ORIGINAL RESEARCH PAPER

Medicinal Plants

PHYTOCHEMICAL ANALYSIS OF LEAVES OF TRIGONELLA FOENUM-GRAECUM PLANT FROM KARMAD AREA OF AURANGABAD IN MAHARASHTRA STATE

KEY WORDS: Fenugreek, Trigonella Foenum-Graecum

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ABSTRACT

Trigonella is genus from the family Fabaceae which is green leafy vegetable commonly found in India and Europe .The genus Trigonella is a greek word which means "three angled"and the word fenugreek which is derived from foenum-graecum means Greek hay. Trigonella Foenum-Graecum is commonly known as fenugreek . Nowadays it is found in almost every part of the world due to its tremendous applications in daily life as food as well as medicinal purpose. Trigonella Foenum-Graecum shows anti-diabetic, anti-oxidant , anti-inflammatory properties as well as it is used in stomach problems and also during pregnancy. Trigonella Foenum-Graecum plant is famous in India for its daily purpose as food where its seeds are also shows good medicinal properties. The current study deals with the analysis of phytochemicals present in Trigonella Foenum-Graecum which confirms the presence of various organic moieties , elements present in it. Vitamin-A , Vitamin-C, Vitamin-K, riboflavin, niacin, sapogenins, potassium , calcium and some other elements were found qualitatively.

INTRODUCTION

Aurangabad is old and historical place in Maharashtra state in India which is having green ecofriendly environment. Aurangabad and near regions associated ith it are full of flora and fauna .Feenugreek plant can grow upto one feet in height from a single hairy hollow stem , with stems that branch at base and the greeny leafy vegetable looks similar to clover leaves[1-5].Fenugreek is useful cover crop to fix nitrogen in the soil, a critical nutrient in the plant growth. Fenugreek shows anti-diabetic ,anti-microbial, anti-inflammatory, increases milk in breast feeding women, useful in blood pressure control and also in various other medicinal purpose[6-16].Many researchers of various regions around the globe are investigating different natural products in their regional plant. Considering all these facts it is of great interest to investigate the phytochemicals *in Trigonella Foenum-Graecum* from Karmad village place in Aurangabad (PIN CODE 431007)

MATERIALS AND EXPERIMENTAL METHODS

Collection of Sample

Freshly prepared solutions are used through current work. All AR grade chemicals are used through present analysis. The solvents were purified by standard method before used. The plant were collected in winter season in august 2022 from Farm in Karmad region in Aurangabad district of Maharashtra. The plant leaves along with stem were cut anddried in shade and then the dried leaves were taken in mortor pestle for making them in fine powder form. This fine powder is used for different phytochemical analysis.

Determination of Si, P, S, Mn and Ti elements

Plant sample was taken and kept in furnace at 500 °C for 10 hours then there is formation of ash. The ash was transferred into conical flask to it 20% HCl was added, the reaction mixture was continuously shaken vigorously for 1 hour and was filtered. The filtrate was taken to determine Mg, Ca, Pb, Fe and Cu. Qualitative analysis [17]was carried out by given literature method and result is given in the table below.

Test For Determination Of Organic Compounds

Test For Alkaloids

Plant sample was refluxed with acetic acid in ethanol and was concentrated, cooled in water bath. It was filtered and in filtrate Mayer's reagent was added, grey colour was obtained.

Test for Flavonoids

The sample of stock solution was taken in a test tube and to it was added few drops of dilute NaOH solution. An intense yellow colour was appeared in the test tube. It became colourless when on addition of few drops of dilute acid that indicated the presence of flavonoids.

Test for Saponins

In frothing test, the sample was taken in a test tube and test tube was stoppered and shaken vigorously for five minutes, it was allowed to stand for 30 minutes and observed for honeycomb froth which indicates the presence of saponins.

Folic Acid , Riboflavin ,Niacin, sapogenin, steroid, were determined by known literature methods[18-20].

Analysis of vitamins

Test for Vitamin-A

In 2 ml of chloroform , 100 mg of the powdered sample was dissolved and it is filtered , to the filtrate , 5 ml of antimony trichloride solution was added . The presence of transient blue color indicates presence of vitamin-A.

Test for Vitamin-C

In 5 ml of water , 1 gm o sample was diluted and a drop of 5%sodium nitroprusside and 2 ml of NaOH is added. Few drops of HCL was added dropwise , yellow color turns blue. This indicates the presence of vitamin-C

RESULT AND DISCUSSION

The result shows that elements such as Si, P, S, Mn, Ti and vitamins such as vitamin-A , vitamin-C and organic compounds such as alkaloids, flavonoids, saponins have been found in the sample and are given in the **Table No 1**.

Table No 1 Elements obtained in leaves of *Trigonella Foenum-Graecum*

S.No	Element/compound	Test	Result
1	Silicon	+ve	present

2	Phosphorous	+ve	present
3	Sulphur	+ve	present
4	Manganese	+ve	present
5	Titanium	+ve	present
6	Vitamin-A	+ve	present
7	Vitamin-C	+ve	present
8	Folic Acid	+ve	present
9	Sapogenins	+ve	present
10	Steriods	+ve	present
11	Riboflvin	+ve	present
12	Niacin	+ve	present
13	Saponins	+ve	present
14	Alkaloids	+ve	present
15	Flavanoids	+ve	present

In this way the phytochemical analysis of *Trigonella Foenum-Graecum* plant was carried out and results obtained during the work was given in the above table.

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