protein, amino acid, and mineral content.

In this review article through various established facts regarding the medicinal applications of cleome gynandra has been cited regarding the Immunomodulator, Antioxidant, Ant carcinogenic, Analgesic properties etc. Considering all of these known characteristics, cleome gynandra shows promise as a medication in the future. The potential antidiabetic medication from cleome has been explored, taking into consideration the important mineral content, free radical scavenging abilities, and polyphenolic content.

Keywords: Cleome gynandra, chemical constituents, therapeutic uses^[1].

INTRODUCTION :

Cleome gynandra is a plant that grows all over the world and is used medicinally. It spreads like a weed in open grasslands, roadside ditches, and paddy fields. It is never farmed in India; instead, it grows everywhere on its own. Every Indian state has a different species of Cleome. This page provides a brief overview of the plant's biology, pharmacology, biochemistry, folklore, traditional medical uses, and several potential medical and therapeutic uses that have been demonstrated via numerous laboratory studies and publications.

Other ancient medical books as well as the Indian Ayurvedic pharmacopoeia reference the therapeutic use of this plant. It is a main ingredient in Narayana Churna, an Ayurvedic remedy.

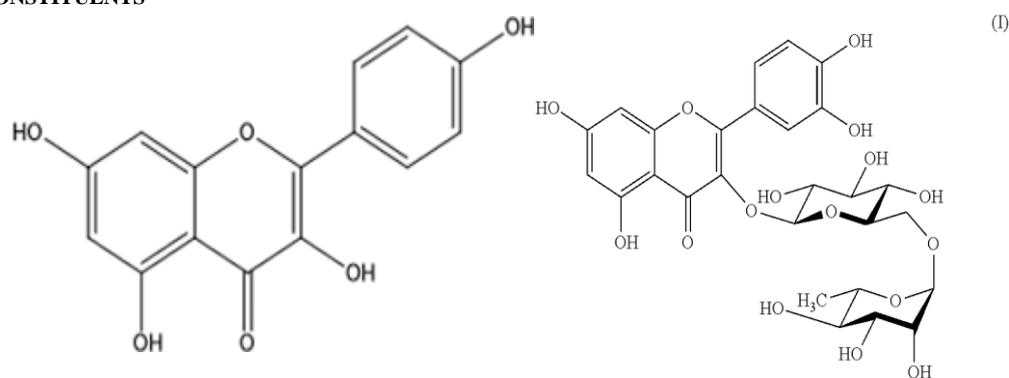
In Ayurveda it is used as an Anthelmintic, in ear diseases, pruritis and several other diseases like gastro intestinal disorders and gastrointestinal infections etc.^[2,3]

Taxonomic position of Cleome gynandra L. is as follows

- Kingdom: Plantae
- Division: Angiosperms
- Class: Dicotyledones
- Order: Capparidales (Capparales)
- Family: Cleomaceae
- Genus: Cleome
- Species: gynandra^[3]



CHEMICAL CONSTITUENTS



The pharmacological characteristics of *Cleome gynandra* have been demonstrated to be attributed to the phytonutrient components found in the plant extract. The majority of these plants' pharmacologically active phytochemicals are secondary metabolites produced during cellular metabolism.

Cleome gynandra was found to contain a number of phytochemical secondary metabolites through qualitative chemical analysis and they include saponins, flavonoids, tannins, alkaloids, cardiac glycosides, terpenoids and polyphenols^[4].

The plant also had several sulphur or thiol compounds that could probably have the effect of scavenging of free radicals in cells by regenerating reduced glutathione or by direct contact with free radicals and, as a result, possess antioxidant properties. This was found by GCMS activity, and the thiol molecule 2-nhexylthiol-5-methyl-imidazole is one example of this.

The *Cleome gynandra* also contained flavonoids. Flavonoids have also been reported to have strong antioxidant effect and could also have anti-inflammatory, anti-hepatotoxic (hepatoprotective), anticancer, antimicrobial and antiviral properties^[5]. Flavonoids like Quercitrin which have strong antioxidant properties have been identified in previous studies involving *Cleome gynandra*^[6,7].

Cardiac glycosides which were also highly present in the spider plant have an effect on the heart by increasing muscle contraction. Cardiac glycosides like digoxin isolated from digitalis plant are also used in treatment of heart disease^[8].

TRADITIONAL USES

Gulma (Any tumour, lump or diverticulosis), Asthila (Prostate enlargement), Krmiroga (Worm infection), Kandu (Pruritus), Karnaroga (Ear diseases)^[9].

Many nations employ the leaves and seeds of the cat's whiskers in their traditional medical practices. Purseglove (1943); Anonymous (1956a, 1956b); Baruah and Sarma (1984); Kumar and Sadique (1987); Kokwaro (1976); et al.

The following uses have been reported.

- Leaf sap can be used topically as an analgesic, especially for headaches.
- Sap from pounded young leaves is squeezed into ears, nostrils and eyes to treat Epileptic fits and earache.
- A decoction or infusion of boiled leaves and/or roots is administered to: - facilitate childbirth in pregnant women - treat stomach-ache and Constipation
- Treat conjunctivitis
- Treat severe thread-worm infection
- Relieve chest pains.
- Arthritis is treated with the leaves.
- The leaves have anti-inflammatory properties.
- The bruised leaves are rubefacient and vesicant, and are used to treat headache, neuralgia, rheumatism and other localized pains.

- They are rubbed on the affected Parts of the body, or applied as a poultice. But, it's important to remove the lotion carefully to avoid blisters.
- In Taiwan, cleome gynandra is used to treat rheumatoid arthritis, malaria, diarrhoea, and gonorrhoea.
- In India The plant has been traditionally used as an anthelmintic and rubefacient.
- To stop sepsis, leaves are placed externally to the wounds. Additionally, the herb is used to cure tumours, piles, rheumatism, and malaria.
- The decoction of the root is used to treat fevers ^[10,11].

CONCLUSION :

The studied plant *Cleome gynandra* also contains important phytochemicals Composition of important medicinal value like saponins, flavonoids, tannins, alkaloids, cardiac glycosides, terpenoids and polyphenols as well as some thiol compounds which have important pharmacological properties in animals Additionally, the plant *Cleome gynandra* may be utilised as a significant nutritional supply of several necessary elements, including the antioxidant vitamins C, E, and beta carotene. and play a role in prevention of cancer and haemolytic anaemia in humans. To identify the most significant phytochemicals with therapeutic potential and their efficacy as key therapeutic agents in the treatment of particular illnesses, additional study is necessary. the plant toxicity should also be determined. The plant can also be used as a cheap source of saponins where the steroidal part of the molecule can be used in the synthesis of steroid hormones and other synthetic steroids with important physiological effect. Finally, more research needs to be done on toxicity and dosage of the different phytochemicals and heavy metals.

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