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Research Article

PRELIMINARY PHYTOCHEMICAL ANALYSIS OF *PARTHENIUM HYSTEROPHORUS* LEAVES

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ABSTRACT

Partheniumhysterophorus L. from the family of Asteraceae, popularly known as Congress weed, Carrot weed, Star weed, Fever few, White top, ChatakChandani, Bitter weed. The ability of its seeds to germinate in any season of the year, makes it a constantly flourishing component of the vegetation. The given four extract aqueous, acetone, ethanol and methanol extracts of leaves of the fresh *Partheniumhysterophorus* L were screened for the presence of different phytochemical by standard procedure an extract from the *Partheniumhysterophorus* L. leaves were screened for their phytochemical constituents. The present study indicates that the fresh plant contains different classes of secondary metabolites such as alkaloids, steroids, flavonoids, terpenoids, saponins, cardiac glycosides, tannins etc. Phytochemicals are certain non-nutritive plant chemicals which have allelopathic properties effect. Therefore, it is of interest to investigate the phytochemical constituents of the Indian plant *Partheniumhysterophorus*L.

INTRODUCTION

The life of each organism present in the world is based on the green vegetation which it lives around. Every organism in this universe has a specified role to play. Many play a conservative role, among those plants are being the prime base as they are sustaining our environment. Even several centuries before the invention of modernized equipment's and drugs, plants provided cures for many severe medical illnesses. Even today, plant materials continue to play a major role in primary health care as therapeutic remedies in many developing countries.

In the recent years we were hugely depended on the commercial and synthetic drugs which have resulted in the adverse side effects, resistance among several pathogenic organisms and much more. This scenario pushed us to go back to our mother of all producers, the plants to look for effective medicine of lesser or no side effect. *Partheniumhysterophorus*L. from the family of Asteraceae, popularly known as Congress weed, Carrot weed, Star weed, Fever few, White top, ChatakChandani, Bitter weed. The ability of its seeds to germinate in any season of the year, makes it a constantly flourishing component of the vegetation**.**

MATERIAL AND METHODS

Collection of samples

Fresh plant leaves of *Partheniumhysterophorus* were collected from Ahmednagar. The leaves are thoroughly washed through tap water and dried under shade for 3-5 days. The dried leaves are ground to fine powder and stored in polythene bags for further use.

Preparation of extracts

2 grams of dried powder of *Partheniumhysterophorus* leaves was packed in five separate round bottom flask for sample extraction using five solvents namely aqueous, acetone, ethanol and methanol. The extraction was conducted with 20ml of each solvent for a period of 24 hours. At the end of the extraction the respective solvents were concentrated under reduced pressure and the crude extracts were stored in refrigerator

Phytochemical analysis

Various chemical tests are conducted to identify represented of different phytochemicals terpenes, alkaloids, flavonoids, glycosides, tannins and phenolic compound based on the protocols available in the literature.

Test of Alkaloids (Wagner's Test)

Take 1ml of plant extract and add 3-5 drops of Wagner's reagent and observe for the formation of reddish brown precipitate or colouration.

Test of carbohydrates (Molisch's test)

Take 1ml of plant extract and add 3-5 drops of Molisch'sreagent, along with this add 1ml of conc.Sulphuric

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acid (H_2SO_4) down the side of the test tube. Then allow the mixture to stand for 2-3 min. Observe for the formation of red or dull violet colour at the interface of the two layers is positive result.

Test for Cardiac Glycosides (Keller Kelliani'sTets)

Take 1ml extract and treat it with 1ml of glacial acetic acid and 2-3drops of 5% ferric chloride solution. To this mixture add 0.5mlof conc.H_2SO_4. Observe for a brown ring at the interface shows the presence of deoxy sugar characteristics of cardenolides. A violet ring may appear below the ring while in the acetic acid layer, a greenish ring may form.

Test for Flavonoids (Alkaline reagent Test)

Take 1ml of extract and treat it with 3-5 drops of 20% NaOH solution. Observe for the formation of intense yellow colour, which becomes colourless on addition of 0.5 ml dilute HCl indicates the presence of flavonoids.

Test for Phenols (Ferric Chloride Test)

Take 1ml of extract and add 5-6 drops of aqueous ferric chloride solution and observe for the formation of deep blue or black colour.

Test for Amino acid and Proteins (1%Ninhydrin solution in Acetone)

Take 1ml of extract and add 2-5 drops of aqueous Ninhydrin solution and keep it in a boiling water bath for 1-2 min and observe for the formation of purple colour.

Test for Saponins (Foam test)

Take 1ml of extract and add 5ml distilled water and shake vigorously. Observe for the formation of persistence foam for 10-15 min that confirms the presence of saponins.

Test for Tannins (Braymer's test)

Take 1ml of extract and treat it with 1ml of 10% alcoholic ferric chloride solution and observe for the formation of blue or greenish colour.

Test for Terpenoids (Salkowski Test)

Take 1ml of extract and treat it with 0.5ml of conc. HCl and observe for the formation of yellow precipitate or colouration.

Test for Quinones

Take 1ml of extract and add 5ml distilled water and observe for the turbidity.

Test for Coumarins

Take 1ml of extract and add 1.5ml of 10%NaOH then observe for the formation of yellow colour which indicates the presence of coumarins.

RESULTS AND DISCUSSION

Table 1.shows the preliminary phytochemical constituents of Aqueous, Acetone, Ethanol and Methanol of *Partheniumhysterophorus*. The phytochemical screening of the crude extract revealed the presence of Alkaloids, Carbohydrates, Cardiac glycosides and Flavonoids in aqueous and methanol and acetone and ethanol extract remaining are present whereas the Coumarins and Terpenoids were absent in all the extracts. Phenols, Quinones and Resins were present only in aqueous extract and remaining showed negative result. Amino acid and Proteins are present in Aqueous, Methanol and Ethanol and absent in Acetone. Tannins are present in acetone, methanol and ethanol and remaining solvents showed negative result. Saponins are present in aqueous and acetone and methanol extract and absent in ethanol extract.

Table 1 Preliminary phytochemical constituents of aqueous, acetone, ethanol, and methanol extracts of *Partheniumhysterophorus*L

Sr. No.	Phyto Constituents	Aqueous extract	Acetone extract	Methanol extract	Ethanol extract
1	Alkaloids	+++	+++	+++	+++
2	Carbohydrates	+++	+++	+++	+++
3	Cardiac glycosides	+++	+++	+++	+++
4	Flavonoids	+++	+++	+++	+++
5	Phenol	+++	---	---	---
6	Aminoacids / Proteins	+++	---	+++	+++
7	Saponins	+++	+++	+++	---
8	Tannins	---	+++	+++	+++
9	Terpenoids	---	---	---	---
10	Quinones	+++	---	---	---
11	Resins	+++	---	---	---
12	Coumarins	---	---	---	---

Positive +++, Negative ---

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