PHYTOCHEMICAL SCREENING OF WHOLE PLANT EXTRACT OF *Momordica dioica*(Roxb.)

Nupur Joshi*, Dr K.w shah**, Dr Santosh Mujalde***

Research scholar Botany Barkatullah university Bhopal (M.P)*
Professor of Botany Govt. P.G college Pipariya(M.P)**
Scientist (Agronomy), college of Agriculture, Indore (M.P) ***

**ABSTRACT:** *Momordica dioica* Roxb. (cucurbitacae), has been commonly used as a medicinal vegetable for cooking purpose. It is traditionally used diabetes, blood pressure, fever, migraine, liver disorders, intestinal worm infestation, stomach disorder etc. secondary metabolite are belong to such classes compound which are known to show curative activity against several ailments in man and human and there for could explain the use of traditional of medicinal plant for the treatment of illness. The present study was undertaken to explore the phytochemical constituents of whole plant extract of *Momordica dioica* roxb. Preliminary phytochemical analysis revealed the presence of secondary metabolite such as saponins, terpenoids, alkaloids, tannins flavonoids in ethanolic extract and aqueous extract and absence of phytosterols in both aqueous ethanolic extract.

**Key word:** Phytochemical, Secondary metabolite, *Momordica dioica* etc.

I. Introduction – Cucurbitaceae family is commonly known as the gourd family, melon or pumpkin family. This family is composed of 118 genera and 825 species, which are widely distributed in the warmer region of the world. The major contribution for economically important domesticated species is cultivated for medicinal and nutritional value (Habib-ur-Rehman 2003). Phytochemical are naturally occurring biochemical that give plants their colour, flavor smell and texture. In addition plants developed this biochemical means of protection from highly reactive molecule of oxygen and a number of environment hazardous such as virus, bacteria and fungi that could affect their chance for survival (Barries1996). *M. dioica* roxb. is medicinally and economically important plant it is seasonal plant with tuberous root. It is cultivated for its edible fruits used as vegetable alkaloid are the major component found in the plant (sadyojatha A.M1996). The medicinal values of plants lie in some chemical substance known as phytochemical that produce definite physiologic action on the human body. Knowledge of the chemical constituents of the plant is desirable not only for the discovery of therapeutic agent but also such information may be of value as precursors for the synthesis of complex chemical substance (Edego H.O 2005).

II. Material and Methods –

2.1 Collection of plant material
Sample of whole plant (stem, leaf, seed, and fruits) will be collected from Barwani distric western Nimar (M.P)

2.2 Processing of plant material
The stem, leaves, seeds and fruits of *M. dioica* will be washed in running water and cut into small bits to facilitate drying and grind by according to standard procedure. The powered sample were wrapped in paper and packed in polythene bag to avoid moisture and contamination.

2.3 Solvent extraction
The extraction of *Momordica dioica* was carried out by soxhlation method (Harborne 1844) dried powder was subjected to soxhlet extraction unit and ethanol used as solvent. soxhlation process was allowed to carry out for 12 cycle with the maintenance of 78°C for ethanolic solvent respectively the solvent extract was concentrate in water bath at temperature 40°C using beaker and preserved in air tight bottles at 5°C for further experimentation the extract were diluted and then used for the test.

III. Phytochemical screening –
Solvent extract obtained from whole plant extract of plant material was being analyzed for detection of phytochemical compound. Following phytochemical analysis test were based on the visual observation of colour modification or precipitate formation after the addition of specific reagents. (Harborne, 1973 and Krishnaiah et.al, 2009)

Detection of alkaloids.
- Detection of tannins.
- Detection of flavonoids.
- Detection of saponins.
- Detection of glycosides.
- Detection of terpenoids.
- Detection of phytosterols.
3.1 Test of phytochemical

A small portion of the aqueous and ethanolic extracts was subjected to the phytochemical test using methods to test for alkaloids, terpenoids, saponins, flavonoids, terpenoid phenols, glycosides and phytosterol were performed following the method described by Harborne, 1973 and Krishnaiah et.al, 2009

3.2 Test for alkaloids

About 0.2 g extract warmed with 2% H2SO4 for two minutes, filtered and few drop of Dragendorffs reagent added, orange red precipitate indicates the presence of alkaloid.

3.3 Test for tannins

Small quantity of extracts mixed with water, heated, filtered and ferric chloride added a dark green solution indicate the presence of tannins.

3.4 Test for terpenoids

About 0.2 g extract was mixed with 2ml chloroform and concentrate H2SO4 was carefully added to form a layer. A reddish brown coloration of the interface formed indicating the presence of terpenoids.

3.5 Test for saponins

About 0.2g of the extract shaken with 5 ml of distilled water and then heated to boil appearance of creamy mix of bubbles shows the presence of saponins.

3.6 Test for flavonoids

Extract of about 0.2 g dissolved in dilute NaOH and HCl added. A yellow solution that turns colorless indicates the presence of flavonoids.

3.7 Test for glycosides

The extracts hydrolyzed with HCl solution and neutralized with NaOH solution. A few drops of Fehling solution A and B were added Red precipitate indicate the presence of glycosides.

3.8 Test for phytosterols

Sterols were detected by the reaction of Liebermann. Crude extract was dissolved in 0.5 ml chloroform. Treated with Liebermann Burchardt. A ring of blue green, showed a positive reaction.

iv. Result and Discussion

The phytochemical screening of the extract showed that plant contain terpenoid, saponin, alkaloid, tannin, flavonoids, and phenols and absence of phytosterols etc. preliminary phytochemical screening is an important step in the chemical and pharmacological study of a medicinal plant. It may be suggest possible pharmacological group, highlighting a close relationship with its main therapeutic uses.

v. Data table

Qualitative analysis of phytochemicals in ethanol and aqueous extracts of M. dioica whole plant extract.

(+)) Indicates presence (−) Indicates absence

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Phytochemical</th>
<th>Ethanol</th>
<th>Aqueous</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alkaloid</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2</td>
<td>Flavonoids</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3</td>
<td>Phenols</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>4</td>
<td>Glycoside</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>5</td>
<td>Tanins</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>6</td>
<td>Saponins</td>
<td>+</td>
<td>+ (low)</td>
</tr>
<tr>
<td>7</td>
<td>Phytosterols</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Terpenoids</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

vi. Conclusion

In the present study, evaluation of phytochemicals studies of M. dioica whole plant extract provides valuable information regarding their chemical constituents. This may be useful for the standardization and isolation of bioactive compounds from this plant. The constituents of M. dioica whole plant extracts may have several properties that leading to opening up new avenues in the use of natural products for therapeutic purpose.

vii. Acknowledgment

The author thankful to Dr.santosh mujalde and Dr.K.W.Shah for their support and help.

viii. Reference


5. Sadyojatha AM, Vaidya VP (1996); *Indian drug* vol 33; 473:475