

PRILIMINARY PHYTOCHEMICAL ANALYSIS OF WHOLE PLANT EXTRACT OF *Cucurbita* *Maxima(Duch.Ex.lamk)*

Nupur Joshi*, Dr K.w shah**, payal joshi***
Research scholar Botany Barkatullah university Bhopal (M.P)*
Professor of Botany Govt. P.G college Pipariya(M.P)**
Research scholar Botany Barkatullah university Bhopal (M.P) ***

Abstract: *Cucurbita Maxima (Duch.Ex.lamk)* (cucurbitaceae), has been commonly used as a medicinal vegetable for cooking purpose. The medicinally property of *C. maxima* include antidiabetic, antioxidant, anticarcinogenic anti-inflammatory and antimicrobial. The aim of this study was to identify the phytochemicals in the whole plant extracts *C.maxima*.The crude ethanol and aqueous extract of *C.maxima* were subjected to preliminary screening.

The phytochemical analysis of the whole plant extracts of the *C.maxima* reveled the presence of alkaloids, flavonoids ,saponins ,phenols ,tanins ,glycosides present in both aqueous and ethanolic extracts. But phytosterol is absent in aqueous extract and present in ethanolic extracts.

Key word: Phytochemical, Secondary metabolite, *Cucurbita Maxima* 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**). It is reported that cucurbits stimulated the growth of probiotic substance (**Sharma .D,Rawat . I &Goel .H 2012**) there are approximately 2, 50,000 – 5, 00,000 know plant species and only few of them show antimicrobial activity. (**Borris .R.P. 1996**) Various plant parts including seeds, stem ,leaves and roots of plant contain antifungal protein that potentially inhibit the growth of pathogenic fungi (**Schlumbauam et al .1986**) The antimicrobial activity of plants have many application including raw and processed food preservation , pharmacologicals, alternative medicine and natural therapies (**Rajkaruna .N , Harries. C, and Towers .G 2002**) Pumpkin seeds have a high nutritional value provides good quality oil and excellent source of protein(**Mahasneh .A .M & El oqlah A.A 1999**) The seeds of pumpkin has pharmacological activity such as antibiotic .(**Call .F , Huan .s &Auanhong .L 2006**) Antifungal, antibacterial and ant inflammation activities and antitoxicant effects (**Wang and Ng .T 2003**) The most critical health benefit attributed to pumpkin seed oil preventing the growth and reducing the size of prostate (**Manal K.A 2006**) In traditional medicine in north America and Maxico , pumpkin seed have been used as an anthelmintic agent and supportive treatment in functional disorder of bladder (**Mahasneh A.M et .al 1999**)Cucurbit fruit are known to contain a number of bioactive molecules like cucurbitacin, flavonoids , quercetinphytosteroids which induced apoptosis(**Yasuda.S et. al 2010**).

II. Material and Methods –

2.1Collection 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 *C. maxima* will be washed in running water and cut into small bits to facilitate drying and grind by according to standard procedure. The powdered sample were wrapped in paper and packed in polythene bag to avoid moisture and contamination.

2.3 Solvent extraction

The extraction of *C. maxima* 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.

2.4 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.

2.5 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

➤ Test for alkaloids –

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

➤ Test for tanins –

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

➤ Test for terpenoids –

About 0.2 g extract of *C. maxima* 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.

➤ 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

➤ **Test for flavonoids –**

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

➤ **Test for glycosides –**

The extracts of *C.maxima* 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.

➤ **Test for phytosterols –**

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

3. 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.

4. Data table –

Qualitative analysis of phytochemicals in ethanol and aqueous extracts of *Cucurbita Maxima* whole plant extract.

S.NO	Phytochemical	Ethanol	Aqueous
1	Alkaloid	+	+
2	Flavonoids	+	+
3	Phenols	+	+
4	Glycoside	+	-
5	Tanins	+	+
6	Saponins	+(low)	+
7	Phytosterols	+	-

(+) Indicates presence (-) Indicates absence

5. Conclusion –

In the present study, evaluation of phytochemicals studies of *C. maxima* 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 *C. maxima* whole plant extracts may have several medicinal properties that leading to opening up new avenues in the use of natural products for therapeutic purpose.

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7. Referance

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