

Qualitative Analysis of Selected Medicinal Plants, Tamilnadu, India

¹C. Chitravadivu, ²S. Manian and ³K. Kalaichelvi

¹Department of Biotechnology, K.S. Ranagasamy College of Technology,
Tiruchengode-637 215, Tamilnadu, India

²Department of Botany, Bharathiyar University, Coimbatore-46, Tamilnadu, India

³Department of Botany, Vellalar College for Women, Erode-9, Tamilnadu, India

Abstract: The Qualitative analysis is very essential for identifying the compounds present in the medicinal plants. We have collected four medicinally important medicinal plants such as *Acalypha indica*, *Cassia auriculata*, *Eclipta alba* and *Phyllanthus niruri* for quantitative analysis. The experiment carried out in the selected medicinal plants leaves and roots. The results are discussed with the available literature.

Key words: Qualitative analysis • Medicinal plants • *Acalypha indica* • *Cassia auriculata*

INTRODUCTION

In India, the use of different parts of several medicinal plants to cure specific ailments has been in vogue from ancient times. The indigenous system of medicine namely Ayurvedic, Siddha and Unani have been in existence for several centuries. These systems of medicine cater to the needs of nearly seventy percent of our population residing in the villages. In Homeopathy system, 70% of the medicines are prepared from plants. As Homeopathy originated in Europe naturally, majority of the drugs prepared from plants are of exotic origin.

Ours is a vast country where wide variations in climate, soil, altitude and latitude are available. Nature has bestowed on us a very rich botanical wealth and a large number of diverse types of plants grow wild in different parts of the country. India is a country rich in indigenous herbal resources which grow on their varied topography and under changing agro climatic conditions permitting the growth of almost 20,000 plants species, of which about 2,500 are of medicinal value [1]. In Indian scenario, it has been recognized that 2,500 plants have been found to be have medicinal values out of 17,000 plants [2].

The world is now looking towards India for new drugs to manage various challenging diseases because of its rich biodiversity of medicinal plants and abundance of traditional know-how such as Siddha, Ayurveda etc., to cure different diseases [3-5].

From over 3, 00,000 species of higher plants to occur in nature, only about 2 percent have been screened so far. Extract of plants from 157 families have been reported to be active against microorganisms [6].

MATERIALS AND METHODS

Plant materials are collected from the Revenue Village of Kolanalli, Erode District. Plants are identified and confirmed with the authentic, Thindal. Plant selected for the present study was *Acalypha indica*, *Cassia auriculata*, *Eclipta alba* and *Phyllanthus niruri*. Fresh leaves and roots are collected and shade dried under room temperature. The dried leaves and roots are grained into a coarse powder and used for further investigations.

The dried powdered leaves and roots were macerated by using mortar and pestle. The collected Sam herbarium specimen available in the Botany Department of Vellalar College for Women, Erode was analyzed for phytochemical analysis by quantitative analysis.

Qualitative Analysis

Test for Alkaloids: To 2ml of test solution, added 2 N HCL, aqueous layer formed was decanted and to that added few drops of Mayer's reagent. The test result was observed.

Table 1: Qualitative analysis of root and leaf samples of certain medicinal plants ($\mu\text{g}/100 \text{ mg}$)

Phytochemicals	Name of the Plants			
	<i>Acalypha indica</i>	<i>Cassia auriculata</i>	<i>Eclipta alba</i>	<i>Phyllanthus niruri</i>
Anthroquinone	-	+	-	+
Alkaloids	+	+	-	-
Catachols	+	-	-	-
Flavonoids	+	+	-	+
Phenolic compounds	+	+	+	-
Saponins	+	+	+	+
Steroids	+	+	+	+
Tannins	-	+	+	+
Triterpenoids	-	-	+	+

*Values are mean of triplicate determinations on dry weight basis

Test for Anthroquinone: To 2ml of test solution, added magnesium and acetate solution. The result was observed.

Test for Catachol: To 2ml of test solution in alcohol added Erlich's reagent and few drops of concentrated HCL. The result was observed.

Test for Flavonoids: To 2ml of test solution, added alcohol and a bit of magnesium. Then few drops of concentrated hydrochloric acid was added and boiled. The test result was observed.

Test for Phenols: To 2ml of test solution, added alcohol and then few drops of neutral ferric chloride solution was added. The test result was observed.

Test for Saponins: To 2ml of test solution, added 2ml of water and shake well. The result was observed.

Test for Steroids: To 2ml test solution, added minimum quantity of chloroform. Then 3-4 drops of acetic anhydride and 3 drops of concentrated sulphuric acid were added. The test result was observed.

Test for Tri Terpenoids: To 2ml of test solution, added pieces of tin and 2 drops of thionyl chloride. The test result was observed.

Test for Tannins: To 2ml of test solution, added lead acetate solution. The result was observed.

RESULTS AND DISCUSSION

The qualitative analysis of the extracts from the root and leaf sample of *Acalypha indica* showed the presence of phytochemical constituents such as *alkaloids, catachols, flavonoids, phenolic compounds,*

saponins and *steroids*. At the same time, the phytochemical constituents like *anthroquinone, tannins* and *triterpenoids* were absent (Table 1).

The qualitative analysis of the extracts from the root and leaf sample of *Cassia auriculata* exhibited the presence of phytochemical constituents such as *anthroquinone, alkaloids, flavonoids, phenolic compounds, saponins, steroids* and *tannins*. The phytochemical constituents like *phenolic compounds, saponins, steroids, tannins* and *triterpenoids* were present qualitatively in the leaves and roots of *Eclipta alba*. Root and leaf sample of *Phyllanthus niruri* showed the presence of *phenolic compounds, anthroquinone, flavonoids, saponins, steroids, tannins* and *triterpenoids*.

The plant products over synthetic compound in the treatment of diseases are needed, because it does not have a deleterious effect in higher plants and animals including man. The urge in research on new drugs from natural sources is now moving out of the herbalists shop, away from the core texts into the drug research laboratories [7]. India is a home to a variety of traditional medicine systems that relay to a very large extent on native plant species for their raw drug materials [8-10]. Therefore, now there is a need to look back towards the traditional medicine which can serve as novel therapeutic agent. The qualitative analysis revealed the presence of the biomolecules such as *anthroquinone, alkaloids, catachol, flavanoids, phenolic compounds, saponins, steroids, tannins* and *triterpenoids* respectively.

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