

# Anticancer Overview of Celosia Argentea

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**Abstract:** Medicinal plants are used in all traditional system of medicine from thousands of year to treat and to prevent disease. The active metabolites possess the efficiency to treat the disorders. Based on therapeutic effect we select the plant *Celosia argentea*. Plant *Celosia argentea* belong to family *Amaranthaceae* is used in various medicinal products. Various part extract are used for formulation of medicine. We mentioned the various therapeutic effects shown by drug *Celosia argentea*. It contain active chemical constituent are mainly phenols, flavonoids, steroids, tannins, carbohydrates, lipids, amino acids, peptides, phenolic acids, cardiac glycosides, phytosterols, amino acids, carbohydrates

**Keywords:** Anticancer, *celosia argentea*, medicinal system, herbal plant, active constituent

## INTRODUCTION

Preface India is rich source of medicinal shops and saucers; There are further than 10,000 medicinal shops of which further than 1800 medicinal shops are used in Ayurveda, 4700 in Traditional Medicinal Practice, 1100 in Siddha Medicinal System, 750 Nazi, 300 in Homeopathy, 300 in Chinese System of Medicine and eventually 100 in Allopathic System<sup>5</sup>. Besides the below, another system is nominated as folk drug which is analogous to the Ayurvedic system, the medicinal interpreters of folk medicinal systems are also known in Eastern India as Averages<sup>(1)</sup> moment's medicinal shops are the main source of medicinal, serving as a significant element of the pharmaceutical assiduity's medicine development program and offering mortal cures<sup>(2)</sup> About 80 of populations are using the herbal products<sup>(3)</sup>

*Celosia argentea* line. Is a herbaceous factory. It is one of the most popular of the field cut flower. *Celosia argentea* generally known as the plumed cockscomb or tableware cocks comb. Its leaves and flower can be used as vegetable which can be used as food in India.

Is an periodic condiment that belongs to the *Amaranthaceae* family. The oblate black or sanguine black seeds, are generally collected in afterlife when the infructescence matures, also the factory is picked or cut, also dried, and the seeds are collected and meliorated. The dried ripe seed is for clinical use<sup>(4)</sup>

*Celosia argentea*(Family- *Amaranthaceae*) grows as a weed during the stormy season throughout India and other tropical regions of the world, similar as Sri Lanka, South Asia, Africa and America. An alcoholic excerpt of the seeds possesses aphrodisiac, antipyretic, antispasmodic, anticancer, diuretic and antibacterial. Also they are reported to be useful in hostility, inflammation metrorrhagia, gonorrhoea, mending of injuries and injuries.<sup>8- 10</sup>In myth practice, the decoction of *C. argentea* seeds have been reported to be useful in diabetes mellitus<sup>(5)</sup>



## MORPHOLOGY

### SCIENTIFIC CLASSIFICATION (1)

Kingdom: Plantae (Angiosperms)  
Super division: Spermatophyte  
Division: Eudicots / Magnoliophyta  
Class: Core eudicots / Magnoliopsida  
Order : Caryophyllales

Family : Amaranthaceae (flowering plants)  
Subfamily : Amaranthoideae and Gomphrenoideae  
Genus : Celosia (184 scientific plant, 51 species are accepted) and Lithophila  
Species : C. argentea

Binomial name: Celosia argentea L., Amaranthus Cristatus

Synonyms: Celosia cristata, Semen celosiae.

VERNACULAR NAMES:

English : Common coxcomb, Crested coxcomb, Feather coxcomb

Telugu : Gurugu, Panchechettu

Hindi : Sufaid murga, Indivara, Survali, Laal Murga

Sanskrit : Vitunnaka, Sitivara, Sunishannaka

Panjabi : Srwali

Marathi : Kombda

Kannada : Kanne Hoo

Chinese : Bairihong, Ye ji guan huo, Guo weicao, Ji guan huo

French : Amarantecrete de coq, Celosieargente

#### CHEMICAL INGREDIENTS

A number of chemical composites including oleananetype terpenoid saponins(closing H, I and J), Cristhian, closing E, closing F, celosin G have been insulated from CeliaPhenols, flavonoids, saponins, alkaloids, glycosides, as well as micronutrients like Mg, Ca, S, P, K and Fe have been linked from the plant. Some of these composites evoke antioxidant and chemo protective parcels( 7)

The upstanding part of celosia argentea col. Contains flavonoids Beta vulgaris. The seed contains amino acid celogenamide A, cementing A, Borodin, aspartic acid, heroine, glutamic acid, the splint contains glycosides citrus in C, Indian(4)

#### PHOTOCHEMISTRY

2- descarboxy- botanizing; 3- methoxytyramine; 4- O-β- D\_ apifuranosyl(1-- 2)- β- D- glucopyranosyl-2-hydroxy-6-methoxyacetophenone; amaranth in; metallic acid; celogenamide A, celogentinA-D, H, J and K, Elysian; closing E, F, G; Cristhian; dopamine; Lycoming A methylated; Lycoming C methylate; Borodin; nicotine acid;(S)- tryptophan(5)

Diterpenes Diterpenes, C20 are a group of composites that consists of 4 five carbon(C5) units called isoprene. These composites are well known for their pharmacological, toxicological conditioning and bitter taste. Gibberellic acid is a simple gibberellin, a tetra cyclic terpene acid and acts as factory hormone. Analogous effect was observed for promoted seedling by oligogalacturonic acids(Suzuki et al., 2002)(8). Di terpenes, C20 are a group of composites that correspond of 4 five carbon(C5) units called isoprene. C. Argentea contains multitudinous kinds of amino acids, and their ingredients(8)

#### Phytochemical Webbing.

Test for saponin(Karthiyayini & Nithiya, 2015)(4) The excerpt(50 mg) is adulterated with distilled water and made up to 20 ml. The suspense is shaken in a graduated cylinder for 15 twinkles. A two cm subcaste of froth indicates the presence of saponins. 6.

Test for Terpenoids(Karthiyayini & Nithiya, 2015) Salkowski test 5 ml of each excerpt was mixed in 2 ml of chloroform and 3 ml concentrated sulfuric acids were precisely added to form a subcaste. A sanguine brown colouration of the interface was formed to show positive results for the presence of terpenoids(6)

#### ANTI-CANCER EXERTION

The triterpenoidsaponins were insulated from the seeds of C. argenteaand named as closing E, closing F, closing G, and Cristhian. These active ingredients are screened for their anti-cancer exertion by in vitro styles(5) Three new terpenoid saponins, named closing E, closing F, and closing G, together with a given emulsion Cristhian were insulated from the seeds of Celia argentea L. and shows in vitro antitumor and anti-inflammatory. These active ingredients are screened for their anticancer exertion by in vitro styles(9)

A number of studies revealed that C. argentea is a potent agent for excrescence treatment. Hayakawa et al.(1998) delved theanti-metastatic effect of Semen Close excerpts, chancing that intraperitoneal administration of Semen Close excerpt for seven days before excrescence inoculation significantly inhibited liver metastatic caused byintra-portal injection of colon 26- L5 melanoma cells in cure-dependent

manner. In vitro trials showed that water extract of *C. argentea* also intermediate macrophages to produce white blood cells to lodge (Katakana et al., 1998) The anti-tumor foundation of *C. argentea* is due to the specific of vulnerable regulation, including convinced IL- 12, IL- 2 and IFN-  $\gamma$ , performing to the vulnerable state of B dominance and activation of the cells to achieve the antitumor state. Co-culture Of Elysian and Con A increased IFN-  $\gamma$  stashing two-fold compared with Con A alone, indicating that Elysian not only activates macrophages but also affects T- cells function. Another study showed significant immunomodulator exertion of upstanding corridor of *C. argentea* (Dev hare et al., 2011). Saponins present in *C. argentea* possesses membrane permeabilizing parcels (6)

### RESULT

*Celosia argentea* extract exhibited significant cytotoxicity against MCF-7 (breast), HepG2 (liver), and A549 (lung) cancer cells. Bioactive compounds, including flavonoids (quercetin, kaempferol) and phenolic acids (gallic, ferulic), were identified. Induction of apoptosis and cell cycle arrest at G2/M phase.

Downregulation of anti-apoptotic proteins (Bcl-2, Bcl-xL) and upregulation of pro-apoptotic proteins (Bax, p53). In vivo studies demonstrated significant tumor growth inhibition.

### CONCLUSION

The biological activities and chemical constituents report review confirm the therapeutic value of *celosia argentea*. *Celosia argentea* extract and its bioactive compounds exhibit potent anticancer activity against human cancer cell lines, suggesting a promising natural therapeutic agent for cancer treatment. Thus, there remains a tremendous scope for further scientific exploration of *Celosia argentea* to establish their therapeutic efficacy and commercial exploitation.

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