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Descriptive Review of Celosia Argentea for Wound

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Abstract: *Celosia argentea is a tropical plant that is known for its vibrant color and traditional uses. It has been used to treat gonohorrhea, jaundice, wound healing, folklore, and diabetes. The purpose of this review is to provide an overview of the plant's uses in order to aid in the investigation of other well-known medicinal plant activities. 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: Celosia argentea, Burn wounds, Pharmacological activity

I. INTRODUCTION

The Amaranthaceae family includes the Celosia argentea plant, which is used to treat illnesses. It is frequently referred to as "kurdu." There are roughly 70 species in the Celosia genus, and Celosia argentea is a common leafy vegetable. Either the entire plant or a specific portion of it is extracted and used. The primary purpose of Celosia argentea is to cure kidney stones, particularly calcium stones. [1]

Among the species' several plants, C. argentea is a significant tropical green vegetable crop with a high nutritional content. 2. C. argentea, a tropical plant of Indian provenance, is prized for its vibrant hues and customary applications. 3. C. argenteais commonly named as semen celosiae, celosia, silver cock's comb, cock's comb, quail grass, woolflower in English. In India locally named as sitivara, vitunnaka, sunishannaka (Sanskrit), indivara, survali, safedmurga (Hindi), annesoppu, and kannehoo (Kannada).

Among the species' several plants, C. argentea is a significant tropical green vegetable crop with a high nutritional content. [2]

Wound Healing:

Wound is defined as the loss of breaking cellular and functional continuity of the living tissues and management of wounds is frequently encountered with different problems. Drug resistance and toxicity hindered the development of synthetic antimicrobial agents with Wound healing activity. Many factors should be considered before selecting a wound healing model for a specific study. A wide variety of models have been developed for examining different aspects of the repair response thus many animal models are used for the evaluation of wound healing activities.

Rats and mice have been widely used in the study of skin wound healing and efficacy of different treatment modalities. These particular species are mostly selected because of its availability, low cost and small size. In this review, we discussed about the wound and types of wound models that can be used along with the topics like wound location, where it is feasible to create the wound, wound size, strain and sex of rat, weight and age range as well as anaesthetics and analgesics and analytical measures that are used in wound healing studies. The present review will be helpful for the evaluation of drugs having potential for wound healing activity.

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General process of wound repair:

Wound healing is a process by which tissue regeneration occurs. It is a simple, dynamic process of restoring integrity and tissue layer, which involves an array of inter related and concomitant events. The process of wound repair differs little from one type to another and is generally independent of the form of injury. Although the different steps in the wound healing process occurs in a continuous, integrated manner, it is convenient to divide the overall process into three overlapping phases and several natural components for descriptive purposes.

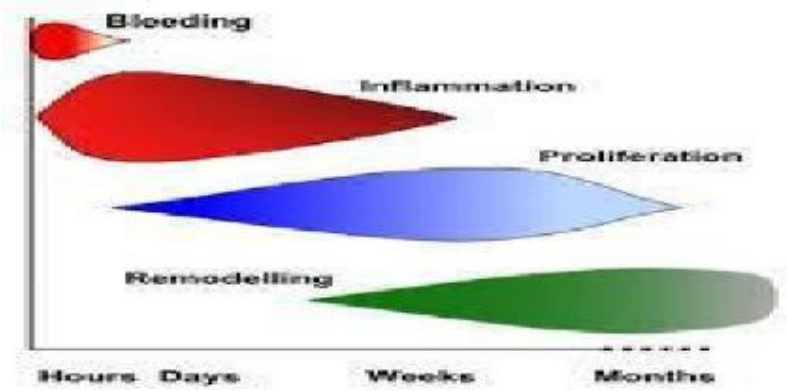

Fig. 1. Tissue Repair Phases and Time Scale

Inflammatory phase (0-5):

The inflammatory response is initiated at the moment of injury. Surgical or traumatic wounds disrupt the tissue shape and architecture and cause hemorrhage. Initially, blood fills the wound and exposure of this blood to collagen in the wound leads to platelet deregulation and activation of Hageman factor. This is turn sets into motion a number of biological amplification system including the complement kinin and clotting cascades and plasminogen generation. This condition serves to amplify the original injury signal and lead not only to clot Production of both kinins and prostaglandins leads to vasodilatation and increased small vessel permeability in the region of the wound.

TOXONOMY:

Kingdom	Plantea
Super division	Spermate phte
Division	Manoliophyta
Class	Magnoliophyta
Order	Carypphyllales
Family	Amaranthaceae
Genius	Celosia
Species	Argenta

Table No.1 Taxonomical Classification. [4]

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MORPHPOLOGY:

Type	Herb	Height (0.4-2m)
Flower	Colour	Pink - white
	Shape	Cylindrical
Fruits	Type	Fibrous
	Shape	Capsule
	Size	12
Leaf	Type	Simple (4 to 14 cm long)
	Arrangements	Alternate and spiral

Table.No.2 Morphology.

Fig.No.2 Celocia Argentea

Characteristics that are both biological and pharmacological

The Amaranthaceae family includes the annual herb Celosia argentea L. Only two species—C. argentea and Celosia Cristata—are known in China, despite the genus having about sixty species worldwide. C. Cristata is frequently categorized as a C. argentea variety (C. argentea var. Cristata) in different geographical areas. Because of their intimate connection, C. Cristata is commonly utilized as an [5] adulterant in a variety of settings, whether on purpose or accidentally.

Cultivation: Due to their tropical origins, these plants thrive in full sun and need a well- drained environment. They ought to receive at least eight hours of direct sunshine per day. Plant them where they receive afternoon shade and early morning sunlight for a healthy growth. Particularly during the sweltering summer months, the midday sun is typically severe. The plant will be protected from extreme heat by afternoon shade. Dead flowers can be removed to encourage [6] continued growth, and the flowerheads can endure up to eight weeks.

Compounds isolated from Celosia argentea Linn:

Composition of Celosia argentea Linn The composition of Celosia argentea Linn per 100 grammes edible portion is: water 83.3g, energy 186 KiloJoules (44 Kcal), protein 4.7 grammes, fat 0.7 grammes, carbohydrate 7.3 grammes, fibre 1.8 grammes, Ca 260 mg, P 43mg, Fe 7.8mg.[4] Young leaves harvested 5-7 weeks after sowing have the

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bestnutritional value and are particularly high in vitamin C, vitamin A, and iron. Phytic acid is present in the leaf (120) mg/100 g) and 20 mg/ 100 g of oxalic acid. Environmental factors, such as plant age, fertilizer [7] application, and soil fertility, have a significant impact on the composition.

Cultivation: Due to their tropical origins, these plants thrive in full sun and need a well- drained environment. They ought to receive at least eight hours of direct sunshine per day. Plant them where they receive afternoon shade and early morning sunlight for a healthy growth. Particularly during the sweltering summer months, the midday sun is typically severe. The plant will be protected from extreme heat by afternoon shade. Dead flowers can be removed to encourage [8] continued growth, and the flowerheads can endure up to eight weeks. [9]

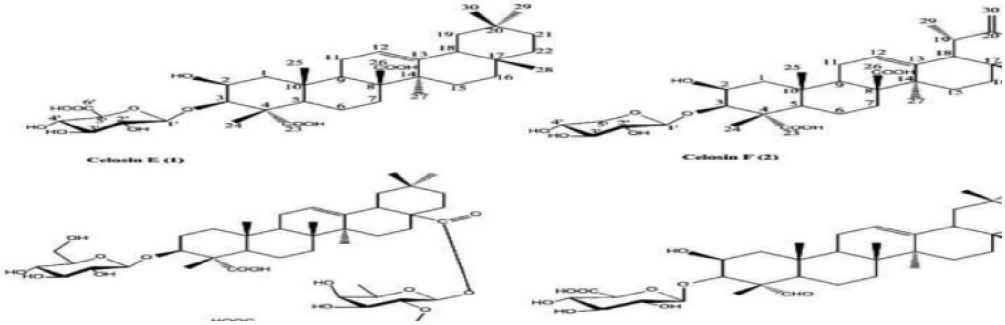

Fig No.3 structure of some compound isolated from seeds of celosia argentea. [9]

Table 1: Phytochemical Analysis Using Aqueous Extract.

Phytochemicals	*C.argentea*	*C.cristata*
Alkaloids	+	+
Saponins	+	+
Tannins	+	+
Flavonoids	+	-

Table No. 3 Phhytochemical Analysis U sing Aqueous Extract. [10]

Fig No 4 graphical abstract.

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Name of primary metaboties	Primary metaboties constituents	Part of the plant
Carbohydrates, lipid	Sucrose Seeds Lipids Fatty acids, waxes, glycerides, phospholipids, sterols, vitamins A, D, E and K, β-sitosterol, palmitic acid, oleanolic acid stigmasterol, daucosterol.	Seed, whole plant
Amino acid, peptide and protein	Bicylic peptides: celogentins A, B,C,D,E,F,G,H,andJ; moroidin Cyclic peptide: Celogenamide A, Celogentin K Seed Betalain Betacyanins.	Seed

Table no.4 primary metabolites constituents and secondary constituent [11]

Secondary Secondary metabolites	constituents	Part of the metabolites plant
Phenol and phenolic acid	1-(4-O-β- glucopyranosyl-3 methoxyphenyl) propan-2-ene (citrusin C), 3-O- β-glucopyranosyl- 1H-indole (indican), (7E)-6,9-dihydromegastigma- 7-ene-3-one-9-O- β -glucopyranoside, (3Z)- hexenyl-1-O-(6-O- β -rhamnopyranosyl- β - glucopyranoside), (3Z)-hexenyl-1-O- β - Dglucopyranoside and trans-ferulic acid.	Leaves
Phenolic glycolysis	4-O-β-D-apifuranosyl-(1 2)-b-D-glucopyranosyl-2-hydroxy-6-methoxyacetophenone, eugenyl-O-β-D- glucopyranoside, sucrose, quercetin-3-O-β- D-glucopyranoside, isorhamnetin-3-O-β- D-glucopyranoside, rhamnatin-3-O- β-D-glucopyranoside, isorhamnetin-3-O-ß-L- rhamnopyranosyl-(1 2)- β-D-glucopyranoside, β-sitosterol, stigmasterol, and stigmasterol-3-O- β -D- glucopyranoside.	Whole herb
Flavonoid	Isoflavones: 5-Methoxy-6,7-methylenedioxy-2'-hydroxyisoflavone and 2'-methoxy derivative:	Aerial parts
Diterpines steroids	Saponin, celosia A, B, C, D, and celosia E, celosia F, celosia G.	Seed

Table no. 5 Secondary metabolites constituents of celosia argentea.

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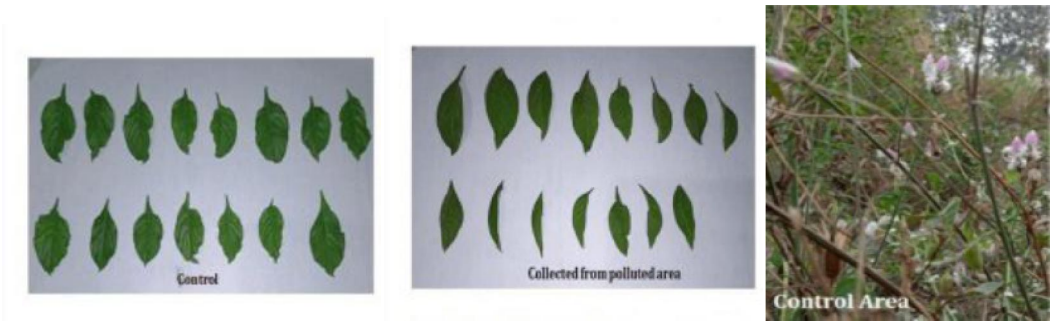

Fig No. 6 Control area

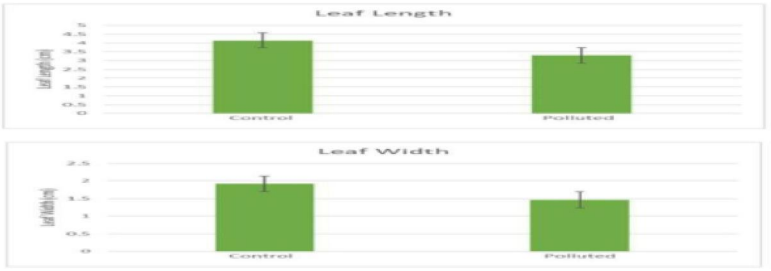

Fig No. 6 Leaf morphology parameters of control and polluted plants. [12]

Properties:

According to Leung, Celosia argentea contains the following nutrients per 100 g edible portion: water (83.8 g), energy 185 kJ (44 kcal), protein 4.7 g, fat 0.7 g, carbohydrate 7.3 g, fiber 1.8 g, Ca 260 mg, P 43 mg, and Fe 7.8 mg. Similar to amaranth (Amaranthus cruentus), it is a dark green leafy vegetable with a high nutritional content. The maximum nutritional value is found in young leaves that are picked 5–7 weeks after seeding and are particularly high in iron, vitamin A, and vitamin C. Oxalic acid (20 mg/100g) and phytic acid (120 mg/100g) are found in the leaves. The leaves are less fit for fresh consumption due to their high oxalic acid content. The Environmental factors, such as soil fertility, fertilizer application, and plant age at harvest, have a significant impact on composition.

In experiments conducted in India, Celosia argentea seeds lowered blood glucose levels in rats with diabetes induced by alloxan. In mouse experiments, aqueous seed extracts demonstrated immunomodulatory and antimetastatic effects. In animal models of chemical and immunological liver injury, the acidic polysaccharide celosian that was extracted from the seeds was shown to be a strong antihepatotoxic agent. The seeds have yielded the antimitotic bicyclic peptides celogentins A–C and moroidin, whereas the leaves have yielded an antiviral protein.

Red betacyanins and yellow betaxanthins, which are being investigated as food coloring agents, are found in Celosia argentea. Celosia has yielded a number of glycopyranosyls, including citrusin C, which has the ability to depigment skin. In India, the fatty oil found in Celosia argentea seeds is [13] referred to as "celosia oil.

Application:

The utilization of medicinal plants has consistently been integral to the progression of humanity; these plants signify some of the earliest therapeutic resources employed by humans, and they continue to be of significant value for the preservation of human health. As reported by the World Health Organization nearly 80% of individuals in developing nations rely on traditional medicine as their primary form of healthcare, predominantly involving the use of plant extracts or their active components. The data provided by the WHO indicates that medicinal plants, herbal formulations, or products derived from them are traditionally utilized [14] in primary healthcare across various countries.

The WHO defines a medicinal plant as a species that, when administered to humans, produces a pharmacological effect. The insights gained from ethnopharmacology regarding the therapeutic attributes of plants and the collective knowledge

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surrounding their application have been utilized as foundational material for the advancement of technical scientific understanding.

The gathering of information concerning the utilization of natural resources by traditional communities has equipped researchers with frameworks for the sustainable management of these resources, while also guiding the exploration [15] of the pharmacological properties of specific species.

ANIMAL MODELS FOR EVALUATION OF WOUND HEALING ACTIVITY:

1. Excision wound model
2. Incision wound
3. Burn wound model
4. Ear wound models
5.Dead space would model

1. Excision wound model

In this type of model circular wounds of about 2 cm are made on depilated dorsal thoracic region of rats under aseptic conditions and should be observedthroughout the study. The area of wounds should be measured immediately by placing atransparent polythene graph paper over the wound and then tracing the area of the wound on it. This is taken as initial wound area reading. Drugs are to be applied test and standard as well and observations are to be taken on the alternate post wounding days by tracing the wound area and percentage area of wound closure is calculated. Incision Wound Model In this model cuts are made in the skin of the animal after giving anesthesia with anesthetic ether. Two para-vertebral long incision of 6 cm length made through he skin and cutaneous muscles at distance about 1.5 cm from the midline on each side of the depilated back of the rats. After theskin incision made, the parted skin kept together and should be stitched at 0.5 cm intervals continuously and tightly by using suture thread and a curved needle (When the wounds get cured thoroughly, the sutures are to be removed on day 9 and tensile strength of the healed wound should be measured on day 10 by continuous and constant water [16] flow technique.

2. Incision wound model :

In this model cuts are made in the skin of the animal after giving anesthesia with anestheticether. Two para-vertebral long incision of 6 cm length made through the skin and cutaneous muscles at distance about 1.5 cm from the midline on each side of the depilated back of the rats. After the skin incision made, the parted skin kept together and should be stitched at 0.5 cm intervals continuously and tightly by using suture thread and a curved needle. When the wounds get cured thoroughly, the sutures are to be removed on day 9 and tensile strength of the healed wound should be [17] measured on day 10 by continuous and constant water flow technique.

3. Burn Wound Model :

Partial thickness burn wounds are created on overnight starved animals. Under anesthesia, pentobarbitone (30 mg/kg, i.p.), hot molten wax at 800C is poured into a cylinder of 300 mm2 circular opening placed on the shaven back of the animal until wax get solidified. Solidification of wax normally takes 10-12 minutes.

Cylinder is now removed that leave the demarked partial thickness circular burn model. Dead Space Wound Model In this type of model the physical changes in the granuloma tissue. The subcutaneous dead space wounds are to be created in the region of axilla and groin by making a pouch through a International Bulletin of Drug Research.,97 small nick in the skin. The cylindrical grass piths measuring 2.5 cm in length and 0.3 cm in the diameter are introduced in to the pouch. Each animal receive 2 grass piths in different locations. Implantations of grass pith [18] induce granuloma formation.

4. Ear Wound Models:

In cases where human healing occurs entirely by reepithelialisation and granulation formationwithout contraction, the ear wound model may be more suitable because it heals without contraction and has a vascular cartilage wound bed. The Hairless Mouse The hairless mouse looks like a nude mouse but has a thymus gland, and therefore it has an intact cellular immune system.

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In order to visualize wound epitheliazation and neovascularisation, the anesthetized animal is placed with the ear/wound trans-illuminated in a trinocular compound microscope. The advantages of this model discussed here is that virtually all healing observed in this model is attributable to epitheliazation and subsequent granulation accompanying the neovascularisation based on the structure of the mouse ear. The bed of the full-[19] thickness dermal wound consists of cartilag.

a. Rabbit Ear Model:

Act as controls or treated groups. New collagen, protein, glycosaminoglycan, or DNA production can be detected in tissue explants of the new tissue. The three main vascular pedicles' extremely consistent architecture is another benefit of the rabbit ear. When two of them are separated, the ear remains completely alive while being reproducibly ischemic This makes it possible to examine [20] several agents in ischemia circumstances where healing is compromised.

b. Blister Wound Model:

This model can be used for a variety of studies, such as those involving the molecular weight or absorption of medications or chemicals in various solutions. These findings offer a quick way to give peptide and protein medications that would otherwise be poorly absorbed over a brief period of time and can be utilized to study a variety of medications by passive diffusion It is also possible to assess the absorption effect in occlusive and semi-occlusive circumstances. The efficacy of the epidermis' barrier function can be assessed by measurin transepidermal water loss (TEWL) on a daily basis Model of Tape Stripping The stratum corneum's lowest point is where the skin barrier is found. According to this hypothesis, this barrier can be broken down by repeatedly removing the epidermis with sticky tape.This disintegration can be estimated by an evaporimeter measuring TEWL Twenty successive stripping procedures using adhesive tape will normally produce a humid skin [21,22] surface.

4. Dead Space Wound Model :

In this type of model the physical changes in the granuloma tissue. The subcutaneous dead space wounds are to be created in the region of axilla and groin by making a pouch through a International Bulletin of Drug Research.,97 small nick in the skin. The cylindrical grass piths lmeasuring 2.5 cm in length and 0.3 cm in the diameter are introduced in to the pouch. Each animal receive 2 grass piths in different locations.. Granulomas surrounding the grass piths were excised and slit open. The tensile strength of tissue piece (obtained by trimming the rectangular strip of granular tissue) measuring about 15 mm in length and 8 mm width was determined on 10th post wounding day by [23] adopting continuous water flow technique.

MATERIALS AND TECHNIQUES:

We gathered Celosia argentea (CA) Linn. leaves (Amaranthanceae family) from China. The employees of Hebei University's Faculty of Art and Science's Department of Botany verified the plant species. The plant material was gathered in bulk at the same time to minimise any variances brought on by location and climate. Plant material and extract preparationAbout 200 g of dry, powdered CA leaves were extracted using pure ethanol. The former soxh-let equipment was used to perform the traction operation for eight to ten hours. After ethanol was extracted under pressure, a 13.0% (w/w) yield of ethanol-free semisolid material was produced. Ten grammes of the CA fraction and one hundred grammes of soft white paraffin (soft white; Sigma-Aldrich, Germany) were combined to create an ointment (10% w/w). Ethyl acetate (Sigma Chem. Ind., St. Louis, MO, USA) was used for extraction in order to examine the extraction capacity of different solvents.

The extraction method used to extract and dry the ethyl acetate solvent was identical to that of solvent made of ethanol. Furthermore, an alcoholic extract was obtained at working temperature and left on the shaker for the entire night with two changes in order to assess any effects of temperature. The resulting extract, which was alcohol-free, was then used for further research. The yield value and efficacy of the ethanol and ethyl acetate extracts did not differ significantly. Creating wounds, assembling rodents, and applying ointment.Rats (Albino Wistar strain) weighing between 100 and 120 g on average served as the study model for this investigation. The one that The experimental rats were kept in separate housing at 26±3°C, with a relative humidity of 42– 55%, in uniform conditions, and fed pellets and water as needed. In order to examine the effectiveness of the CA fraction, a total of 18 rats were split into three cohorts (treatment, standard, and control cohort). The treated cohort and untreated cohort in a rat burn wound model were also

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compared to the efficacy of the commercial formulation. Thirty animals were examined in each treatment group. wherein five animals were designated for biochemical analysis on days 1, 3, 7, 10, 14, 20, and 25. Following seven days of exhaustive Under ether anaesthesia, the rats' backs were shaved, and an open excision burn wound was created using a heated metal stick that was 1.5 cm long and 80–85°C. The exposure time was 20 seconds. After about 24 hours, dead skin was removed with the use of a sterile medical razorblade, resulting in full-thickness burn wounds.

By measuring the raw wound's circumference, the area of the wound was determined. Three cohorts of six rats each were assigned to the animals.Group 1 was the control group.Leaf extract from Celosia argentea has a healing effect on burn injuries.

Affin alone, the 10% formulated CA extract ointment was applied to the experimental cohort (group 2), and the 1% SSD (silver sulfadiazine, Behvarzan Pharmaceutical, China) was administered to the animals in cohort 3. On alternate days, dressings were changed in each of the groups under study. The day one injury area was regarded as 100%, and the day one wound area was compared to the injury regions on the following days. The rats were weighed on various days to assess any weight changes. On various days following the burn injury, the animals were weighed. Every experimental procedure was authorised and carried out in accordance with the Ethical Committee and Hebei Medical University's Human Investigational Committee (Shijiazhuang, China).

Injury contraction measurement:

The percentage drop in injury dimensions was used to calculate the rate of burn damage reduction at every other day. To assess the wound contraction on the designated days, the region was graphically read and the boundaries of the wounds were traced. Figure 1 shows a representative photograph illustrating the impact of extract and silver sulfadiazine treatment in comparison to the control group, and Figure 2 shows a representative graph illustrating the average wound contraction. Histochemical analysis Following the sacrifice of five animals, the area of injury was cleaned using regular saline solvent.

Granulation tissues that had formed were taken out and immediately frozen to preserve them. To prepare them for upcoming biochemical estimations, the tissues were lyophilised for four to six hours.Evaluation of hydroxyproline and hexosamine On the designated days, the lyophilised granulation tissues were collected and hydrolysed. accomplished by using a 6 N HCl solution for 20 hours at 110°C. Granulation tissue was evaporated until it was dry, and the residue that was left over was hydrolysed and dissolved in water. The hydroxyproline content was estimated using the technique. According to Woe-ssner's approach, Chloramine-T was added in order to complete the oxidation of hydroxy 2120.

Proline to pyrrolecarboxylic acid, which was then combined with para-dimethyl-aminobenzaldehyde (PDAB) to form a complex. This complex was then measured at 557 nm using a spectrometer . With the aid of 2 N hydrochloric acid, the acquired granulation tissue was hydrolysed till complete evaporation at a temperature of roughly 100°C for six hour in order to ascertain the hexosamine content.

After that, water was used to dissolve the residue. The method described by Elson and Morgan was used to look into the amount of hexosamine. The process included condensing hexosamine with acetyl acetone alkaline sol vent, which ultimately produced a pyrole molecule that subsequently reacted with para-dimethyl amino benzaldehyde. The resulting coloured product was then measured at 530 nm using a spectrometer.proliferation of cellsThe primary human dermal fibroblasts (Hs68) used in this experiment were obtained from Shanghai Institute for Biological Science, China's Institute of Cell Biology, were cultured at 37°C with 5% carbon dioxide.

Fibroblasts were employed before to passage 10 in order to prevent ageing changes. Life Technologies, located in Carlsbad, California, USA, provided all of the reagents needed for cellular culture. The growth media used was Dulbecco's modified Eagle's medium, which included 10% foetal bovine serum, 1 mM sodium pyruvate, 1% streptomycin and penicillin, 1× MEM nonessential amino acid combination, 2 mM L-glutamine, and 26 mM sodium carbonate.

A similar culture media with only a partial serum environment (0.1%) stopped the cell development at subconfluence. dialysed foetal bovine serum 48 hours before to the start of the study. Life Technologies provided the human epidermal keratinocytes (HEKn) and all other necessary culture materials. Up to passage 4, keratinocytes were used, and calcium concentrations below 0.06 mM were maintained to keep the cells in their undifferentiated state. Cells were cultured

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using EpiLife medium, which is serum-free but contains human epidermal growth factor (EGF) 10.2 ng/ml, hydrocortisone 0.18 mg/ml, transferrin 5 mg/ml, bovine insulin 5 mg/ml, and bovine pituitary extract 0.2% (v/v). At 30%, Leaf extract from Celosia argentea has a healing effect on burn injuries.

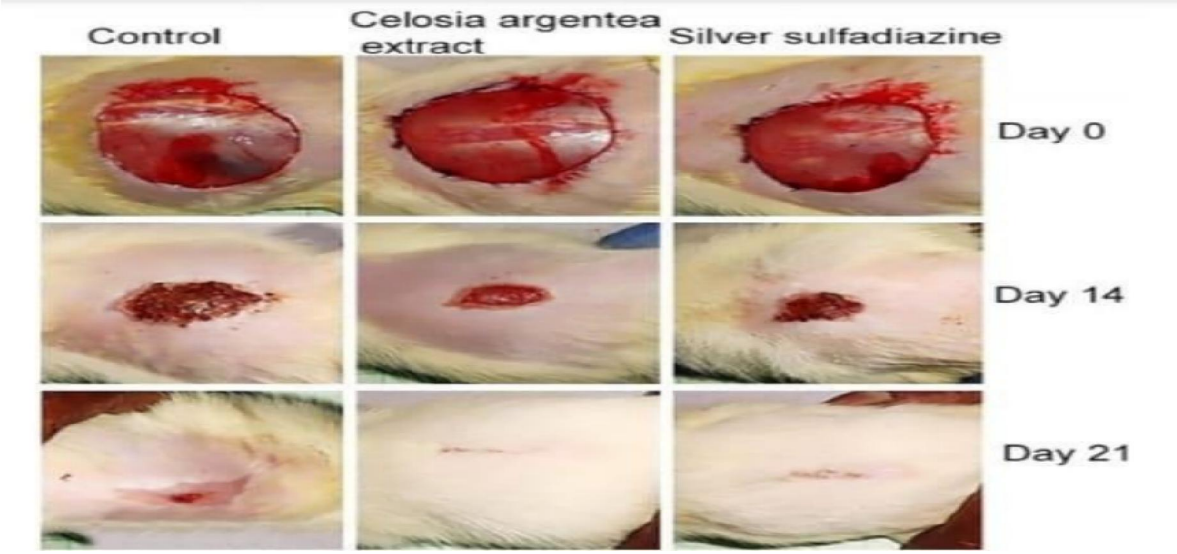

Fig no. 7 presentative images of burn wound healing pattern in control, CA leaf extract- treatedand silver sulfadiazine groups. Healing rates were measured graphically and photographed at regular intervals [24]

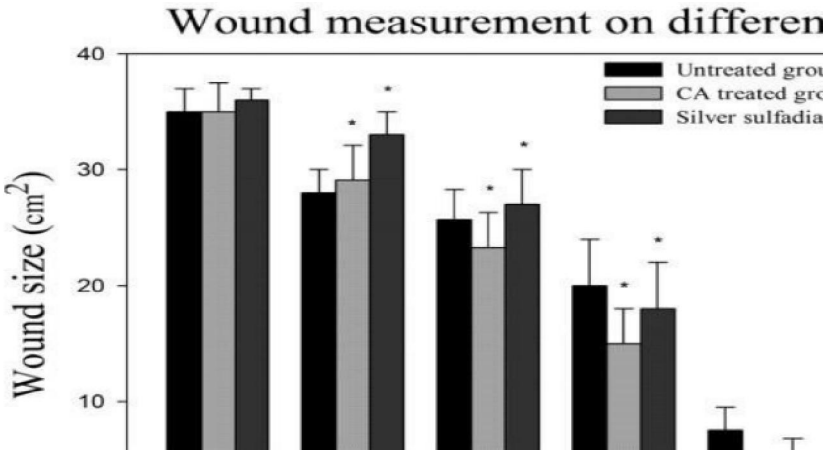

Fig No. 8 wound Measurement on different days.

PHARMACOLOGICAL ACTIVITY:

1. Antidiarrheal activity: The antidiarrheal effect: The diarrhea in rats induced by the charcoal meal test and the PGE2 model can be effectively managed using an alcoholic extract of Celosia argentea leaves This extract is effective in mitigating diarrhea caused by castor oil and charcoal meal. The study employs a model of diarrhea resulting from castor oil and another from charcoal meal.

2. Antioxidant activity:

a) Assessment of the Reducing Capacity of Celosia argentea Leaves:

The reducing potential of Celosia argentea leaves is assessed through a reduction ability experiment. A 1 ml filtrate of Celosia argentea leaves (0.2 mg/ml) prepared in distilled water is mixed with a solution containing 2.5 ml of 0.2 M phosphate buffer (pH 6.6) and 2.5 ml of K3[Fe(CN)6] (1% w/v). After incubating for twenty minutes at 50 degrees

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Celsius, 2.5 ml of trichloroacetic acid (TCA) (10% w/v) is added, and the mixture is centrifuged at 3000 rpm for ten minutes. The supernatant is then combined with 0.5 ml of FeCl3 (0.1% w/v) and 2.5 ml of distilled water. The absorbance of the resulting solution is measured at 700 nm against a blank reagent. A higher absorbance in the reaction mixture indicates a greater reducing capacity of Celosia argentea leaves.

b) DPPH Radical Scavenging Activity of Celosia argentea Leaves:

The free radical scavenging ability of Celosia argentea leaves was evaluated using the DPPH method. This method involved mixing 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. The reaction mixture was carefully vortexed for thirty minutes and kept in the dark at room temperature. Subsequently, the absorbance was measured at 517 nm. The scavenging activity was calculated using the following formula:

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

3.Antibacterial Activity: In 1969, it was discovered that C. argentea exhibited antibacterial characteristics. This included its effectiveness against Escherichia coli, Agrobacterium tumefaciens, Salmonella typhi, Bacillus subtilis, S. aureus, and Mycobacterium tuberculosis Furthermore, the alcohol extract of C. argentea displayed sensitivity in the following sequence:

Shigella sp., Pseudomonas sp., Staphylococcus investigated the antibacterial properties of C. argentea leaf extracts against eight pathogens associated with burns the effectiveness of these promising antibacterial compounds remains ambiguous, and this study seeks to identify the active antibacterial constituents.

4.Wound Healing Activity: By employing an ointment derived from an alcohol extract of Celosia argentea leaves, the research conducted by Priya et al. confirmed that the extract of Celosia argentea has a positive (therapeutic) effect on the wound healing process. Their findings revealed that the wounds of the treated rats healed more swiftly (in 15 days compared to 30 days for the untreated group), and the levels of collagen and hexosamine in the granulation tissue were significantly higher in the treated wounds.

II. CONCLUSION

Celosia argentea is a medicinal plant rich in bioactive compounds such as flavonoids, phenols, saponins, peptides, and minerals, which collectively contribute to its wide range of pharmacological activities. Traditional use of this plant for wounds, inflammation, infections, liver disorders, and metabolic diseases is strongly supported by modern experimental findings Studies have demonstrated that Celosia argentea extract can accelerate healing, especially in burn and excision wound models, by promoting fibroblast proliferation, improving tissue regeneration,and enhancing collagen formation. These results support its traditional use in wound care and highlight its potential as a natural therapeuticagent.All things considered, Celosia argentea is a potentially helpful medicinal resource for future research into herbal drugs. But most of the evidence that is currently available comes from studies conducted in laboratories and on animals. Therefore, more standardized research and clinical trials are required to confirmits safety, efficacy, dosage, and mechanisms before it is widely used in modern medicine.

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