Abstract

Standardisation and Quality control methods are of utmost importance for maintenance of quality of herbal medicines. Literature values are available for a number of medicinal plants. Such values are considered to be standard and at times taken for granted. The use of herbs and herbal extracts to treat diseases has stood the test of time. Herbal products/traditional medicine are composed of many constituents and are, therefore, capable of variation. The variability of the plant material is due to different conditions of growth, harvesting, drying, and storage. The polarity of the solvent, the mode of extraction, and the instability of constituents may also influence the composition and quality of the extracts. The quality criteria for herbal/traditional drugs are no doubt based on a clear scientific definition of the raw materials used. To prove the constant composition of herbal preparations, however, adequate analytical methods have to be applied. Depending upon whether the active principle of the plant is known or not, different concepts of standardization are adopted in order to establish relevant criteria for uniformity. Herbal drugs have shown to be potential lead compounds in new drug development. Effective plant based drug discovery, however, requires an interdisciplinary approach wherein the pharmacognosist, chemist and the biologist work together. In recent years more people throughout world are turning to use medicinal plant products in healthcare system. World wide need of alternative medicine has resulted in growth of natural product markets and interest in traditional systems of medicine.

Madhya Pradesh, India sustains a very rich traditional medicinal plant wealth and inherits unique plant and animal communities. Guizotia abyssinica (L.f.) Cass. belonging to family Asteraceae (Compositae), commonly known Niger, black seed (E) Ramtil, Kalatil (H). It is an erect, stout, branched annual herb, grown for its edible oil in many parts of Madhya Pradesh. The objective of the present work is to collect scattered scientific information of the herbs used by the tribal and rural people of Madhya Pradesh. Field and survey work was made after carefully planned trips to collect the folk lore uses of the selected plant species by the tribal and rural people of Madhya Pradesh. The claims were gathered by interviewing the tribal and rural people of the study area using a validated tool. It has been found that the plant has been used in the treatment of rheumatism, cough, burn, syphilis and other associated microbial disease.
Attempts were made to verify the efficacy of claims with actual beneficiaries, although this was not possible in all cases due to social customs. The various parts viz., stem, leaves and seeds are popular in Indian traditional medicine and as such provides good to develop herbal drug preparation to be used as phytomedicine. International criteria for validation and standardization of an herbal material is phytomedicine examination of raw material to guarantee its authenticity. The dried stem, leaves and seeds were taken to study various physico-chemical parameters. Various parameters such as FOM, LOD, ash value, extractive value and fluorescence analysis of powdered drug were determined. Further, extraction and phytochemical screening of various extracts of the plant as well as the seed oil to trace the presence of active phytoconstituents in the plant parts. Attempt was also made to analyze the seed oil and the reports were mentioned in the present work. HPTLC analysis of the extract were carried out to reveal the presence of phyto-constituents. The aqueous and ethanolic extracts of *Guizotia abyssinica* (L.f.) Cass. Syn. *G. oleifera* D.C., *Polymnia abyssinica* L.f., Suppl., *Verbesina sativa* Roxb., *Jaegeria abyssinica* Spr., leaves and seed were screened for antimicrobial activities against some pathogens viz., *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Enterobacter faecalis*. Extracts were found to produce significant inhibition against all the pathogens. Ethanolic extract were observed to be more active than aqueous extract as compared to the standard drug. Also, the aqueous and ethanolic extracts of *Guizotia abyssinica* (L.f.) Cass. were evaluated for anthelmintic activity using adult earthworms. The leaves and seed extract exhibited a dose-dependent inhibition of spontaneous motility (paralysis) and evoked responses to pin-prick. With lower doses the effects were comparable with that of albendazole. However, there was no final recovery in the case of worms treated with aqueous extract of seeds and ethanolic extract of leaves. The result showed that these extract possessed wormicidal activity and thus, may be useful as an anthelmintic agents. The anti-inflammatory activity was evaluated using acute inflammatory models viz., carrageenan induced paw oedema. Oral administration of the extract at the doses 100 and 200 mg/kg b.w. exhibited dose dependent and significant anti-inflammatory activity (p < 0.01).

The aqueous extract of leaves and seeds were taken and formulated to herbal tablet using different excipients and various evaluation parameters were studied. Stability studies of optimized formulation at different temperature and RH was carried out and was found that AEGASe containing formulation has better results than AEGAL.
Thus, the present work aimed at setting the standardisation standards for establishment of quality control parameter for the raw material. The data obtained in the present study will serve as valuable tool for identification, authentication and detection of adulterants and quality control of the plant *Guizotia abyssinica* (L.f.) Cass. Hence, present investigation established pharmacological evidences to support the folklore claim that *Guizotia abyssinica* and further research and investigation in *Guizotia abyssinica* (L.f.) Cass., in the isolation and characterization of novel compounds from the extracts will lead for the development of formulation of various other dosage forms viz., novel drug delivery system i.e., ethosomes, phytosomes, niosomes etc, which may be used in the treatment of many diseases and associated disorders and may results in the development of some safe and effective herbal preparations.