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"CELOSIA ARGENTEA LINN LEAF: A REVIEW ON ITS PHARMACOLOGICAL ACTIVITIES"

Sravanthi¹, Nikhitha¹, Pradeep¹, Tejaswi¹, Ayesha Rusqar²

¹Student,SSJ College of Pharmacy, Hyderabad, Telangana, India ²Assistant Professor,SSJ College of Pharmacy, Hyderabad, Telangana, India.

ABSTRACT:

India for the reason that ancient times. In conventional medicine, Celosia argentea Linn. Is used notably to deal with a variety of ailments, consisting of fever, diarrhea, mouth sores, itchy wounds, jaundice, gonorrhea and irritation. According to a literature review of traditional Indian medicine books and journals, Celosia argentea Linn. Possesses several healing advantages. The plant's leaves, stem, and roots have all been mentioned to have therapeutic homes, and pharmacological studies have examined the plant's hepatoprotective, antidiabetic, and anticancer homes. Nevertheless, this plant has been the challenge of some distance too many scientific investigations. For investigating these traditional packages. The pharmacological activity and traditional programs of Celosia argentea Linn. are the topics of this document.

Keywords: pharmacological activities, medicinal uses.

1. INTRODUCTION:

Medicinal flora are increasingly identified by means of studies at educational institutions and their crucial role in maintaining community health and safety. The use of herbal remedies for variety of diseases and infections goes back to the dawn of civilization. Traditional medicines is inspired by herbal treatment and they are essential for the advancement of modern pharmacology. The WHO state that a significant portion of the world's population relies on natural medicinal flowers, animal products, and variety of microbes for health, with side effects.

Celosia argentea L., an herbaceous species within the family Amaranthaceae, derives its recognized name from the Greek term "kelos," meaning "burned," which refers to the flame-like appearance of its inflorescences. Commonly known as cockscombs or flower brains, these inflorescences may alsoexhibit crested or velvet-like characteristics, particularly noted in Mexico

This annual herb is often employed as a leafy vegetable in the rainforest regions of Africa. In contrast, in India and China, it has more frequently been identified as a troublesome weed. Celosia argentea is distinguished by its vibrant colors and traditional uses. As a tropical species, it flourishes in full sunlight and necessitates well-tilled soil for optimal flowering. The wild variant of Celosia argentea, sometimes referred to as C. triguna, is commonly utilized as a potherb in the savanna regions of tropical Africa. In English, it is known by various names.

In addition to celosia, silver cock's comb semen, and quail grass, this plant is known in India by various local names that reflect regional and cultural differences, such as sitivara, vitunnaka, sunishannaka (Sanskrit), Indivar, surveil, and Safed murgha (Hindi), along with annesoppu and kanne hoo (Kannada). The plant is characterized by its simple leaves that are arranged in a spiral pattern, often adorned with pinkish or white flowers, while its fruits are round and contain black seeds. Research on genetic diversity has been conducted on sixteen populations of C. Argentea.

1.1. Taxonomy:

Kingdom:Plantae Phylum:Tracheophyte Division:Magnoliophyte Superdivision:Spermatophyte Clade:Angiosperms Order:Caryophyllales Subfamily:Amaranthaceae Genus:Celosia Species:Argentea Synonyms: comb, kombda, kurdu, garkha, gunuguthree.

1.2. Geographical distribution:

India: Across the entirety of India Other countries: Southeast Asia, Bhutan, China, Nepal, Japan, tropical Africa, and Korea, found at altitudes between 500 and 1600 meters.

1.3. Leaf morphology:

Leaf association : spiral alteration Leaf bases : cuneate Leaf apices : acute Leaf type : simple Leaf margins : entire Leaf shape : elliptic Observations regarding the leaf mot

Observations regarding the leaf morphology of Celosia argentea indicate that the phyllotaxy is variable; the leaves are easily identifiable; the margins are entire, and the venation is reticulate; the overall form is elliptic. The surface is glabrous with stipules absent, measuring between 15-13 cm in length and 3-9 cm in width, accompanied by a short petiole measuring 2-5 cm in length.

1.4. Microscopic traits:

LeafT.S.

The leaf's transverse section (T. S.) includes immature layers along with an upper epidermis that is square in form and has a decreasing thickness. There are also trichomes. The palisade parenchyma consists of only one layer beneath the upper epidermis. The T. S. shows collenchymatous tissue (between three and six rows) and vascular bundles (between four and five).

1.5. Chemical constituents:

Terpenoids: ursolic acid, oleanolic acid, and beta-sitosterol have been identified.

Alkaloids: Celosine, a pyridine alkaloid, has been extracted.

Saponins: The leaves contain saponins, which are reported to exhibit anti-inflammatory and antioxidant properties.

Glycosides: flavonoid glycosides, including quercetin three-o-glucoside, have been identified.

Flavonoids: quercetin, kaempferol, and isorhapontigenin have been extracted from the leaves.

Phenolic acids: gallic acid, caffeic acid, and ferulic acid are found within.

Fatty acids: The leaves consist of fatty acids such as linoleic acid, oleic acid, and palmitic acid.

2. Pharmacological activities:

2.1.antidiarrrhealactivity

Antidiarrheal activity: Rats' diarrhea prompted by the charcoal meal test and PGE2 model can be efficaciously dealt with with an alcoholic extract of Celosia argentea leaves [29]. It works properly to alleviate diarrhea introduced through castor oil and charcoal meal. The look at uses a version of diarrhea because of castor oil and diarrhea due to charcoal meal.

2.2. Anti oxidant activity:

A)Evaluation of the Power-Lowering Capacity of Celosia argentea Leaves:

Using the reduction ability experiment, the diminishing potential of Celosia argentea leaves is evaluated. One milliliter of a Celosia argentea leaves (0. 2 mg/ml) filtrate created in distilled water is combined with a solution comprising 2. 5 ml of 0. 2 M phosphate buffer (pH 6. 6) and 2. 5 ml of K3[Fe(CN)6] (1% w/v). Twenty minutes of incubation at 50 degrees Celsius followed addition of 2. 5 ml of trichloroacetic acid (TCA) (10% w/v), then the combination was spun at 3000 rpm for ten minutes. The supernatant is then combined 0. 5 ml of FeCl3 (0. 1% w/v) with 2. 5 ml of distilled water. At 700 nm, the absorbance of the produced solution is recorded against a blank reagent. The greater absorbance of the reaction mix shows that Celosia argentea's leaves have a stronger reducing ability.

B) Celosia argentea leaves' DPPH radical scavenging capability:

Free radical scavenging ability of Celosia argentea leaves was assessed using the DPPH approach. This technique involved combining 1. 0 ml of the stock filtrate of Celosia argentea leaves with 1 ml of DPPH (0. 135 mM) dissolved in methanol, with concentrations ranging from 0. 2 to at least 1. 0 mg/ml. For thirty minutes, the reaction mixture was meticulously vortexed and kept at room temperature in the dark. After that, the absorbance was calculated at 517 nm. Using the formula below, the scavenging activity was measured:

DPPH scavenging activity = [(Abscontrol - Abssample) / Abscontrol] x 100 (%)

Where Abssample reflects the absorbance of the DPPH solution mixed with the sample and Abscontrol represents the absorbance of the DPPH solution in methanol. The findings showed that Celosia argentea leaves exhibited a dose-dependent interaction such that their decreasing capacity grew with greater dosages.

2.3. Anti bacterial activity:

In 1969, it was identified that C. argentea demonstrated antibacterial properties. This included effectiveness against Escherichia coli, Agrobacterium tumefaciens, Salmonella typhi, Bacillus subtilis, S. aureus, and Mycobacterium tuberculosis (Bhakuni et al., 1969). Additionally, the alcohol extract of C. argentea showed sensitivity in the following order: Shigella sp., Pseudomonas sp., Staphylococcus sp., Streptococcus sp., Vibrio sp., Klebsiella sp., E. coli, and Salmonella sp. Gnanamani et al. (2003) examined the antibacterial activity of C. argentea leaf extracts against eight burn pathogens. However, the efficacy of the promising antibacterial compounds remains uncertain, and this study aims to identify the active antibacterial components.

2.4. wound healing activity:

Utilizing an ointment formulated from an alcohol extract of leaves of celosia argentea, the art work of Priya et al. substantiated that the extract of Celosia argentea possesses a beneficial (therapeutic) impact on the process of wound healing. Their research indicated that the wounds of the treated rats healed more rapidly (in 15 days compared to 30 days for the untreated group), and the levels of collagen and hexosamine in the granulation tissue increased more significantly in the treated wounds.

2.5. Anti-inflammatory and Anti-tumour activity:

Anti-inflammatory and antitumor houses Bhujbal et al. investigated the anti-inflammatory properties of an extracted flavonoid fraction from Celosia argentea Linn leaves. The examination's findings verified that this flavonoid had sturdy anti-inflammatory qualities when examining the usage of models of continual inflammation caused with the aid of cotton pellets and rat paw edema resulting from carrageenan. In all models, the study tested strong dose-dependent anti-inflammatory effects. The outcome demonstrated the plant's ancient utilization in treating some excruciating inflammatory illnesses.

2.6. Anti microbial activity:

From the Delta State Teaching Hospital in Oghara, Delta State, pathogenic remnants of gram-positive bacteria including Staphylococcus aureus and Bacillus subtilis as well as gram-negative species including Escherichia coli and Pseudomonas aeruginosa alongside fungal species including Candida albicans and Aspergillus niger have been found. Stored at 4°C until needed for investigation, these bacteria were preserved on Sabouraud Dextrose Agar for fungi and Mueller Hinton Agar for bacteria.

A) Measurement of Antimicrobial Activity Using the Agar Well Diffusion Technique:

To get a stock solution at a concentration of 20 mg/ml, the extract was dissolved in distilled water. Each of the evenly spaced wells (8mm) produced on the surface of agar plates inoculated with the appropriate test organisms received fifty μ l of this stock solution. Respectively in plates inoculated with bacteria and fungi, control wells containing chloramphenicol (2 µg/ml) and fluconazole (25 µg/ml) were incorporated. For bacterial strains and C. albicans, the petri dishes were incubated at 37°C for 18–24 hours; fungal cultures were maintained at 18°C for 5 days. The diameter of the inhibition zones, computed as the difference between the seen zones and the well diameters, was used to assess the antimicrobial activity; this was compared to standard antibacterial and antifungal indicators.

B) Assessment of Fungicidal, Bactericidal, and Minimum Inhibitory Concentration:

Serial dilutions of the reconstituted extract were performed in several concentrations (from 3. 125 μ g/ml to 50 μ g/ml) inside sets of test tubes containing standard media to find the least inhibitory concentration (MIC) of the leaf extract. Then cultures of the test organisms were added to each test tube. At 37°C for 18–24 hours, the tubes holding the appropriate microbes and extracted.

3. Medicinal uses:

The leaves of celosia argentea are utilized in various treatments to address ailments such as ulcers, wounds, and skin eruptions, among others. Additionally, they are employed in the management of diabetes, sarcoptidosis, aphr iridocyclitis, and caligo cornea as an antipyretic. These leaves are also beneficial for reducing wound inflammation or hemorrhage. When a poultice of the leaves is applied, especially when smeared with honey, it alleviates and soothes irritated areas, as well as abscesses and buboes that cause pain. In many tribal regions, celosia argentea leaves are used to prepare curry.

4. Conclusion:

The plant Celosia argentea includes numerous pharmacological activities. The present take a look at indicated the Celosia argentea has powerful antidiarrheal activity, antioxidant interest, antibacterial hobby, wound healing, antitumor and anti-inflammatory pastime, and antimicrobial hobby. The celosia leaves comprise diverse chemical parts via which the healing consequences are visible. It can be used for development of effective herbal tablets for those condition

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