A REVIEW OF PRELIMINARY SCREENING OF PHYTOCONSTITUENTS OF AILANTHUS EXCELSA

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ABSTRACT

Plant are important source of energy and others basic requirement. Nowadays, herbal medicine is gaining popularity and plants are the source of API for herbal medicines. So, now it is compulsory to evaluated plants for various parameters. This reviews article gives as idea about various preliminary screening of plant extracts done by various researchers. The preliminary screening include information regarding ash value, acid ash value, DPPH, HPTLC, FTIR, etc.

Keywords: Ash value, DPPH, total phenol and flavanoids contents.

I. INTRODUCTION

In the 21st century where there is so much advancement in the field of medicine. There is advance in the alternative medicine also. These developments lead to invention of herbal medication. The herbal medicine is the combination of the technology of extraction and natural source of medicine.

This natural source of are plants, animals and various mineral which are obtained from earth and water. The evaluation of material obtained from the source is important as to know the purity of the raw material. So, screening for the various physical parameters are done such as macroscopic, microscopic and TLC, etc.

II. PRELIMINARY SCREENING

Plant Characterization: The author has performed: Macroscopic studies: plant exhibit light grey (externally) and yellowish–white (internally). It has disagreeable odour and bitter in taste. The total ash value, water soluble ash value, Acid soluble ash and Sulphuric ash were found to be 7.20, 4.36, 2.08 and 5.24 respectively. The extractive value was found to be 2.52, 1.24, 6.35, and 12.15 for petroleum ether, chloroform, ethanol and distilled water respectively. The length of phloem fiber, width of phloem fiber, bitterness value, Loss on drying and Foaming index value was 250–710.5 µm, 12.5–35.2 µm, 140 units/g, 5.10%w/w and < 100 respectively. The extraction was done using following as solvent Petroleum ether, Chloroform, Ethanol and distilled water. The Chloroform extract contain the highest protein level as compared to ethanolic extract and petroleum extract. Whereas, water extract does not contain protein and amino acid. The sterols level is higher in chloroform extract as compared to ethanol extract. The chloroform extract contain lignin. Whereas, saponin shows its presence in chloroform, ethanol and distilled water (1).

FTIR and HPTLC: The researcher has studied following parameters i) FTIR: The FTIR technique was used to identify the functional group. NH group peak was obtained at 3502cm⁻¹, a broad –OH peak at 3400cm⁻¹, =C-H peak at 2200 cm⁻¹, –C-H peak at 2000cm⁻¹, C-O peak at 1800cm⁻¹ and –CHO peak at 1700cm⁻¹. The IR result confirmed presence of peak of alkaloids, Flavanoids, Terpenoids, Steroids and Saponins. ii) HPTLC: HPTLC confirmed the presence of phytochemical by Rf value 0.42, 0.30, 0.73, 0.51, 0.61 and 0.83 respectively (3).

Total phenolic and flavanoid content and DPPH radical scavenging activity: The researcher has studied total phenolic and flavanoids by using Folin –Ciocalteu reagent and aluminum chloride method respectively. the phenol and flavanoid content vary in different parts of plant. The flower extract shows highest phenolic content 48.38mg GAE/gdw and decrease s in order fruit – 36.12mg GAE/gdw, leaves-36.04mg GAE/gdw, stem 32.28mg GAE/gdw and root - 28.56mg GAE/gdw. Whereas, highest flavanoid was found in leaves- 21.5mg QE/gdw and decrease as stem, flower, fruit and root - 11.7mg QE/gdw, 7.44mg QE/gdw, 5.24mg QE/ gdw, 1.11mg QE/gdw. ii) DPPH radical scavenging- This study is done to evaluated the free radical. The flower extract shows highest activity with low IC₅₀ value that was found to
be 36.85 µg/ml. whereas, lowest activity shows by root with highest IC₅₀ value and it was found to be 1493.46µg/ml. This activity might be due to presence of phenolic compounds (2).

III. CONCLUSION

This review article gives as idea about the work done by the various researchers. It brief information about preliminary studies, HPTLC, FTIR, DPPH Radical scavenging activity, total phenolic and flavanoids content. The preliminary screening we got the idea about macroscopically studies, ash, acid soluble ash, sulphuric ash value, etc. This article helps in further research such as formulation of any product.

IV. REFERENCES

