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Phytochemical screening of active phytocontents of linum usitatissimum and guizotia abyssinica plant seeds comparative properties

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Abstract
Many plant Species used in the treatment of different diseases. Plant derived active compound have played an important role in the development of clinically useful agents. Guizotia abyssinica and Linum usitatissimum plant seeds are used for many disease treatment. Aim of the present study is investigate the phytochemical analysis of Methanol, petroleum ether, Chloroform and Acetone extracts of linum usitatissimum and Guizotia abyssinica plants. Qualitative analysis of phytochemical Screening reveals the presence of Phenol, Saponins, Alkaloids, Protein and Carbohydrates. Current research describes a simple, effective and reproducible Comparative phytochemical analysis of natural seeds.

Keywords: medicinal plants, phytochemicals, guizotia abyssinica, linum usitatissimum, antioxidant activity

Introduction
Plants have been an important Source of medicine for thousands of years. Plants are the source of many modern medicine. Phytochemicals are responsible for the healing properties of plants. Plants turn out many secondary metabolites together with flavonoids, Alkaloids, Steroids, Saponins, terpenoids and glycosides to safeguard themselves from the attack of present infectious agent, insects, pest and environmental stresses [1].
Niger (Guizotia abyssinica) is an oil seed plant cultivated for over 5000 years. It is widely grown in Southern India and Ethiopia. In India, it is cultivated on the slopes of hills and plains along the coasts of Madhya Pradesh, Chhattisgarh, Odessa, Maharashtra, Bihar, Karnataka, and West Bengal. G. abyssinica dicotyledonus plant, medium to fine branches, growing up to 2 m high. The plant grows very well in poorly drained, heavy clay soils. An important feature of this plant is that it provides good seed yield even under poor growing conditions. Niger is heavily cultivated for the extraction of Oil used for soap, lighting, lubrication and used as biodiesel. Niger oil absorbs the fragrance of flowers used as a base oil in the perfume industry. The plant is used in various Indian communities for the treatment of rheumatism, rheumatoid arthritis and infectious diseases [2].
Flax (Linum usitatissimum) plant growing to one m tall. The seeds are oval, 2.5-9.5 cm long and 1-3.5 cm. thin shiny in experienced depilatory with a black and a brief stalk regarding are 1-1.8 cm long seeds of Linum usitatisamum plant are used medication for treatment of Rheumatism, Dyspepsia, stomach upset, Dysmenorrheal, Diabetes, Cardiovascular disease, Cancer, Expelling disorders, Skin diseases, Trauma symptom and has sedative and antiviral properties. The seeds and alternative Components of Linum usitatissimum plant periwinkle exhibit inhibitor properties. Therefore, phenoplast compounds have chemical reaction properties that act as reducing agents, chemical element donors. It's multiple applications in foods, cosmetics and Pharmaceutical industries. Besides inhibitor activity, these compounds exhibit antiallergic, medicinal drug, antimicrobial antithrombotic cardio protecting and vasodilatory effects [3].
Phytochemicals are basically divided into two groups of Primary and secondary metabolites based on the activity of plant metabolism. Primary or basic metabolites include regular carbohydrates, amino acids, proteins and chlorophyll while secondary metabolites include alkaloids, saponins, Steroids, flavonoids, tannins and more [4].

Materials and Methods
Collection of Samples
Guizotia abyssinica and Linum usitatissimum are collected from forest region of Betul, M.P., India were Collected in the winter season. The plant calibrated taxonomically and was preserved for extraction.

Preparation of Solvent Extracts of plants
Guizotia abyssinica seeds were properly cleaned with running water then properly removed with purified water. The Seeds dried for 5 days at ambient temperature for shade. Second, dried seeds were coarsely used with a mortar and pestle and then a mechanical blender was used to ground them further. 30gm 340 ml of organic Solution of Methanol & D.W. were collected from the sample extraction at Soxhlet. The extraction was completed in 8 days at 65°c. In order to form a paste, extract were then evaporated at 45^0C and further transfer to sterile and refrigerated once used [5, 6].
Linum usitatissimum seeds were properly washed with running water then purified water. The Seeds dried and crushed to urge powder. Dried powder of seeds 50gm was hot extracted with 500 cc fuel exploitation soxhlet

instrumentation [7]. The Soxheletion at 30^0C was done for one week to obtain extract. The extract was evaporated in water bath at 70^0C to obtain Crude for phytochemical analysis. Once the entire evaporation, the load of the extracts was recorded and so labeled [8]. The extractions stored separately at 4^0C in air tight battle. After dried powder 50gm cold extracted with 200ml Petroleum Ether using rotary shaker and were incubated for 1 week at 25°C at least 5 times vibration per day [9]. The extract were filtered exploitation textile material and volatilized exploitation rotary distillation instrumentation, this extract dried in 50^0C oven for 24 hours and finally kept at 4^0C temperature [10].

Identification tests for Phytochemical Constituents

Phytochemical analysis was performed to determine the presence of bioactive Compounds like carbohydrates, proteins, starch, amino acids, steroids, glycosides, flavonoids, alkaloids, tanning, Saponins, Phenols and resins by the following procedure [11].

1. Test for Alkaloids

5ml of the prepared extracts were volatilized to standing. The residue was taken in 5 ml of acid, saturated with chemical compound and filtered. The filtrate was one by one tested with following reagents:

(A) Wagner's Test

To few ml of each of the sample solution, Wagner's reagent (iodine in potassium iodide) was added, which resulted in the formation of reddish brown precipitate indicating the presence of alkaloids.

(B) Mayer's Test

To 1ml of each of the sample solution few drops of Mayer's reagent (Potassium mercuric chloride solution) was added. Formation of cream white precipitate indicates the presence of alkaloids.

2. Test for flavonoid

To 4cc of extract add 1.5cc 50% methanol solution. The solution was heat and metal chemical element was further to this solution, 5-6 drops of centered HCl was further, red color made up our minds for flavonoids and Orange color for flavones.

3. Test for Phenols

To the crude extract 2ml of 22 metal chloride resolution was extract and black coloration was firm for the presence of phenols.

4. Test for terpenoids (Salkowski Test)

5cc of each extract was mixed during a try of cc of Chloroform and con. H_2SO_4 (3ml) was strictly extra to create a layer. A brown coloration of the bury face was intentional to indicate positive results for the presence of terpenoids.

5. Test for Quinones

About 0.5 gm of plant extract was taken and extra 1 c.c. of extract and 1cc of con. H_2SO_4 was extract formation of red color shows the presence of quinones. One drop of ethanol take a look at resolution is placed on a filter paper, followed by one drop of 0.2% ethanolic phenylacetonitrile resolution and one drop of 0.1 N hydroxide. A positive response is indicated by the appearance of a blue or violet stain edged by a yellow ring.

6. Test for saponins

To 0.5 ml of filtrate, added 5ml of distilled water and shaken vigorously for a stable persistence froth. Frothing which persisted on warming indicates the presence of saponins.

7. Test for Tannins

To 5ml of extract, few drops of 5% ferric chloride solution were added. The appearance of violet indicates the presence of Saponins.

8. Test for Fatty Acids.

About 0.5 ml of extract was mixed 5 ml of ether. The extract was allowed to evaporate, on filter paper and dried. The appearance of transparence on filter paper indicates the presence of fatty acids.

9. Test for Steroids.

To a 3 cc of extract add a 3 cc Chloroform and 3 cc of con. H_2SO_4 shake well; chloroform 1 layer show chromatic color light.

10. Test for Glycosides

To the solution of the extract add glacial carboxylic acid, few drops baseball metal Chloride and 1cc red vitriol further and determined for a brown coloration at the junction of two layers and additionally the bluish in experienced colorize the upper layer.

11 Test for Carbohydrates
For 2ml test solution added 2 drop of the molisch's reagents (a solution of α-napthol in 95% ethanol). Therefore solution is then poured slowly in to a tube containing 2 cc of center red vitrial So 2 layers kind. Purple to ruby violet color at the junction of 2 layers indicates the presence of macromolecule.

12. Test for Proteins.
Xanthoprotein Test
The extracts are treated with a few drops of Con.$HNO_{3;}$ the yellow color indicates the presence of protein

13. Check Amino Acids

Nanhydrin Test
In 1ml of boiled sample with a 0.1% acetone solution of ninhydrin, the appearance of pink indicates the presence of amino acids.

Results and Discussion
Observations

Table 1: Phytochemical Screening of extract of Guizotia abyssinica and Linum usitatissimum

S.N.	Phytochemical Constituents	Guizotia abyssinica	Linum usitatissimum
1.	Alkaloids	+ve	+ve
2.	Flavonoids	+ve	+ve
3.	Phenolics	+ve	+ve
4.	Terpenoids	+ve	+ve
5.	Saponins	+ve	+ve
6.	Fatty acids	+ve	+ve
7.	Glycosides	+ve	+ve
8.	Carbohydrates	-ve	-ve
9.	Proteins	+ve	+ve
10.	Amino Acids	+ve	-ve

This study has discovered the presence of healthful chemical constituents. Phytochemical experiments are expected to assist on the accurate identification of high quality materials where plant chemistry differs between different species. All solvents namely Methanol, Ethanol, Petroleum ether, Chloroform and seed water, natural leaf and callus produce highly variable effects on the presence of nutrients bioactive substances such as alkaloids, flavonoids, Terpenoids. [12, 13]
The selection of Crude plant extracts for screening programs has the potential of being heaps of thriving in initial steps than the screening of pure compounds isolated from natural merchandise. The plant extracts provision of secondary metabolites i.e. alkaloids, flavonoids, terpenoids, tannins, Glycosides, Steroids etc. Plant extract are known to be effective on steroids. Which are very important compounds because they are related to compounds such as sex hormones and it has been reported that steroids have Cardiotonic activities and antibacterial properties. [14]
The phytochemical analysis of the Guizotia abyssinica and Linum usitatissimum are important and has in every business interest analysis institutes and medicine prescribed medication Companies for the manufacturing of the new drugs for treatment of various diseases. [15]

Conclusion
It can be concluded from the present study that Guizotia abyssinica and linum usitatissimum contains a major secondary bioactive compounds such as Alkaloid's, flavonoids, terpenoids, tannins, Glycosides are commercial value and can lead to great interest in phyto pharmaceuticals. [16] Healthful plant plays a major role in preventing various diseases. [17] The medicinal drug, medicament, antioxidant, anti-abortifiecient of the various elements of plants is because of the presence of the on prime of mentioned secondary metabolites. [18] The present study provides proof that solvent extract of Guizotia abyssinica and Linum usitatissimum is contains medicinally necessary bioactive compounds and this justifies the utilization of plant species as ancient medication for treatment of various diseases. [19, 20] Additional purification, identification and characterization of the bio active chemical constituent's Compounds would be our priority in future Studies.

References
1. Shalini S, Sampathkumar P. Phytochemical screening and anti microbial activity of plant extracts, 2012.
2. Mohan Kumar BN, Basavegowda, Vyakaranahal BS, Deshpande VK, Kenchanagoudar PV. Influence of sowing dates on production of seed yield in niger (Guizotiaabyssinica Cass.). Karnataka J Agric Sci:2011:24(3):289 – 93.

3. Xing L, Zhao FM., Cao YF, Wang M, Mei S, Li SP, Cai ZY. Principalcomponent analysis of mineral elements andfatty acids composition inflaxseed from tendifferentregions. Spectrosc. Spectr. Anal,2014:34(9),2538–2543.
4. Savithramma N, Linga Rao M, Suhrulatha D. Screening of medicinal plants for secondary metabolites. Middle East J Sci Res,2011:8(3):579-84.
5. Jigna P, Sumitra CV. In vitro antimicrobial activity and phytochemical analysis of some Indian medicinal plants. Turk J Biol,2007:31:53-8.
6. Bhumi G, Savithramma N. Screening of pivotal medicinal plants for qualitative and quantitative phytochemical constituents. Int J Pharm Pharm Sci,2014:6:63-5.
7. Kumari K, Gupta S. Phytopotential of *Linum usitatissimumplant* us L. (G.) Don.Var. "*Linum usitatissimumplant* a" And " Alba" Against Various Pathogenic Microbes In vitro. International Journal of Research in Pure and Applied Microbiology,2013:3(3):77-82
8. Govindasamy C, Srinivasan R. In vitro antibacterial activity and phytochemical analysis of *Linumusitatissimum* (Linn.) G.Don.Asian Pacific Journal of Ttopical Biomedicine, 2012, S155-158.
9. Yaqoob N, Bhatti IA, Anwar F, Mushtaq M, Artz WE. Variationinphysicochemical/analytical characteristics of oil among different flaxseed (LinumUsittatissimum L.)cultivars.Ital. J. Food Sci,2016:28(1):83–89.
10. Wang H, Wang JH, Qiu CS, Ye YT, Guo XB, Chen G, *et al*. Comparison of phytochemical profiles and health benefits in fiber and oilflax seeds (Linum usitatissimum L.). Food Chem,2017:214:227–233.
11. Yadav RNS, Agarwala M. Phytochemical analysis of some medicinal plants. J Phytol,2011:3(12) 10-4.
12. Xie DW, Dai ZG, Yang ZM, Tang Q, Deng CH *et al*. et al. Combined genome-wide association analysisand transcriptome sequencing to identify candidate genes for flax seed fatty acid metabolism. Plant Sci,2019:286:98–107.
13. Zhang JP, Xie YP, Dang Z, Wang LM, Li WJ, Zhao W, et al. Oil content and fatty acid components of oilseed flax under different environments in China.Agron.J,2016:108(1):365–372.
14. Rajwade AV, Kadoo NY, Borikar SP, Harsulkar AM, Ghorpade PB, Gupta VS. Differential transcriptional activity of SAD, FAD2 and FAD3 desaturasegenesin develop ingseeds of linseed contributes ovarietal variationinalpha-linolenicacidcontent.Phytochemistry,98:41–53.
15. Sain M, Sharma V. *Linumusitatissimum plant* A Review of Potential Therapeutics Properties. Int. J. PureApp. Biosci,2013:1(6):139-142.
16. Baghel S, Bansal YK. Synergistic effect of BAP and GA3 on in vitro flowering of GuizotiaabyssinicaCass.- a multipurpose oil crop. Physiol Mol Biol Plants,2014:20(2):241–47.
17. Baghel S, Bansal YK. Micropropagation and *In vitro* flowering of a biodiesel plant nigerGuizotiaabyssinica (Cass.). Asian J Exp Biol Sci,2013:4(4):532-39.
18. Kiran Kumari SP, Sridevi V, Chandana Lakshmi MVV. Studies on phytochemical screening of aqueous extract collected from fertilizers affected two medicinal plants. J Chem Biol Phys Sci,2012:2(3):1326-32.
19. Ramadan MF. Functional properties, nutritional value, and industrial applications of niger oilseeds (Guizotiaabyssinica Cass.). Crit Rev Food Sci Nutr,2012:52:1-8.
20. Sarin R, Sharma M, Khan A. Studies on Guizotiaabyssinica L. oil: biodiesel synthesis and process optimization. BioresourTechnol,2009:100:4187-92.