IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

PHAYTOCHEMICAL SCREENING OF NEEM,TULSI AND CORIANDER

Vaishnavi vijay daud[1], kailas rushindra kolte[1], utkarsha Santosh shelke[1], shital jadhav[1],

Mr. shivaji H. salunke[3]

[1]Rajesh bhaiyya tope college of pharmacy,Nipani-Bhalgaon, chhatrapati sambhajinagar,Maharashtra 431007, India.

[2]Y.B.Chavan college of pharmacy,chhatrapati sambhajinagar, Maharashtra, India.

[3]Department of pharmacy, Rajesh bhaiyya tope college of pharmacy, Nipani-Bhalgaon, Chhtrapati Sambhajinagar, Maharashtra 431007, India.

Abstract- Plant extract consist of more effective drugs of plant origin are useful in treatment of disease. Neem (Azadirachta indica) shows antimicrobial activity as well as antiviral, antifungal and antibacterial activity. The activity of neem is due to the bitter taste of neem leaves. Due to this bitter • **Tulsi**, it is a medicinal herb plant. This plant is mainly available in all places. It is also known as(Ocimum sanctum). Tulsi leaves are traditionally used in medicinal system.The qualitative screening of tulsi leaves consist of bioactive chemical compound like alkaloids, glycosides, flavonoids, phenolic compounds and saponins etc.taste, presence of components like alkaloid, flavonoids, glycosides etc.
Coriander-The coriander is an herbaceous plant. It belongs to the family **Apiaceae**. It is also known as (Coriandrum sativum).The seeds of coriander consist of small, globular fruits. It is used as a spice. It is also used to help in digestion, heart health, and has anti-inflammatory activity.
It plays an important role in the treatment and prevention of many diseases. The phytochemical screening of coriander consists of various chemical constituents, i.e., alkaloids, glycosides, flavonoids, and tannins.

Keywords: Neem, Tulsi, Coriander, Evaluation Parameters.

1.INTRODUCTION

Plants are a rich source of drugs. They are used in food supplements, folk medicine, modern medicines, as well as nutraceuticals.
They also play an important role in the prevention and treatment of human health disorders. In India, **Neem, Tulsi, and Coriander** have been used for medicinal purposes since ancient times.
In Neem, the major chemical constituents present are **Nimbin, Nimboin, Salannin, etc.**.

These plants show antimicrobial, antibacterial, and antifungal activities. Coriander contains an essential oil (0.03–2.6%) and is commonly used in the food and pharmaceutical industries. All parts of Neem, Tulsi, and Coriander are useful for medicinal purposes. The phytochemical screening of these plants reveals the presence of various chemical compounds such as glycosides, alkaloids, flavonoids, tannins, and saponins.
In Ayurveda, Siddha, and Unani systems of medicine, these plants

Materials and Methods

1. Collection of Plants

Collect the plants of Neem, Tulsi, and Coriander.
Collect the leaves and wash them thoroughly.
Shade dry the leaves.
Grind the dried leaves to obtain a fine powder.

2. Preparation of Extract

The powdered leaves were soaked in methanol and aqueous solution.
The extract was prepared using a Soxhlet apparatus.
The obtained extract was filtered through filter paper.
The filtered extract was collected and stored for further analysis.are widely used for the treatment of various diseases.

2.ROLE OF PHAYTOCHEMICAL SCREENING

1. Medicinal role
2. Pharmacological role
3. Role in drug discovery and development
4. Anti-inflammatory agent

3.Quantitative Test / Evaluation Parameters

1. Neem

Botanical Name: *Azadirachta indica*
Family: Meliaceae

Neem has various types of activities, i.e., antibacterial, anti-inflammatory, etc. It consists of various chemical constituents such as alkaloids, glycosides, tannins, saponins, etc.

(Fig of Neem)

2. Tulsi

Botanical Name: *Ocimum sanctum*
Family: Lamiaceae

Tulsi is traditionally used in Ayurveda and possesses a wide range of therapeutic properties. It is an aromatic and medicinal herb native to India. In Ayurveda, it is also known as the **"Queen of Herbs"** because of its numerous preventive and curative properties against various diseases.

(Fig of Tulsi)

3.Coriander

Botanical Name: *Coriandrum sativum*
Family: Apiaceae

Coriander is an herb belonging to the family Apiaceae. Fresh leaves and dried seeds (spices) are used for phytochemical screening. The leaves of coriander are commonly used to provide a refreshing, lemony or lime-like flavour. Today, coriander is cultivated in tropical and subtropical countries throughout the world and is widely used as a culinary and medicinal herb.

(Fig of coriander)

4. Quantitative Test

1. Test for Alkaloids

Take 2 ml of extract and add Mayer's reagent or Wagner's reagent. Formation of a cream or reddish-brown precipitate indicates the presence of alkaloids.

2. Test for Flavonoids

Take 2 ml of extract and add dilute ammonia solution to the extract. Then carefully add concentrated sulphuric acid. Formation of a yellow colour indicates the presence of flavonoids**.**

3. Test for Tannins

Take 2 ml of extract.
Add ferric chloride solution to it.
Formation of a blue-black or green colour indicates the presence of tannins.

4. Test for Saponins (Foam Test)

Take 2 ml of extract.
Shake vigorously with water.
Formation of stable foam indicates the presence of saponins.

5. Test for Glycosides

Add glacial acetic acid and ferric chloride to 2 ml of extract.
Formation of a brown coloured ring indicates the presence of glycosides.

Compound Test & Reagents		Ethanol Extract
Alkaloids	Wagner's Reagent	+
Flavonoid	NaOH Test	-
	H_2SO_4 Test	+
	Lead Acetate Test	+
Tannins	Ferric Chloride Test	-
Saponins	Foam Test	+
Quinones		-
Carbohydrates	Molisch's Test	+
	Fehling's Test	+
Terpenoids	Liebermann - Burchard Test	+
Sterols	Liebermann – Burchard Test	+
	H_2SO_4 Test	+
Phenols	Liebermann Test	+
Anthocyaines	NaOH Test	-

(Quantative test for neem table no.1)

chemical	Test Name	Procedure / Reagents	Positive Observation
Alkaloids	Mayer's Test	Extract + 1% + Mayer's Reagent	Red / White precipitate
	Dragendorff's Test	Extract + Dragendorff's Reagent	Orange-red color
	Wagner's Test	Extract + Wagner's Reagent	Reddish-brown precipitate
Flavonoids	Alkaline Reagent Test	Extract + 2% Solution	Intense yellow color
	Shinoda Test	Extract + Dilute + Magnesium Ribbon	Reddish-pink or red color
Phenols	Ferric Chloride Test	Extract + 10% solution	Bluish-green color
Tannins	Gelatin Test	Extract + 1% Gelatin Solution +	White precipitate
Saponins	Foam Test	Extract vigorously shaken with distilled water	Persistent foam layer
Carbohydrates	Molisch's Test	Extract + Molisch's Reagent + conc.	Dull violet ring at interface

(Quantative test for tulsi) Table no.

5.Evaluation Parameters

1. TLC (Thin Layer Chromatography)

TLC separates phytochemical compounds based on differences in adsorption and solubility between the stationary phase and the mobile phase.

Procedure

- Prepare the extract using ethanol or methanol.
- Draw a line at the bottom of the TLC plate.
- Apply a small spot of the extract using a capillary tube.
- Place the TLC plate in a developing chamber containing the mobile phase.
- Allow the solvent to rise through the plate.
- Remove the plate, dry it, and observe the separated spots.
- Calculate the Rf value for identification of phytochemical constituents.
- Allow the solvent to rise upward and dry the plate.
- Then remove the plate and observe the spots under UV light.

2. HPLC (High Performance Liquid Chromatography)

HPLC separates compounds under high pressure according to their interaction with the stationary phase and mobile phase.

Procedure

- Inject the extract into the HPLC instrument.
- Pass the mobile phase through the chromatographic column.
- Detect the compounds using a UV detector.
- Record the chromatogram peaks for analysis.

3. IR (Infrared Spectroscopy)

IR spectroscopy identifies functional groups based on the absorption of infrared radiation.

Procedure

- Prepare the dried extract.
- Mix the sample with KBr (Potassium Bromide).
- Place the sample in the IR spectrophotometer.
- Record the absorption spectrum.
- Analyze the spectrum to identify the functional groups present in the extract.

6.Conclusion

The conclusion of this study indicates that Neem showed a higher zone of inhibition against both Gram-positive and Gram-negative bacteria, demonstrating strong antimicrobial activity. Tulsi plant extract also exhibited significant antimicrobial properties and the ability to prevent microbial growth due to the presence of various bioactive chemical constituents. The phytochemical and pharmacognostic study of Coriander was carried out successfully and revealed the presence of important phytochemicals such as alkaloids, glycosides, proteins, tannins, and saponins. The phytochemical screening of Neem, Tulsi, and Coriander confirmed the presence of several bioactive compounds responsible for their medicinal, antimicrobial, and therapeutic properties. Therefore, these plants can be considered valuable natural sources of phytochemicals with potential applications in pharmaceutical and healthcare fields.

7.Result

Phytochemical screening of methanolic and aqueous leaf extract of Neem, Tulsi and coriander consist of presence and absence of alkaloid, glycoside, saponin should be present in Table No. 1.

Phytochemical screening of Tulsi leaf extract consist of presence and absence of alkaloid, glycoside, tannin should be present in Table No.

8.References

1. PubMed
2. Google Scholar
3. ScienceDirect
4. Sofowora A. *Medicinal Plants and Traditional Medicine in Africa*. Ibadan, Nigeria: Spectrum Books Ltd.; 1993.
5. References
6. Trease GE, Evans WC. Pharmacognosy. 11th ed. London, UK: Macmillan Publishers; 1989.
7. Harborne JB. Phytochemical Methods: A Guide to Modern Techniques of Plant

Analysis. London: Chapman and Hall Ltd.; 1973. p. 279.
8. Sundararaj T. Microbiology Laboratory Manual. IBMS, University of Madras, Tharamani, Chennai; 1997. p. 48–62.
9. Okwu DE. Phytochemicals and vitamin content of indigenous species of southeastern Nigeria. Journal of Sustainable Agriculture and the Environment. 2004;6(1):30–37.
10. Shah BA, Qazi GN, Taneja SC. Boswellic acids: a group of medicinally important compounds. Natural Product Reports. 2009;26:72–89.
11. Rabi T, Bishayee A. Terpenoids and breast cancer chemoprevention. Breast Cancer Research and Treatment, 2009;115:223–239.
12. Wagner KH, Elmadfa I. Biological relevance of terpenoids. Overview focusing on mono-, di- and tetraterpenes. Annals of Nutrition and Metabolism, 2003;47:95–106.
13. Sultana N, Ata A. Oleanolic acid and related derivatives as medicinally important compounds. Journal of Enzyme Inhibition and Medicinal Chemistry, 2008;23:739–756
14. Dhama K, Mani S, Chukrubarty S, Tiwari R, Kumar A, Selvaraj P, Rai RB. Herbal Remedies to combat Cancers inHumans and Animals. A Review International Journal of Current Research. 2013; 5: 1908-1919.
15. Mahima AK, Verma A, Kumar A, Rahal R, Deb SK. Immumomodulatary Therapeutic Potential of Herbal,Traditional and Ethnovertinary Medicine. Pakistan Journal of Biological Science. 2013;15: 754-774.
16. Padal SB, Sandhya B, Chandrasekhar P, Vijayakumar Y. Folklore treatment of skin diseases by the tribes ofMadugula Mandalam, Visakhapatnam District, Andhra Pradesh, India. Journal of Environmental Science,Toxicology and Food Technology.2013;4: 26-29
17. Kala S, Johnson M, Raj I, Bosco D, Jeeva S. Preliminary Phytochemical Analysis of Some Medicinal Plants of SouthIndia. Journal of Natura Conscientia. 2011; 2: 478-481.