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Chemistry

PHYTOCHEMICAL STUDY OF SOME MEDICINALLY IMPORTANT PLANTS.

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ABSTRACT The present study was aimed to analyze the flavonoids alkaloids and terpenoids in medicinally important plants such as *Mentha Arvensis* and *Azadirachta indica*. The Phytochemical analysis of *Mentha Arvensis* and *Azadirachta indica* revealed that flavonoids, alkaloids and terpenoids were present in leaves extract.

KEYWORDS : Phytochemical Extract, Mentha Arvensis, Azadirachta Indica.

INTRODUCTION:

The use of plants and plant products as medicines could be traced as far back as the beginning of human civilization. The earliest mention of medicinal use of plants in Hindu culture is founds in "Rigveda", which is said to have been written between 4500 - 1600 B.C. and is supposed to be the oldest repository of human knowledge. Plants are used as resource of drugs of traditional systems of medicine, nutraceuticals, food supplements, pharmaceutical intermediates and chemical entities for synthetic drugs (Hammer et al., 1999). In Ayurveda, the foundation of medicinal science of Hindu culture, in its eight division deals with properties of medicinal contain and various aspects of science of life and the art of healing(Rastogi and Mehrotra, 2002).

Azadirachta indica, commonly known as Neem. It is traditionally used as a source of many therapeutic agents. A. indica (leaf, bark and seeds) are known to contain antibacterial, antifungal activities and antiviral activity against vaccinia, chikungunya, measles, and Coxsackie B viruses1 .

Due to rich source of various types of ingredients of Azadirachta indica L. (neem) shows therapeutics role in health management. The most important bioactive compounds like azadirachtin, nimbolinin, nimbin, nimbidin, nimbidol, sodium nimbinate, gedunin, salannin, and quercetin. Leaves contain ingredients such as nimbin, nimbanene, 6-desacetylnimbinene, nimbandiol, nimbolide, ascorbic acid, n-hexacosanol and amino acid, 7-desacetyl-7-benzoylazadiradione, 7-desacetyl-7-benzoylgedunin, 17-hydroxyazadiradione, and nimbiol [A. Ali, *et al* 1993, M. A. Hossain 2011, C. Kokate 2010].

The aim of present study was to investigate alcoholic extraction, presence of bioactive metabolites in leaves of *Mentha Arvensis and Azadirachta indica* Plant.

MATERIALS AND METHODS:

COLLECTION OF SAMPLES

The Fresh leaves of *Mentha Arvensis* and *Azadirachta indica* plants were collected from Deulgaon Raja region, India (20°01'40.8"N+76° 02'11.4"E) and were identified by department of Botany of same college. The Fresh leaves were used for the study of phytochemical extraction.

SOLVENT EXTRACT

Ten gram of leaves powder was taken in the Soxhlet apparatus. It was fitted with round bottom flask with 500 ml absolute ethanol, and fitted with condenser. It was heated for recycling of the solvent. On complete extraction, the extract was transferred from round bottom flask to clean beaker. The extracts were weighted and noted down. Finally, the percentage yields were calculated. Percentage yield was calculated as dividing initial weight of raw material taken by final weight of extract (Bishnu Joshi, *et. al*, 2011).

IDENTIFICATION FOR BIOACTIVE COMPOUNDS

The following procedure was used to find the presence of the active chemical constituents such as flavonoids and terpenoids.

FLAVONOID

Extract solution (4mL) was treated with 1.5 ml of 50% methanol solution. The solution was warmed and then added metal magnesium. To this mixture, 4 - 5 drops of concentrated hydrochloric acid was added and observed for red coloration for flavonoids and Orange color coloration for flavones (Siddiqui and Ali, 1997, Bishnu Joshi, *et. al*, 2011).

ALKALOID

Most alkaloids are precipitated by neutral or slightly acidic solution by Mayer's reagent (Evans, 2002). All extraction solutions were treated few drops of Mayer's reagents it produces white yellowish precipitate (Siddiqui and Ali, 1997).

TERPENOID

Extract solution (4 mL) was treated with 0.5 ml of acetic anhydride and 0.5 ml of chloroform. Then sulphuric acid (conc.)was added slowly to the mixture and red violet coloration indicated the presence of terpenoid (Siddiqui and Ali, 1997).

RESULTS AND DISCUSSION:

In this study the greenish leaves of *Mentha Arvensis* and *Azadirachta indica* were collected, identified, dried, powdered and used for determination of various chemical constituents by performing qualitative chemical tests for the ethanolic extract.

This study revealed that both *Mentha Arvensis* and *Azadirachta indica* contain various bioactive chemical constituents such as, flavanoids, alkaloids and terpenoids. The results were given in Table-1.

Table 1. A result of phytochemical analysis of *Mentha Arvensis* and *Azadirachta indica* leaves.

Sr.No.	Chemical constituents	*Mentha Arvensis*	*Azadirachta indica*
1.	Flavonoids	Positive	Positive
2.	Alkaloids	Positive	Positive
3.	Terpenoids	Positive	Positive

CONCLUSIONS:

The phytochemical study of *Mentha Arvensis* and *Azadirachta indica* leaves found that various bioactive chemical constituents like flavanoids, alkaloids and terpenoids. These plants may also contains more bioactive metabolites, so there is need to investigate by using some more advanced techniques.

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