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Research Article

PHYTOCHEMICAL INVESTIGATION IN *COMMELINEA BENGALENSIS & CYANOTIS CRISTATA*

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Abstract: Humans are directly or indirectly approach products of medicinal or common weed plants. *Commelina benghalensis* and *Cyanotis cristata* both are herbaceous weeds belongs to family Commelinaceae which distributed over all ranges of India. From the literature available it was learnt that there were no sub stantial work was carried out yet for its chemical constituents. Hence efforts were made to investigate the secondary metabolites present in leaves of both species. The air dried leaf powder of both studied species are extracted successively with universal solvent (Distilled water) and alcohol. Preliminary phytochemical investigation of above extract reveled that presence of Saponins, Tannins, Carbohydrates, Glycosides, Flavonids, Alkaloids, and Terpenoids. The present study provides preliminary details to characterize some pharmacognostical parameters of these of Commelinaceae Members.

Key**words:** Phytochemical screening, *Commelina bengalensis*, *Cyanotis cristata*

Introduction

The plants are integral part of nature. For human uses plants have an almost endless variety. It is enriched with flora & fauna and therefore the plants have been used since ancient times for treatment of human ailments. Phytochemicals are non nutritive plant chemicals that have protective or disease preventive properties. Plant produces these chemicals to protect itself but recent research demonstrates that many phytochemicals can protect humans against various diseases[1].

The weed plant like *Commelina bengalensis* & *Cynotis cristata* are belongs to family commelinaceae. The two weeds are commanly found in many crop fields during kharip season (june to September). For current investigation these are collected from Pimpalgaon in Satara district. Phytochemicals are present in plant have been linked with the healing properties of plants. In addition to their active ingradients weeds plants also contain minerals, vitamins, alkaloids, saponins, phenols, tannins ,phytosterols, triterpens, terpenoids as secondary metabolites that are important in supporting a particular activity in plants[2] . Plants produces a remarkably diverse array of over 50,000 low molecular mass natural products also known as secondary metabolites. Phytochemical components are responsible for both pharmacological use & toxic activities in plants. These metabolites are said to be useful to the plant itself but at higher concentration can be toxic to animals including man[3].

Materials and Methods

Preparation of Extrats

Fresh weight 40g of both the weeds namely *Commelina bengalensis* & *Cynotis cristata* were taken & subjected to ovan for drying . Dry powder & both plant selected species were extracted into solvent like alcohol & disitilled water. Filtrate of these extract were used for further analysis

Phytochemical Screening of Plant extracts

The selected species were extracted into solvent like alcohol & distilled water. The aqueous extract was freshly prepared &taken into different test tube. The phytochemical screening of given samples following tests were carried out for analysis.

Detection of Alkaloids

Extracts were dissolved individually in dilute hydrochloric acid & filtered

Mayer's Test:

Filtrates were treated with Mayer's reagent (potassium mercuric iodide). Formation of yellow coloured precipitate indicates the presence of alkaloids

Wagner's Test:

Filtrates were treated with Wagner's reagent (Iodine in potassium Iodide). Formation of brown / reddish precipitate indicates the presence of alkaloids.

Dragendroff's Test:

Filtrates were treated with Dragendroff's reagent (solution of potassium Bismuth Iodide). Formation of red precipitate indicates the presence of alkaloids.

Hagers test:

Filtrates were treated with hagers reagent (saturated picric acid solution 0. Presence of alkaloids confirmed by the formation of yellow coloured precipitate

Detection of carbohydrates:

Extracts were dissolved individually in 5ml distilled water & filtered. The filtrates were used to test for the presence of carbohydrates

Molischs Test:

Filtrates were treated treated with 2 drops of alcoholic α-naphthol solution in a test tube . Formation of the violet ring at the junction indicates the presence of carbohydrates.

Benedicts Test:

Filtrate were treated with Benedict 's reagent and heated gently. Orange red precipitate indicates the presence of reducing sugars.

Fehling's Test:

Filtrates were hydrolysed with dil.HCl neutralized with alkali and heated with fehlings's A and B solution. Formation of red precipitate indicates the presence of reducing sugars.

Detection of Saponins:

Froth Test:

Extracts were diluted with distilled water to 20 ml and this was shaken in a gradudated cylinder for 15 minutes. Formation of 1cm layer of foam indicates the presence of saponins.

Detection of Phytosterols:

Salkowsk's Test:

Extracts were treated with chloroform and filtered. The filtrates were treated with few drops of conc.sulphuric acid of shaken and allowed to stand. Appearance of golden yellow colour indicates the presence of triterpenes

Detection of Phenols:

Ferric Chloride Test:

Extracts were treated with 3-4 drops of Ferric Chloride solution. Formation of bluish black colour indicates the presence of phenols.

Detection of flavonoids:

Alkaline Reagent test:

Extracts were treated with few drops of sodium hydroxide solution formation of intense yellow colour, which becomes colourless on addition of dilute acid, indicates the presence of Flavonoids.

Test for Steroids:

5 drops of concentrated H_2SO_4 were added to 1ml of leaf extract development of red colouration was indicative of a positive reaction for steroids.

Test for Terpinoids:

2ml of leaf extract treated with 2ml of chloroform and few drops of concentrated H2SO4 occurance of light orange colouration indicates presence of terpenoids.

Test for Glycosides:

Extracts was treated with 2ml of Glacial acetic acid,add 1drop of $fecl_3$ and 1ml of concentrated H_2SO_4 apperance of brown colouration indicates the glycosides.

Test for Quinone:

Extracts was treated with concentrated HCl appearance of green colouration indicates presence of quinine.

Test for Triterpens:

To 0.5 g each of the extract was added 2ml of chloroform concentrated H_2SO_4 [3ml] was carefully added to form a layer. A reddish brown colouration of the interface indicates the presence of terpenoids.

Test for tannins:

2ml of leaf extracts with 1% of lead sacetate solution occurance of yellowish precipitat shows presence of tannin.

Results & Discussion

Table 1: The Phytochemical screening of *Commelina bengalensis* and *Cynotis cristata*

Phytsochemical screening	*Commelina bengalensis*		*Cynotis cristata*	
	Distilled Water	**Alcohol**	**Distilled water**	**Alcohol**
Detection of alkaloids				
Mayer's test	+	+	-	+
Wagner's test	+	+	+	+
Dragendroff's test	-	-	-	-
Hager's test	+	+	+	+
Detection of carbohydrates				
Molisch's test	-	+	-	-
Benedicts test	+	+	-	+
Fehling test	+	+	+	+
Detection of saponins				
Froth test	+	-	+	-
Detection of phytosterol				
Salkowski's test	+	+	-	-
Detection of phenols				
Ferric chloride test	-	-	-	-
Detection of Flavonoids				
Alkaline reagent test	+	+	+	-
Test for Steroids	-	-	-	-
Test for Terpenoids	-	+	-	-
Test for Glycosides	-	-	-	-
Test for Quinon	-	+	-	+
Test for Triterpens	-	-	-	-
Test for Tannins	+	+	+	+

Nature has been a source of medicinal agent for thousands of years & an impressive number of modern drugs have been isolated from natural sources[4]. Here the studied weeds viz., *Commelina bengalensis & Cyanotis cristata* belonging to the family Commelinaceae are widely growing

The different crude extracts were carried out with help of universal solvent (water) and alcohol both solvents. All the extracts were subjected to preliminary identification of phyto constituents which showed the presence of carbohydratesin both species and both extracts by Fehling test in aqueous extract of *Commelina bengalensis* only Molisch's reagent test found absent, while in aqueous extract of *Cyanotis cristata* both Molisch's reagent test and Benedicts tests were found negative. Also tannins test and alkaloids by Hager's test both gives positive remark in both species and all extracts (Table 1).similar kind of result observed by Thite *et al.*[5] in 7 crude plant drugs available in market. Many phytochemicals are non nutritive plant chemicals that have protective or disease preventive properties[1]. It is evidence from results studied plant aliquots shows negative tests for non nutritive phytochemicals like steroid, triterpens and phenols. The systemic research for useful bioactives from the plants is now considered to be a rational approach in nutraceuticals and drug research. The results of phytochemical analysis comprehensively validate the presence of therapeutically important and valuable phytochemicals (Alkaloids, Flavonoids and Tannins).

Conclusion

Medicinal plants are a source of great economic value all over the world. Hence that these important genetic resources now going under threatened categories. To save these resources now there is need to give substitute for these resources. Hence here an attempt was carried out which shows positive interface as substitute. The phytochemicals present in leaves of *Commelina bengalensis & Cynotis cristata* have well known curative activity against several human pathogens and therefore could suggest the use traditionally for the treatment of various diseases.

plant throughout India. On the literature available it can be said that these plants yet not tested for their valuable medicinal properties. Hence, current study deals with the pharma-cognostical identification and Phytochemical screening of the selected plant.

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