iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 6 **Issue:** X **Month of publication:** October 2018

DOI:

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887
Volume 6 Issue X, Oct 2018- Available at www.ijraset.com

Comparative Estimation of Phenolic Content in Seven Selected Herbs used for Post Paternal Care

Divya M U [1], Ayona Jaydev[2], Jincy Rose K. R [3], Jisha K[4]
[1, 2, 3, 4]*PG Department of Environmental Sciences, All Saints' College, Thiruvananthapuram, Kerala*

Abstract: ***The present study aimed to quantitatively estimate the presence of phenolic content in seven herbs such as Thespesia populnea, Moringa oleifera, Biophytum sensitivum, Leucas aspera, Gossypium herbacium, Azima tetracantha, and Canthium paviflorum etc used for post paternal care.Phenol is an important phytochemical have some significant effect on health.Total phenolic content was estimated using standard method.***
Keywords: Phytochemicals Thespesia populnea, Moringa oleifera, Biophytum sensitivum, Leucas aspera, Gossypium herbacium, Azima tetracantha, Canthium paviflorum, Post paternal care.

I. INTRODUCTION

Phytoconstituents in different herbs have significant health effects. Phenol is an important phytochemical among various phytoconstituents in herbs.Phenol act as a good antioxidant. Phenol is present in almost all herbs. Selected seven herbs Moringa oleifera, Biophytum sensitivum, Leucas aspera, Gossypium herbacium, Azima tetracantha, and Canthium paviflorum also possesses phenol with various amount. Phenol prevent oxidative damage to the cell.Consuming these phenol containing herbs as food supplement as part of post paternal care have some beneficial effect on mother's body and helps to accelerate vata activities.
The study was aimed to qualitatively estimate the presence of phenol in above mentioned seven herbs.

II. MATERIALS AND METHODS

A. Plant Collection And Authentication

Fresh part such as leaf of Thespesia populnea, Moringa oleifera, *Biophytum sensitivum, Leucas aspera, Gossypium herbacium, Azima tetracantha and Canthium paviflorum* were collected from Kazhivoor Village, Trivandrum District, Kerala, during the month of February in the year 2018 and identified by the Faculty of Department of Botany of All saints' college, Veli, Trivandrum.

B. Preparation Of Sample

Fresh leaves were collected and they were washed thorough in running tape water and dried in shade for around 2 weeks and to decrease the moisture content. After drying, the leaves were ground well with a mechanical blender in to fine powder. Then the powder was stored in airtight container with proper labelling and kept in refrigerator for further use.

C. Plant Extract Preparation

The powdered samples were extracted with ethanol as solvent using the soxhlet apparatus the extract obtained was subsequently concentrated under reduced pressure and the residue collected. The residue was used for qualitative screening of secondary metabolites. Ethanol was selected as solvent as previous studies reported that it is the suitable solvent of such studies (Bonoli *et al.*, 2004)

D. Test For Phenol

To 1 mL of extract, 2 mL of distilled water was added followed by the addition of few drops of 10% ferric chloride. Formation of greenish black colour indicated the presence of phenols (Prasad *et al.*, 2015).

E. Estimation Of Phenol

The total phenolic content of the extracts were determined by folin-ciocalteau reagent method (Madhu *et al.*, 2016). For this method, dissolved the residue in known volume of distilled water (5mL), then pipetted out different aliquots (0.2-3 mL) into test tubes. The volume of each tube was made up to 3 mL with distilled water. 0.5 mL of Folin-ciocalteau reagent was added. After 3 minutes, 2 mL of 20% sodium carbonate was added and thoroughly mixed and placed the tubes in boiling water bath for exactly 1 minute. Cooled to room temperature and measured the absorbance at 650 nm against a blank.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887
Volume 6 Issue X, Oct 2018- Available at www.ijraset.com

III. RESULT AND DISCUSSION

The present study was done as an attempt to screen the phenol content in 7 different herbs which are used as medicines and as nutritive supplement for women after delivery. The plants used for this study include Thespesia populnea, Azima tetracantha, Canthium parviflorum, Moriga oleifera, Biophytum sensitivum, Gossypium herbacium and Leucas aspera. Dry powered leaves were used to conduct different biochemical experiments. The initial screening of leaf extract revealed the presence of Phenols. The contents were further estimated. The result indicated these 7 herbs have nutritional property.

A. Phytochemical Screening

Name of plant	Extracts	Phenol
T.populnea	P.E	-
	C	+
	A	-
A. tetracantha		
	P.E	+
	C	+
	A	-
C.parviflorum	P.E	-
	C	+
	A	-
L.aspera	P.E	-
	C	+
	A	+
B.sensitivum		
	P.E	-
	C	+
	A	+
M.oleifera		
	P.E	-
	C	-
	A	+
G.herbacium	P.E	-
	C	+
	A	+

Table 1: preliminary test on phenol

B. Estimation Of Phenol

Phytochemichals & Nutriculs	*Tespesia populnea*	*Moriga oleifera*	*Azima tetracantha*	*Canthium parviflorum*	*Biophytum sensitivum*	*Leucas aspera*	*Gossypium herbacium*
1 Phenol (mg/g)	0.04135	0.0556	0.07895	0.04175	0.0295	0.0525	0.05485

Table 2 :Quantitative Estimation of phenol

Phenolics are biologically active compounds that may possess some disease preventive properties (King et al., 1999). Total phenolic content is higher in Azima tetracantha (0.07895 mg/g) among the 7 herbs and Biophytum sensitivum showed the minimum quantity as compared to others (0.0295 mg/g). Total phenolic content in Moringa oleifera, Canthium parviflorum, Leucas aspera, Gossypium herbacium and Thespesia populnea are 0.0556 mg/g, 0.04175 mg/g, 0.0525mg/g, 0.0548 mg/g and 0.4135 mg/g respectively.
Rajeswari et al., (2014) studied total phenol in B.sensitivum as 3460 mg/g and Pranoothi et al., (2014) study it in L. aspera get 95.8µg/g. This is almost similar to the results of the current study. Abirami and Priyatharsini (2004) have already found the total phenolic content of ethanoic extract of A. tetracantha is 29.85 (mg/100g). Previous studies showed that phenolic content in A.tetracantha varied from 64.62±0.25 to 90.21±0.20mg. (Gayathri et al., 2014). In this study, chloroform extract of A. tetracantha showed very minute quantity of phenol. Result of this study shows that A. tetracantha was good source natural phenolic compound.

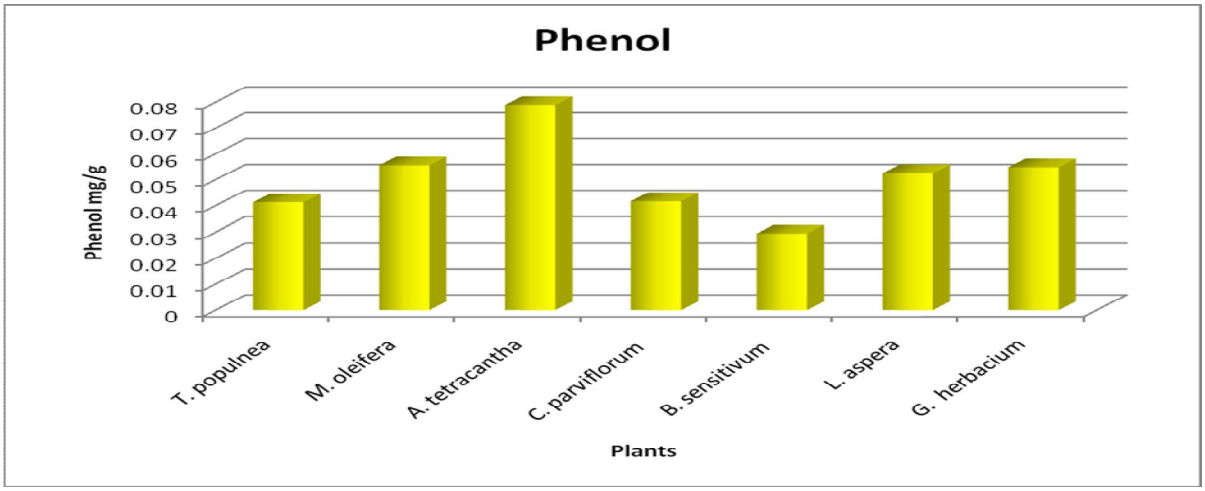


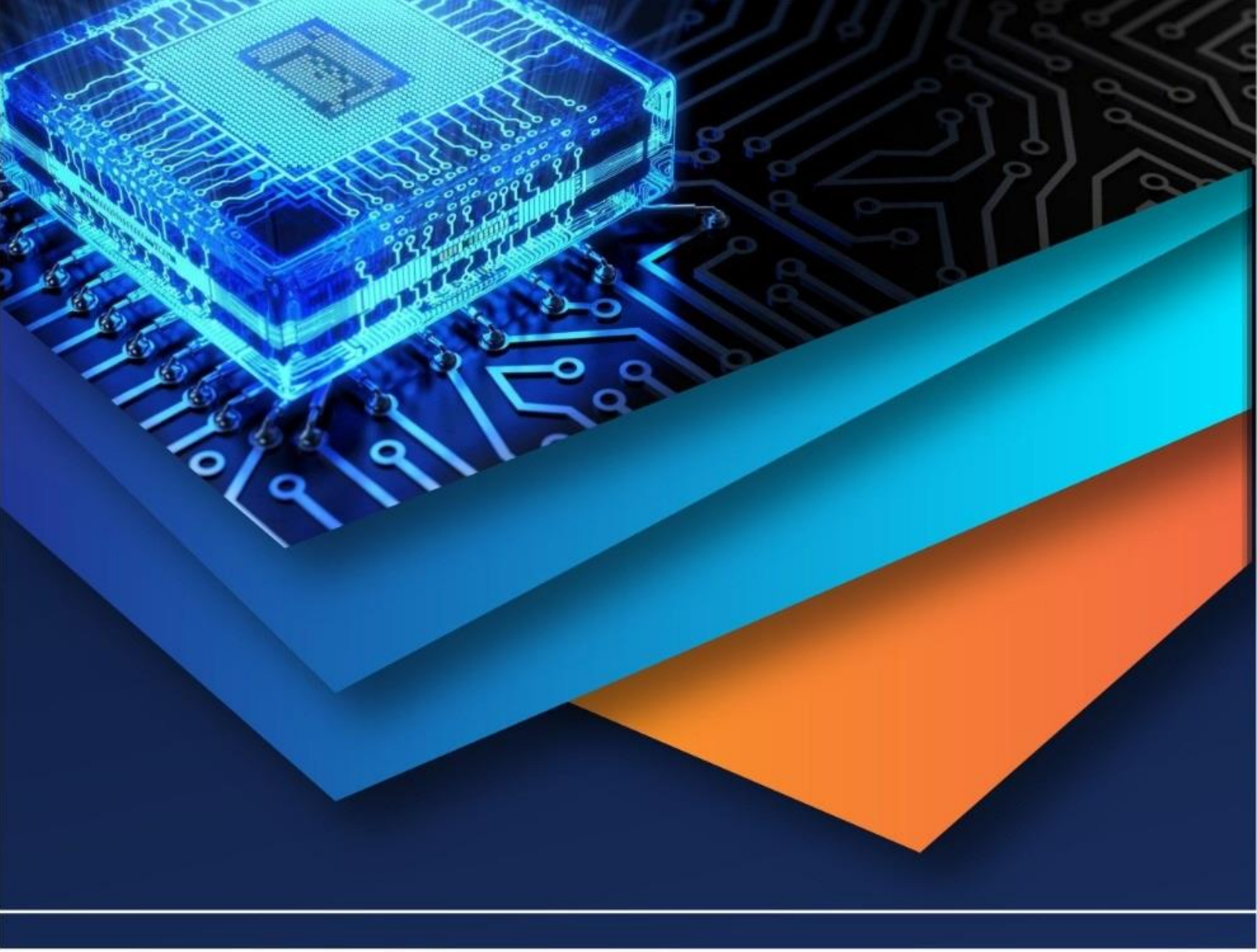
Fig 1 : Phenol content of plants

IV. CONCLUSIONS

According with the present study A.tetracantha showed more phenolic content and B.sensitivum have minimum. The study revealed all the selected seven herbs possess various amount of phenolic content. These herbs are used as traditinal medicine it may due to the significant amount of phenolic content in these herbs. Because the phyto phenol have some bioactivity like prevention of oxidative damages to cell etc.

REFERENCE

[1] Bonoli,M.; Verardo,V.; Marconi,E.; Caboni,M.F, Antioxidants Phenols in barley (Hordeum Vulgare L.)flour. Comparative Spectrophotometric Study among extracts method of free and bound phenolic acid J.Agric . Food Chem .2004,52, 5195-5200.
[2] Satya prasad M, DSD Suman Joshi, K Narendra, S K.Nadia, SK Msthani, N Padmaja Phani, A Krishna satya (2015), A comparative study of phytochemical analysis and in vitro anti microbial activity of three important vegetables from brassicaceae family.Int.J.res. Ayurveda Pharm 6(6) : 767-772.
[3] Singh PK, Singh S, Kumar V, Krishna A. Ethno veterinary healthcare practices in Marihan sub-division of District Mirzapur, Uttar Pradesh, India. Life sciences leaflets 2011[citied 2011 Feb 21]; 16:561-569.
[4] Devi Raja Rajeswari. P, Aruna.K, Prabu. K, Chidambaram. R and Rajasankar S (2014). Qualitative phytochemical analysis of Biophytum sensitivum. International journal of pharma and bioscience, 5(1) : 726-730.
[5] Madhu M, V Sailaja, TNVSS Satyadev, MV Satyanarayana (2016), Quantitative phytochemical analysis of selected medicinal plant species by using various organic solvents. Journal of Pharmacognosy and Phytochemistry 5(2): 25-29.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY