IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 4, November 2024

Extraction and Evaluation of Celosia Argentea

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Abstract: *This study focuses on the extraction and evaluation of bioactive compounds from Celosia argentea, a plant known for its nutritional and medicinal properties. The research aims to isolate key phytochemicals, assess their pharmacological potential, and evaluate their applications in health and industry. Using solvents of varying polarity, extracts were obtained from Celosia argentea leaves and stems. Phytochemical screening revealed the presence of flavonoids, alkaloids, saponins, tannins, and phenolic compounds. Quantitative analysis showed high antioxidant activity, confirming the plant's potential as a natural source of therapeutic agents.*

Further investigations were conducted to assess anti-inflammatory activities of the extracts. Preliminary results indicate promising anti- bacterial and anti-diabetic properties, supporting traditional uses of the plant in treating infections. Additionally, a nutritional profile analysis highlighted its value as a dietary supplement. The study concludes that Celosia argentea holds significant potential in pharmaceutical and nutraceutical industries, warranting further research for product development and therapeutic applications.

Keywords: Anti-inflammatory, Extract, Celosia argentea, Side effects

I. INTRODUCTION

Anti-inflammatory activity is important for wound healing procedure. It is a protective response to tissue injury. Celosia Seven-year grows in weed during rainy season. In India and many other countries like Shri Lanka, Africa, and America. It is used in treatment of jaundice, wound and fever etc. And leaves are used in treatment of Inflammation fever and itching.The seeds are bitter useful in blood disease mouth sores. They are effective remedy in diarrhea. Based on entho botanical practice the plant was look over for anti-inflammatory, anti-diabetic, anti-bacterial and diuretic properties.

It is it is erect annual herb which is plant up to2 meter tall. The stem of plant is reaged, Glabrous and branches up to 25% plant is available The leaves are without stipules, alternate and simple. Indistanctly remarketed petiole is present. Ovates are blade to lanciolate a longed which is up to 15cm to 7cm which is tapering at base which appears as acute and shortly mucronate at the apex. Gorgeous and innately veined. Initially flowers appear as spike conical but becomes cylindrical up to 20cm long. Flowers are bisexual, regular five merous, free of tepal, elliptical oblong narrowly, up to 6 to 10 mm long, stamen fused at base, ovary is superior in shape, style up to 7 mm long, 2 to 3 stigma which is very short, fruits is ovoid to globule up to 3 to 4 my long, few seeds are lenticular up to 1 to 1.5 mm long appears black shining and shallowly retuculate.

Side Effects:

1. Allergic Reactions: Some individuals may experience allergic reactions, such as itching, hives, or swelling.
2. Digestive Issues: Consuming large quantities may cause stomach upset, nausea, or diarrhea.
3. Interaction with Medications: Celosia argentea may interact with blood thinners, diabetes medications, and blood pressure medications.
4. Pregnancy and Breastfeeding: Insufficient research exists; consult a healthcare professional before consumption.
5. Bleeding Disorders: The plant's high vitamin K content may exacerbate bleeding disorders

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II. MATERIALS AND METHOD

Material:
Apparatus: Beaker, funnel, test tube, measuring cylinder, pipette.

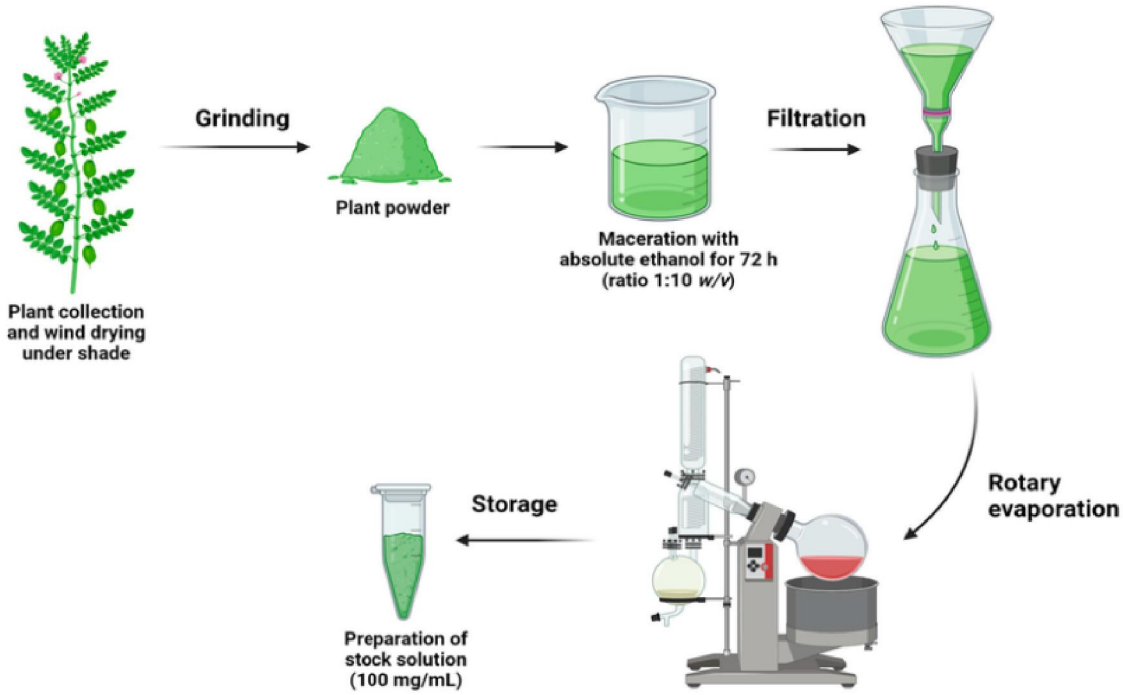
Method: Maceration
Chemicals: Drug sample,ethanol, methanol, water, mayers reagent

Method:
The grinded coarse powder of the stem and leaves was used. The extraction was performed by the Maceration method. Solvent used for extraction - Methanol.

III. METHODOLOGY

- Add 45gm of each powder to the methanol (135ml)
- Shake well and keep it for 7 days
- Filter and collect the extract and allow it to evaporate
- After complete evaporation recover the powder and weigh in grams
- Maceration process
- The weight of the recovered powder.

Figure 1: Maceration Process



Chemical Test:

1. Test of Alkaloids:

- 1ml of the extract, 2ml of Mayer's reagent was added.
- Appearance of dull white precipitate indicated the presence of alkaloids.

2. Test for Flavonoids:

- 1ml of extract, 1 ml of neutral ferric chloride was added.

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- The formation of brown colour confirmed the presence of flavonoids.

3. Test for Tannin:

- 1ml of the extract, few ml of 5 percent neutral ferric chloride was added.
- The development of a dark bluish colour indicated the presenceof tannins.

4. Test for Phenols:

- 1ml of extract, lead acetate solution was added and the precipitate formation indicated the presence of phenolic compounds.

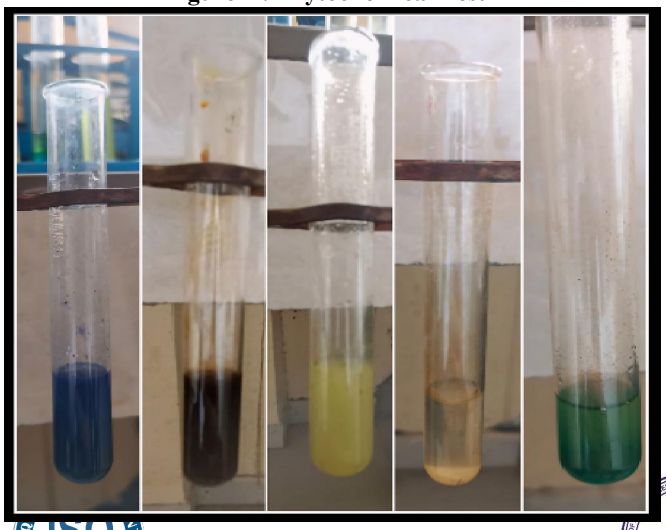
Separation- TLC

Extraction
↓
Stationary Phase - Silica Gel G
Mobile Phase - Ethyl Acetate : Methanol :D.W.(7 :2 :1)
↓
Rf Value
Rf Value = Distance travelled by solute / Distance travelled by solvent
Rf Value = 3.6 / 7.5 = 0.5 1 2

Qualitative Analysis of Phytochemicals

1. Determination of Alkaloids-
1ml extract+1ml Dragendorff's Reagent brown ppt observed Alkaloid present
2. Determination of Tannins-
FeCl3 Test-2ml 5%FeCl3 solution +2ml extract blue colour observed tannin present
3.Determination of flavonoids-
Shinoda Test-Mg ribbon+5ml extract+5ml HCL brown green colour observed Flavonoids present.
4.Determination of Glycosides-
Borntrager's Test-Dil sulfuric acid+ extract+boil & filter+NaOH red colour observed Glycosides present.
5.Determination of Steroid's-
Salkowski Test-1ml Conc.Sulfuric acid+ extract+chloroform reddish-brown colour observed Steroid's present.

Figure 2 : Phytochemical Test



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III. RESULT & CONCLUSION

Table 1. Analysis of Phytochemical as given in above figure 2.

Sr. no.	Test	Observation	Inference
1	Collection	Fresh plant leaves were collected	-
2	Authentification	Plant Authentification was done	Plant herbarium was prepared
3	Extraction	Maceration was Done	Plant extract was collected
4	Separation TLC	Chromatographic Separation done by TLC	Rf value = 0.512
5	Phytochemical Evaluation		
6	Determination of Alkaloids	Brown ppt observed	Alkaloid present
7	Determination of Tannins	Blue colour observed	Tannin present
8	Determination of Flavonoids	Brown green colour observed	Flavonoids present
9	Determination of Glycosides	Red colour observed	Glycosides present
10	Determination of Steroids	Reddish-brown colour observed	Steroids presents

IV. ACKNOWLEDGMENT

We would like to express our social thanks to our teachers as well as our principal who gave us an opportunity to do this wonderful project and also helped us in research. Specially thanks to my GuideMs. Prachi.N.Padwal.

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