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Review Article

A Comprehensive Review on Calotropis Gigantea Plant Extract

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ABSTRACT

Plants used by peoples for medical treatments from ancient time and are still in used as traditional medicine and also practiced today. There are several plants having pharmacological action. The modern allopathic medicine having serious complication at therapeutic dose. Traditional herbal medicines play a significant role in management and treatment of diseases and are getting more visible attention in worldwide health debates. Traditional systems of medicine are practiced in many countries around the globe. There is a lot of reason that the people used herbal based medicine. Background: Calotropis gigantea, belonging to the Asclepiadaceae family, is a perennial herb and used in the field of traditional medicine for a long duration. [1][2] Objective: Calotropis gigantea is a perennial herb known for its applications in traditional medicine. It has been efficiently used in Ayurveda, Unani, and Siddha medicinal systems for years. All the plant parts have been used as medicine owing to its analgesic, anthelmintic, astringent, anti-inflammatory, wound healing, sedative, anti-asthmatic, antimicrobial, antioxidant, procoagulant, hepatoprotective, hypoglycemic, and pregnancy interceptive properties. For instance, leaves, latex, flowers, stem bark, root of the plant are used as expectorant, depilatory, in leprosy scabies of the scalp, eruptions on the body, piles, asthma, liver and spleen enlargement, and painful joint swellings.[2][3]

INTRODUCTION

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Calotropis Gigantea

Synonym: asclepias gigantea, crown flower
Common name: milkweed, ivory plant Family: apocynaceae Arka (Calotropis gigantea) an important drug of Ayurveda is known in this country from the earliest time. It is mentioned by the earliest Hindu writers and the ancient name of the plant which occurs in the Vedic literature was Arka alluding to the form of leaves, which was used in the criticalities. There are two common species of Calotropis, viz. Calotropis gigantea (Linn.) R.Br. and Calotropis proceri (Ait.) R. Br described by the Sanskrit writers.[8] C. gigantea is a common wasteland weed and commonly known as giant milkweed. This plant is a native of Bangladesh, Burma, China, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand and Sri Lanka. C. gigantea is frequently available in India and used for several medication purposes in traditional medicinal system.[9] Most recently C. gigantea is scientifically reported for several medicinal properties (Figure 1) viz. the flowers are reported to possess analgesic activity , antimicrobial and cytotoxic activity[10] 1} Leaves and areal parts of the plant are reported for anti-diarrheal activity 2 } anti-Candida activity[11] 3} antibacterial activity 4} antioxidant activity[13] 5} Roots are reported to contain anti-pyretic .6} cytotoxic activity [7] In India, medicinal plants constitute a key source of traditional medicine. India is recognized as the "Botanical Garden of the World". Medicinal and aromatic plants include a

significant variety of chemical elements that are the primary source of therapeutic medicines used to treat human suffering. As a result, a review of C. gigantea's ethnopharmacological applications, chemical components, and pharmacology has been prepared. The review is organized into three parts: ethnopharmacology, chemical ingredients, and pharmacological studies. Section pharmacological reports describe work on C that has been scientifically published. gigantea for a variety of pharmacological actions. [4],[5][6]

- To determine whether traditional C. gigantea claims have been scientifically confirmed via preclinical and clinical investigations.
 - To see if reasonable procedures were used to separate bioactive chemical compounds from C. gigantea after bioactivity-directed fractionation.
 - To determine whether the method of action of C. gigantea bioactive extract or fraction has been developed.
 - To determine whether any structure-activity connection studies on chemical compounds extracted from C. gigantea have been conducted.
- Calotropis gigantea L. [Synonym: Giant milkweed; Asclepiadaceae Family]: Milkweed, Akand, Bowstring Hemp, Akado, Ark, Arka, Erukku, LalAkra, Akondo, Moto-aak, and Verukku are some of the common names for the plant.[4] The genetic resources that are being safeguarded and used for various reasons include those pertaining to food, fibre, fuel, fertiliser, febrifuges, and several other applications .

Bioactive compounds target multiple signaling pathways in cancer development and progression, such as cell proliferation, apoptosis, angiogenesis, and metastasis. *C. gigantea* compounds hold promise as novel therapeutic agents for cancer treatment through their ability to modulate these pathways.

METHODOLOGY:

The relevant literature was selected from various scientific databases like Journal and Research (<http://www.ijrpb.com>), Journal and Novel Research (<http://www.ijnrd.org>), Journal OF Phytopharmacology(<http://www.phytopharmajournal.com>), Journal OF Phytochemistry (<http://www.phytojournal.com>), IJPPR (<http://www.ijppr.humanjournal.com>), JETIR (<http://www.jetir.org>), IJCRT (<http://www.ijcrt.org>) and web of science (<http://apps.webofknowledge.com>) by using specific keyword like - milkweed,

Ethno Botanical Description

A tall shrub that can reach heights of 2.4 to 3 meters; its back colour of the object in question is a shade of yellowish white, and its surface exhibits a wrinkled texture. Additionally, the branches of this object are robust and possess a cylindrical shape and mostly (Particularly the younger individuals, they are covered in a delicate layer of closely pressed cotton-like hairs. The dimensions of the leaves range from 1 to 20 centimetres in length and 3.8 to 10 centimetres in width. The leaves are sessile, without a stalk or petiole or approximately so, oval and elongated or superficially elongated and pointed; Thick, glaucous-green, with delicate cottony tomentum underneath and above; thin, cordate base. Flowers that is odourless, purple, or white. Calyx split to the bottom; sepals oval, acute, cottony, the dimensions of the object are 6 by 4 millimetres. The corolla is at least 2 cm in length, with segments ranging from 1.3 to 1.6 cm. These segments are deltoid-ovate in shape, sub-acute at

the tip, and exhibit revolute and twisted characteristics as they mature. The corona lobes are 3 cm long and have a pubescent surface along the slightly thickened border. The apex of the lobes is rounded, with two obtuse auricles located directly below it. Follicles are 9-10 cm long. Green, long, wide, thick, meaty, ventricose. Seeds are abundant, 6 by 5 mm in size, roughly oval, flattened, thinly margined, tomentose, and brown in colour. 2.5–3.2 cm in length [31]

Description Of the Plant

- Taxonomical classification: -[11][16]
- Kingdom: Plantae
- Subkingdom: Tracheobionta (Vascular plants)
- Super division: Spermatophyta (Seed plants)
- Division: Magnoliophyta (Flowering plants)
- Class: Magnoliopsida (Dicotyledons)
- Subclass: Asteridae
- Order: Gentianales
- Family: Asclepiadaceae (Milkweed family)
- Genus: Calotropis R. Br.(calotropis)
- Species: Calotropis gigantea (L.)

Vernacular Names: -[12][16]

- English: White Madar
- Hindi: Aka, Mandara
- Kannada: Yekada gida
- Malayalam: Vella Erukku
- Sanskrit: Svetarka
- Telugu: Jilledi puvvu
- Tamil: Erukku
- Manipuri: Angko

Botanical description:[13]

- Bark C Branches: The bark is thick, rough, and corky, with a yellow-brown colour; the twigs are green and fleshy, with a tomentum covering (white fur-like hairs).
- Leaves: Leaves are opposite-decussate, simple, ovate to obovate with 4-6 pairs of subopposite nerves prominent on the abaxial surface, an acute apex, sessile (almost decurrent) base pale green colour, and quite large which about 30×25cm.



□ Inflorescences: Inflorescences arise from the base of the leaves in pedunculate (c.7cm) cymes of 3-20.

□ Flowers: Flowers have five small triangular dirty white sepals, five thick ovate petals (c1cm x1cm) that are white at the base and purple at the tips, and five purple-tipped stamens that surround a white five-lobed stigma

□ Fruits: Fruits consist of green, spongy ovoid fruits (follicles), up to 15cm long by 10cm wide. They split open to release plumed, papery light brown seeds with a pappus of white filaments up to 6cm long on one side. The main flowering period would be from March to October.

Macroscopical Characteristics:[14][15]

It includes the identification of plant

□ Root: The root occurs in the entire condition. The bark is separated from the wood 0.5-2.0 cm. in diameter bearing rootlets with diameter varying from 0.2 to 0.5 cm. externally whitish-grey in colour, wrinkled in the fresh condition, plenty of whitish latex exudes from cuts or wounds in the bark. The fracture is incomplete.

□ Leaf: Simple, opposite, sub-sessile, slightly thick, fleshy, coriaceous, 10-15 cm. long and 4.5 to 6.5 cm. broad, broadly cuneate, obovate or obovate oblong, slightly cordate and auricled at base with tuft of short simple hairs on the upper side near place of the attachment to the petiole. The tender leaves are covered with ashy gray pubescence. Mature leaves are nearly smooth or even glabrous and pale green.

□ Flowers: Regular, bisexual, liliac or pale rose, purple or light greenish-yellow, with a faint odour. They are arranged in simple or rarely compound cymose corymbs at the ends of laterally placed or interpetiolar peduncles arising from the nodes' alternate sides. An involucre of several small oblong pointed scaly caducous bracts surrounds each cluster. The flower buds are ovoid.

□ Calyx: Five lobes broadly ovate with small fleshy teeth like glands within the base.

□ Corolla: Regular, gamopetalous, pale rose-purple or liliac, subcordate to broadly subcampanulate with a short tube and five broad ovate, lanceolate, valvate, spreading lobes.

□ Stamens: Five, inserted at the base of the corolla. Filaments united to form a large staminal tube that is completely adnate to, but slightly shorter than the column. The appendages are fleshy.

□ Root bark: The tap roots have prominent tops with rounded heads and the rest of the portion spirally curved. These tough roots are greyish white in colour and have sap exudations where the bark has been cut. The bark of the older roots has cracks in it. The bark is yellowish grey on the outside and white on the inside. The outer cork portion is spongy and rough, whereas the inner bark portion is smooth and mucilaginous. The dried bark is bitter to taste, with prominent tops with rounded heads and the remainder spirally curved.

Nutritive and growth contrasted analysis:

Calotropis has a high level of drought tolerance and demonstrates a certain degree of salt resistance. It thrives in its natural habitat at elevations of up to 900 metres above mean sea level (msl) over the whole country. The species prefers sandy soils that have been disrupted, and thrives in regions with an annual precipitation range of 300-400 mm. The plant in question readily establishes itself as a source of annoyance in areas characterised by deteriorated roadsides, margins of lagoons, and overgrazed native grasslands, mostly owing to the dispersal of its seeds by wind and animals. This particular species prefers and tends to dominate in locations characterised by abandoned agricultural practices, namely in areas with unsettled sandy terrain and little precipitation. The phenomenon is often seen as indicative of excessive cultivation practices.[32]



Habit	The plant in question is a miniature tree or shrub that has the potential to reach a maximum height of 2.5 metres, with some specimens perhaps reaching up to 6 metres tall
Roots	The plant has a straightforward growth pattern, with several branches originating from the base. The bark is deeply fissured and possesses a cork-like texture. The branches are somewhat fleshy and covered in a dense layer of white hairs. Over time, the plant gradually loses these hairs and becomes smooth. The plant emits a white latex secretion from each component that is cut or damaged
Leaves	The blade of the leaf is ovate-ovate to ovate, measuring 5-30X2.5-15.5 cm. The apex is abruptly and momentarily sharp, while the base is cordate. The edges of the leaf are whole, and the leaf itself is fleshy. When young, it is covered in a white tomentose layer, but as it matures, it becomes glabrous and glaucous
Flowers	The specimen exhibits bractation, hermaphroditism, actinomorphy, pentamerism, dioecy, petiolation, and has stalks of 1 to 3 cm in length.
Floral Characteristics	The inflorescence is characterised by its dense arrangement of several flowers, forming an umbellate structure. It is attached to the nodes and may be seen either at the axillary or terminal positions.
Calyx	The sepals are polysepalous, consisting of five lobes that are temporarily fused at the apex. They have a glabrescent characteristic and display quincuncial aestivation. The total number of sepals is five
Corolla	Aestivation with five petals, gamopetalous, five lobed, and twisted.
Fruits	A sub globose to obliquely oval follicle that is straightforward, fleshy, inflated, and has a diameter of at least 10 cm.
Seeds	The specimen consists of many small, flattened, obovate structures measuring 6×5 mm. These structures are densely packed and adorned with elongated, silky white pappus.

Nutritive and growth contrasted morphological analysis of selected plant

Phytochemical composition :

Calotroposides A-G seven the compounds under investigation include oxypregnane-oligo glycosides and cardiac glycosides. The root and bark, two isomeric crystalline alcohols, namely giganteol and isogiganteol, together with cardenolides, have been identified [9]. Akundarin is present in latex, which also includes 0.45% uscharin, 0.15 calotoxin, and 0.15 calactin. Moreover, latex is composed of many compounds such as calatropeol, calotropeol, amylin, and calcium oxalate [10]. Furthermore, it exhibits the ability to generate nitrogen and sulphur when interacting with fish, as well as the production of the cardiac toxin gigantol [11]. Glutathione and an

enzyme that breaks down proteins related to papain are also found in tiny amounts in latex.

Leaves: calatropeol, beta-amylin, saturated and unsaturated fatty acids, hydrocarbons, acetates, benzoates, and a combination of tetracyclic triterpene molecules [10, 11]. Beta- amylin, betaamylin, taraxasterol, sitosterol, beta-amylin methylbutazone, beta-amylin methylbutazone, usharin, gigantol, calcium oxalate, alpha and beta-calatropeol, beta- amylin , betaamylin, Amylin acetate, taraxasteryl acetate, lupeol acetate B, gigantursenyl acetate A, and gigantursenyl acetate B are among the substances discussed [12, 13]. The activities of the subject are often ascribed to many compounds, including flavonol glycosides, akundarol, uscharidin, calotropin, frugoside, and Calotroposides A through G [14]. The scientific research also describes calactin, calotoxin,

calotropagenin, proceroide, syriogenin, uscharidin, Uscharin, uzarigenin, and voruscharin [15]. Calotropis gigantea has yielded flavonoids [16], triterpenoids are, alkaloid substances, the compounds included in the material include steroids, glycosides, saponins, terpenes, enzymes, alcohol, resin, fatty acids and esters of calotropeols, volatile fatty acids with long chains, glycosides, and proteases [17, 18]. Enzymes called cysteine proteinase and aspartic proteinase were discovered in the laticifer fluid of Calotropis [19, 20]. Because of the existence of these elements, the plants are resistant to pathogenic organisms. Insects, specifically found in the leaves, are known to have a high presence due to the abundant flow of latex. The latex of the plant has a significant concentration of lupeol, calotropin, calotoxin, and uscharidin, which includes a protein component. [21] In the study, conducted a comprehensive analysis of the primary phytochemical constituents present in several parts of the Calotropis plant,

namely the flower, bud, and root [22]. The researchers examined a range of chemical classes, including alkaloids, carbohydrates, glycosides, phenolic compounds/ tannins, proteins and amino acids, flavonoids, saponins, sterols, acid compounds, and resins [23]. Calotropis gigantea, alkaloids, and glycosides. Stem bark: giganteol, amylin, and calotropeol [12]. Calotropis gigantea the compounds incorporated throughout the botanical structure Calotropis procera is known to contain many chemical compounds, including n-calotropeol, amylin, cardioactive glycosides, mudarine, asclepin, bitter resins akundarin, and calotropin. All of these components are included inside the structure of flowers [8]. The study focused on assessing the detrimental impact of these components on the human organism and mouse cell lines [24, 25]. The numerical range of the observed selectivity of the cell line showed similarities to the selectivity of cardiopulmonary glycosides, namely digoxin and ouabain.

Sr.no	Class of compound	Part of plant {leaf}	Test performed
1.	Glycoside	+	Keller killani test
2.	Tannins	-	Ferric chloride test ,acidic acid solution test
3.	Alkaloids	+	Dragendroff test ,Mayer test
4.	Reducing sugar	+	Fehlings test , benedict test
5.	Protein	+	Xantho Protein Test
6.	Steroids	+	Salkowski test ,
7.	Carbohydrate	+	Molisch test

Phytochemical components in Calotropis gigantea. The observed effects of these substances on human cell lines indicate their potential for posing a risk, but no such effects have been seen on mouse cell lines. [26] Calotroposides A are newly discovered oxy pregnane aminoglycosides that have been extracted from the source of C. gigantea, a medicinal plant indigenous to Indonesia. The chemical structures of these compounds have been successfully identified.

Pharmacological activity:

1} Antidiarrheal activity:

The antidiarrheal activity of a hydroalcoholic extract of Calotropis gigantea aerial portion was tested in a castor oil-induced diarrhoea. The enteropooling method was used to investigate the weight and volume of intestinal content caused by castor oil. [25] The gastrointestinal transit rate was expressed as the percentage of the longest distance traversed by the charcoal divided by the total length of the small intestine. [17] The plant extracts of 200 and 400 mg/kg IP significantly (P 0.001) suppressed weight and volume of intestinal content in the same way as atropine (3 mg/kg IP),



and there were significant decreases in faecal output and frequency of droppings when compared to control rats. 45 Another research was conducted utilising an aqueous extract of the root bark of *Calotropis gigantea* in two groups[25]

2} Analgesic activity:

The analgesic effect of an alcoholic extract of *Calotropis gigantea* flowers was investigated in chemical and thermal models in mice. In the acetic acid induced writhing test, dosages of 250 and 500 mg/kg reduced the number of writhes by 20.97% and 43.0%, respectively. The paw licking time was delayed using the hot plate approach. The analgesic effect was noticed after 30 minutes after dosage administration and peaked after 90 minutes.[17] This study assessed the analgesic potential of dry latex (DL) from *C. gigantea*. Compared to an oral dose of aspirin (100 mg/kg), the impact of DL at a dose of 415 mg/kg against acetic acid-induced writhing was more pronounced. In the tail-flick model, DL {830 mg/kg} caused negligible analgesia that was comparable to aspirin.[26]

3} Anti-inflammatory activity :

The anti-inflammatory activity was evaluated using carrageenin-induced kaolin induced rat paw oedema for acute and cotton pellet granuloma, adjuvant-induced arthritis model for chronic inflammation. Antipyretic activity was carried out using yeast induced pyresis method. Phenylquinone--induced writhing method in mice was used for analgesic activity. Test compounds exhibited variable anti-inflammatory activity and peak activity of the test compounds were reached at 2 h. The residual anti-inflammatory activity of alkaloid fraction of *Calotropis gigantea* suggests either a greater malic enzyme of a filarial worm *Setariadigitata*: some properties and effects of drugs and herbal extracts [25] *Calotropis gigantea*'s anti-inflammatory effect was demonstrated by using the albumin denaturation procedure. The percentage inhibition of the

denaturation caused by the test on medication was comparable to that produced by Ibuprofen (85.71%),and indicates that the test drug had anti-inflammatory effects. [17]

4} CNS activity:

Alcoholic extract of peeled roots of *Calotropis gigantea* R.Br. (Asclepiadaceae) was tested orally in albino rats at the dose level of 250 and 500mg/kg bodyweight for CNSactivity.

Prominent analgesic activity was observed in Eddy's hot plate method and acetic acid induced writhing's. The paw licking time was delayed and the numbers of writhing's were greatly reduced. Significant anticonvulsant activity was seen as there was a delay in the onset of pentylenetetrazol induced convulsions as well as decrease in its severity. The extract treated rats spent more time in the open arm of EPM showing its antianxiety activity [25] The activity of the locomotor system decreased. The motor coordination falls off period was also shortened. Due to the extract's sedative effect, it was shown that

pentobarbitone-induced sleep was potentiated. No deaths were reported up to the dose of 1 g/kg. These findings demonstrate the extract's analgesic, anticonvulsant, anxiolytic, and sedative effect.[26]

5} Wound healing activity:

Calotropis gigantea was chosen for study of its Guinea pig wound healing capacity based on its traditional use. In the animals, 20 l of a sterile 1.0% plant latex solution was applied topically. By greatly boosting collagen, DNA, and protein synthesis as well as epithelization, latex significantly accelerated the healing process. In rats with pyloric ligation, Tsala et al. investigated, and considerable protection was seen in Guinea pigs with histamine induced duodenal ulcers. *C. gigantea* root bark extract was tested for its ability to speed up the healing of wounds in Wistar albino rats. For excision wound healing models, extract was applied topically to the rats; for incision wound healing models, extract was administered



orally in doses of 100, 200, and 400 mg/kg. The findings show that extract administration sped up rat wound healing [25] Ageing is one such factor that has a direct impact on wound closure, and patients suffering from obesity and diabetes are at a higher risk of developing chronic wounds which may account for other serious health conditions [27]

6) Antioxidant Activity:

The antioxidant activity of *Calotropis gigantea* root extract in vitro was studied using the 2, 2-diphenyl-1-picrylhydrazyl and fluorescence recovery after photobleaching methods.

Because of the presence of both methods, the extract has considerable antioxidant activity when compared to ordinary ascorbic acid. high concentration of different phytochemicals [17]

7) Anti -asthmatic activity:

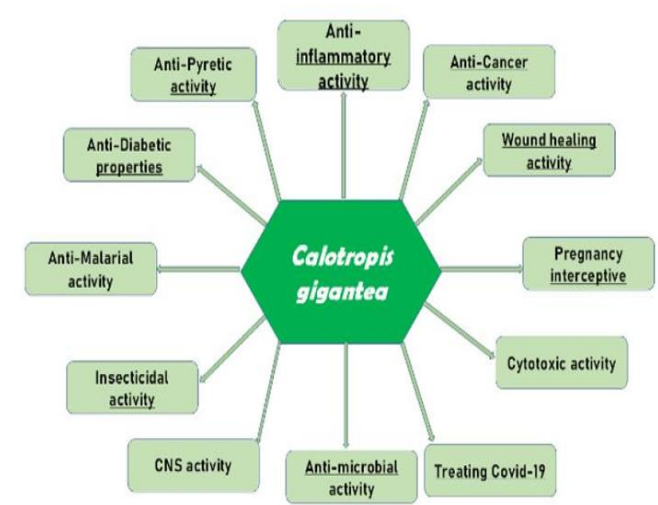
Calotropis gigantea demonstrated anti-asthmatic efficacy in OVA-induced asthma. Rats were sensitized and then exposed to OVA. *Calotropis gigantea* was tested at doses of 100, 200, and 400 mg/kg p.m. on various bodily cells, enzymes, and histopathological alterations. *Calotropis gigantea*

at 200 and 400 mg/kg inhibited eosinophils, neutrophils, lymphocytes, and total leukocyte counts in bronchoalveolar lavage fluid significantly ($p < 0.05$). Because of its anti-inflammatory, antilipoxygenase, and antioxidant properties, this plant may prove to be a promising medicinal medication for the treatment of asthma. [28]

8) Anticancer activity:

Anticancer properties Treatment with anhydrosophoradiol-3-acetate (A3A) derived from the flower of *Calotropis gigantea* reduced viable tumor cells and body weight increase, as well as changed hematological (Hb, RBC, and WBC) and biochemical parameters.[17]

9) Hair development activity: The effects of *Calotropis gigantea* with *Hibiscus rosa Sinensis* (HRSF) and polyherbal formulation (HCF) containing both plants on hair growth initiation and promotion in albino rats were investigated. The findings and observations from the study were compared to Minoxidil. *Calotropis gigantea* demonstrated potential hair growth activity, however, it was less than other treatments.[17]



Medicinal Uses of Plant Parts [17]

Parts Used: Root, root-bark, leaves, juice and flower. Flowers are considered digestive, stomachic and tonic. .

juice have emetic, diaphoretic, alterative and purgative properties.

Root-bark is alterative (promotes secretion), tonic, antispasmodic, expectorant and in large doses emetic. - This drug increases secretions and has a sedative action on the muscular fibres of the intestine, allaying all pain diaphoretic. irritation and thus relieving all dysenteric symptoms.

In intermittent fevers it is used as antiperiodic and The drug is also useful in the skin diseases such as Elephantiasis and leprosy because the drug stimulates the capillaries and acts powerfully on the skin. Milky juice is a violent purgative and gastrointestinal irritant. It is used for criminal purposes for inducing abortion or causing the death of new born infants, by forcing it down the throat or applied locally, usually a smeared with the juice is pushed up into the uteri and left there until uterine contractions are induced. Some parts of India it is also used as a cattle poison. All parts of the plants are considered to have valuable alternative properties when taken in small doses.

Dose:

Juice – 1-2 gms

Root-bark – 1-5 gms

Juice of the leaves – 1-5 gm

Medicinal uses of plant :[17][26]

Uses in Ayurveda and Siddha Preparation:

Flowers – Aphrodisiac, laghu, dipanam, pachanam, in aruchi, swasam, kasam.

Red flowers – Madhura, rasam, tiktarasam, kaphaharm, grahi, in Kushtam, asaras, krimi, gulmam, sodam.

Milk – Ushnam, tikshnam, laghu, snigdam, indication in kushtam

Uses in Unani Preparations:

Hot 40, dry 40, caustic, balgham, piles, aches, skin, dropsy, anthelmintic.

Leaves and branches: - Hot 30, Dry

30, resolvent, paralysis, anesthesia, toxic, asthma

Ethnomedicinal Use:

Calotropis gigantean has been widely used for its ethnomedicinal uses are following:

Like, Anti-Inflammatory: The leaves are used in poultices to reduce swelling and inflammation.

Analgesic: Traditional remedies often utilize its part to relieve pain, and joint pain also , muscle issues.

Respiratory ailments: The plant is used to treat cough, asthma, and bronchitis due to its expectorant properties.

Digestive issues: Infusion of the leaves is sometimes employed for treating stomach disorders.

Fever Reduction: Infusions made from the plant are traditionally used to lower fevers.

CONCLUSION: Calotropis gigantea is commonly distributed in India, Family Asclepiadaceae commonly known as Madar in Hindi is a perennial herb with a long history of use in traditional medicines. This review include the Pharmacological activity of this plant. Antibacterial activity, Antidiarrheal activity, Central nervous system activity, Wound healing activity, Antitumor activity ,the plant components such as root, root bark, leaves, flower, and milk are used to treat a variety of human diseases the pharmacological activities , therapeutic uses of C. gigantea is to control variety of disorders, by using natural sources .Herbs provide many diseases such as anti-cancer, anti-viral and properties. Herbs are an excellent alternative to antibiotics in the treatment of infectious diseases, with more antibacterial effects as well as various antifungal and antiviral actions.

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