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"PHOTOCHEMICAL SCREENING, ANTIMICROBIAL & ANTIOXIDANT ACTIVITY OF ETHNO BOTANICAL, PLANT *PHYLLANTHUS NIRURI*:

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Abstract:

Phyllanthus niruri (Euphorbiaceae) is a small herb having wide range having a therapeutic properties. Ayurvedic system it is used for ulcers, , Jaundice, diabetes, chest pain, skin diseases and urinary tract infection. It show laxative effect taste in bitter and astringent effect. Extracts of this herb have been used therapeutic effects in many clinical studies. The extracts of *Phyllanthus niruri* have a wide range of pharmacological activities like antimicrobial, hepato protective, antioxidant. This review cover all the information about its ethanobotanical,

Key words: Antioxidants, Macronutrients, Ethano Botany, Hepatoprotective

INTRODUCTION:

Phyllanthus niruri (Euphobiaceae); is found in tropical and sub-tropical region of the world. It grows as a weed in moist abandoned land. It has various applications in tradition and folk medicine for treatment of various diseases such as hepatitis, menstruation problem and dysentery.

Materials and Methods

Collection *and identification of plant material*

The plants of *Phyllanthus niruri* were obtain from local areas of Nagpur from a herbal medicinal garden as a gift sample

Preparation of Extracts

The fresh whole plants were air dried and extracted with ethanolic using a Soxhlet extractor for 8 hrs at 60^0C. The lyophilized plant powder was stored at 22 ^{0}C

Test Microorganisms

Bacterial cultures *Staphylococcus aureus , Streptococcus* mutans and fungal culture *Candia albicans*, Bacillus coagulans were procured from microbiology lab selected microorganisms were store at 4 ^{0}C on nutrient agar slants. [5]

Determination of In-vitro Antioxidants Activity

Total phenolic content of *Phyllanthus niruri* ethanolic extract was estimated by Folin-ciocalteu regent [1]. Total flavonoid content was determined by using spectrophotometric method with minor modification [2]. The antioxidant activity of *Phyllanthus niruri* was measured in terms of hydrogen donating or radical scavenging ability using the stable DPPH method.

Superoxide radical scavenging activity was measured by the reduction of NBT.[3] The non enzymatic phenazinemethosulfate and nicotinamide adenine dinucleotide system through the reduction ofnicotinamide adenine dinucleotide, phenazinemethosulfate and oxygen.

Determination of In-vitro Antimicrobial Activity

The antimicrobial potency and activity was determined by Zone of inhibition agar well diffusion method with slight modification [4]

Table 1: Antimicrobial activity (Zones of Inhibition) of *Phyllanthus niruri* ethanolic extract

Phytochemicals	**Hydroalcohlic Extract**
Alkaloids	Presents
Amino acids	Presents
Carbohydrate	Presents
Flavanoids	Presents
Glycosides	Presents
Protein	Presents
Steroids	Presents

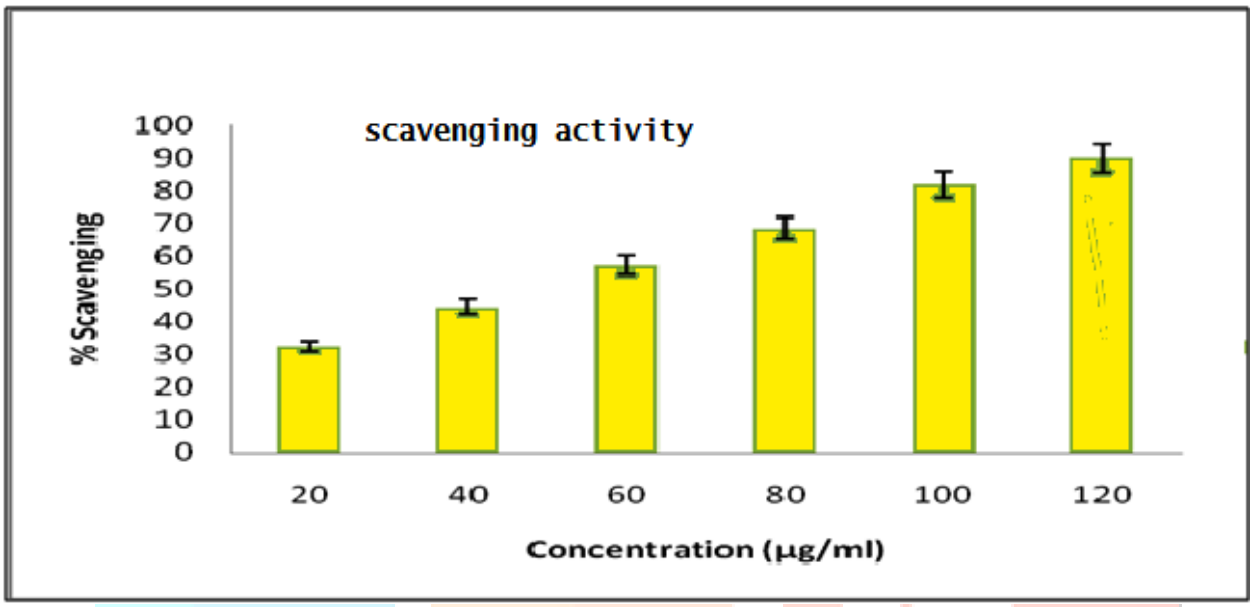
Result:

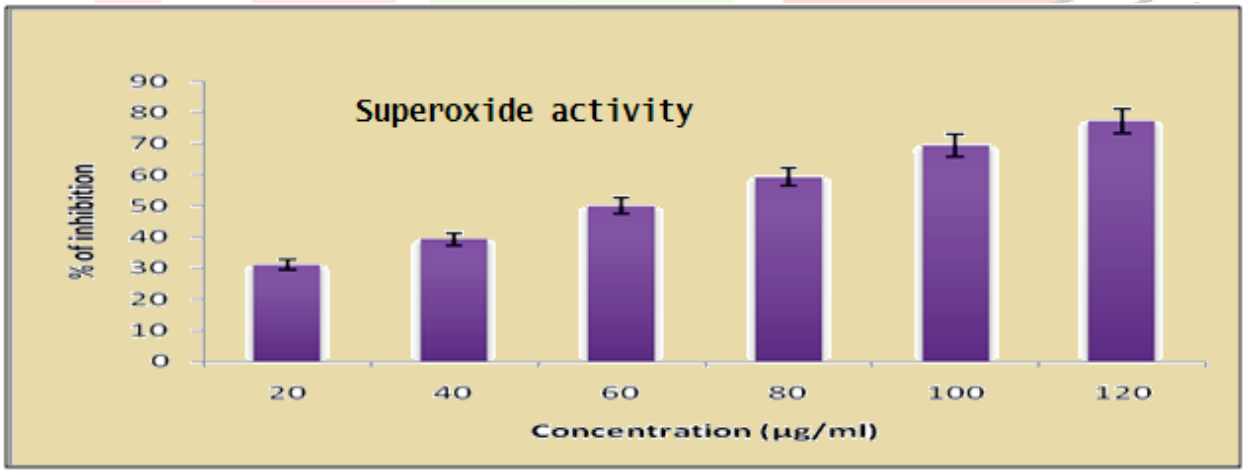
Antioxidants Assays

The results showed that the Total Phenolic Content of *Phyllanthus niruri ethanolic extract* was found to be **230.86±0.16** mg gallic acid equivalents/ g plant extract, and total flavanoids content was approximate to be **730.66±1.00** mg quercetin equivalents/ g plant extract from triplicate measurements. The phytochemical screening carried out (**Table-1**).

Figure-1, the DPPH free radical scavenging effect on was increased with an increase in concentration of *Phyllanthus niruri ethanolic* up to **180** µg/ml. The DPPH radical scavenging activity of *Phyllanthus niruri ethanolic extract* and standard drugs were estimated for various concentration **20-120** µg/ml. The IC_{50} value was found to be **45.92±1.2** µg/ml for extract and that of standard compound gallic acid, ascorbic acid was **1.55±0.8** µg/ml and **0.01±1.4** µg/ml.

Figure-2, The estimated IC_{50} values of the plant extract and BHT on superoxide radical activity were **59.43±1.4** µg/ml and **111.10±0.5** µg/ml respectively.





Conclusion: The presence study suggested that *Phyllanthus niruri* ethanolic extract, a potential source of phytochemical, antimicrobial and antioxidants activity.

Reference

1. Sellem I, Kaaniche F, Mtibaa AC, Mellouli L. Anti-oxidant, antimicrobial and anti-acetylcholinesterase activities of organic extracts from aerial parts of three Tunisian plants and correlation with polyphenols and flavonoids contents. Bangladesh J Pharmacol. 2016; 11: 531-44.
2. The Plant List: A Working List of All Plant Species". Retrieved June 6, 2014.
3. Patel, Jay Ram; Tripathi, Priyanka; Sharma, Vikas; Chauhan, Nagendra Singh; Dixit, Vinod Kumar (2011). "Phyllanthus amarus: Ethnomedicinal uses, phytochemistry and pharmacology: A review". Journal of Ethnopharmacology. 138 (2): 286–313.
4. Xia, Y; Luo, H; Liu, JP; Gluud, C (13 April 2011). "Phyllanthus species for chronic hepatitis B virus infection". The Cochrane Database of Systematic Reviews (4)
5. Rakesh Tiwle. 'Herbal Drugs an Emerging Tool For Novel Drug Delivery Systems Research Journal Of Pharmacy and Technology;Vol: 6. No:9:September-:2013