ASSESSMENT OF PHARMACOGNOSTICAL PARAMETERS OF CLEOME VISCOSA SEEDS

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ABSTRACT

Because of this, plants have played an important part in the treatment of diseases and afflictions in humans from the beginning of time. Herbal medications are becoming increasingly popular for use in primary health care for humans all around the world, owing to their efficacy, accessibility, lack of or insignificant adverse effects, and low cost. The leaves, seeds, and roots of the plant are widely employed as an anthelmintic, antiscorbutic, antiseptic, heart stimulant, carminative, and febrifuge in traditional systems of medicine. Plant components are also believed to be effective antipyretics, anticonvulsants, and antidiarrhea agents, and they are sometimes used to heal wounds and other ailments. This study investigated the pharmacognostical effects of Cleome viscosa L. seeds extract.

KEYWORDS: Herbal, Plant, pharmacognostical, health, antiscorbutic.

I. INTRODUCTION

The study of plant drugs from a pharmacognostical standpoint would include the investigation of the habitat, general characteristics of the plant from which the drug is derived, its position in the botanical system, the organ or organs of the plant that are used, their gross and 15 min constructions in the whole and powdered forms, and the chemistry of the constituents, particularly those that may be used in therapeutic applications. The description of a medicinal plant at the macroscopic and microscopic levels is the first step in determining the identification and purity of such materials. Performing this procedure should be done before any tests are conducted. The relevance of pharmacognosy has become more recognised in recent years. In contrast to taxonomic identification, pharmacognostic study covers factors that aid in the detection of adulteration in powdered drugs as well as adulteration in liquid drugs. It is critical to conduct pharmacognostical and physiochemical research on the plant since, once it has been dried and powdered, it loses its morphological identity and becomes more susceptible to adulteration. Pharmacognostic investigations confirm the authenticity of the plant and establish standardised requirements that prevent the medicine from being contaminated with other substances. This type of research aids in the authentication of plants and the assurance of repeatable quality in herbal goods, both of which contribute to the safety and efficacy of natural remedies. Another reason why it is necessary to conduct a physicochemical examination of plant material is that it may be used to detect adulteration or poor management of medications. Included among the characteristics being investigated are moisture content, loss on drying (LOD), total ash (including acid solubilized ash), acid-soluble ash value, and alcohol and water-soluble extractive values, among other things. The ash values of crude drugs are used to assess the quality and purity of the medicine. As a result, it suggests the existence of contaminants such as carbonate, oxalate, and silicate. The quantity of inorganic component contained in medications may be estimated by the amount of water soluble ash present. The acid insoluble ash is composed primarily of silica and suggests contamination with an earthy element, according to the manufacturer. The amount of moisture present in medications should be kept to a bare minimum in order to hinder the growth of bacteria, yeast, and fungus during preservation. Using an estimation of extractive values, one may quantify the quantity of active components present in a given

amount of plant material when it is separated with a certain solvent.

II. LITERATURE REVIEW

Mohi Iqbal Mohammed Abdul (2018) Herbal medicines have recently been used for treatment of various diseases. The unwanted reaction and other concern like authenticity of herbal drugs is one of the important issues that have been addressed in this article. Toxicity of various important herbal drugs which are used regularly may also induce fatal reaction in our body. Herbal drug interaction with conventional drug and their serious consequences may be also life threatening for the patients who consume herbal drugs. Drug mutagenicity and contamination of herbal drugs are discussed here with suitable example. Drug authenticity with suitable illustration is also depicted in this review article. The aim of this article is to deliver an insight to the critical points of modern herbal drugs therapy and to find the scope for future scientists to overcome the serious issues regarding the herbal drugs treatment in recent era.

Refaz Ahmad Da (2017) Medicinal plants have been playing an essential role in the development of human culture. As a source of medicine, Medicinal plants have always been at forefront virtually all cultures of civilizations. Medicinal plants are regarded as rich resources of traditional medicines and from these plants many of the modern medicines are produced. For thousands of years medicinal plants have been used to treat health disorders, to add flavor and conserve food and to prevent diseases epidemics. The secondary metabolites produced by the plants are usually responsible for the biological characteristics of plant species used throughout the world. The microbial growth in diverse situations is controlled by plant derived products. In this review we gave general overview of the medicinal plants.

Haidan Yuan (2016) Natural products and traditional medicines are of great importance. Such forms of medicine as traditional Chinese medicine, Ayurveda, Kampo, traditional Korean medicine, and Unani have been practiced in some areas of the world and have blossomed into orderly-regulated systems of medicine. This study aims to review the literature on the relationship among natural products, traditional medicines, and modern medicine, and to explore the possible concepts and methodologies from natural products and traditional medicines to further develop drug discovery. The unique characteristics of theory, application, current role or status, and modern research of eight kinds of traditional medicine systems are summarized in this study. Although only a tiny fraction of the existing plant species have been scientifically researched for bioactivities since 1805, when the first pharmacologically-active compound morphine was isolated from opium, natural products and traditional medicines have already made fruitful contributions for modern medicine. When used to develop new drugs, natural products and traditional medicines have their incomparable advantages, such as abundant clinical experiences, and their unique diversity of chemical structures and biological activities.

Shailajan and Gurjar (2016) evaluated the traditionally reported wound healing potential of Chrysophyllumcainito leaves using excision wound model. Topical application of the standardized ethanolic extract of C.cainito leaves on excision wounds caused the significantly faster reduction in the wound area as compared to JatyadiTaila (JT) and Betadine (BTD). It also showed the significant increase in the tissue biochemical parameters such as hydroxyproline, hexosamine and protein when compared with the untreated control.

Chopda et al., (2016) evaluated wound healing activity of methanolic extract of three Medicinal plants using excision and dead space wound models. Hamiltoniasuaveolens, Sphaeranthusindicus and Ziziphusjujuba Mill are one of the most important traditional medicinal plants. The primary indigenous use of these plants appears to be of the leaves, flowers and root as a topical treatment for wound healing. Enhanced wound contraction, decreased epithelialization time and increased hydroxyproline content suggest that S. indicus and Z. jujuba root extract may have therapeutic benefits in wound healing.

III. MATERIAL AND METHODS

3.1 Plant, Plant Parts Gathering as well as Authentication

It was in the month of September when the ripe seeds of Cleome viscosa L. were gathered from the surrounding districts of Moradabad. When collecting the seeds, great care was taken to ensure that they were of normal and even size. The seeds and plant specimens were authenticated by world famous botanist Dr. G.P. Sinha of the Botanical Survey of India (BSI) in Allahabad, India, and a voucher specimen (TR No. GG 950204) was deposited in the headquarters of the Botanical Survey of India in Allahabad, India, after which the seeds and plant specimens were returned to the researchers.

3.2 MacroscopicalAssessment of Cleome viscosa L. Seeds

The term "macroscopical assessment" means evaluating pharmaceuticals based on their colour, odour, taste, form, and other specific characteristics such as touch and texture. Seed morphological profiles are studied in order to develop a system for qualitative evaluation that is based on their analysis. The dried seeds were collected for examination under a microscope. The quantity of seeds in the pods, as well as the size and colour of the pods of the Cleome viscosa L. species, were studied in order to evaluate the macroscopical characteristics of the seeds.

3.3Microscopical Evaluation of Cleome viscosa L. Seeds

It was decided to use dried seed powder for the powder microscopic investigation. The seeds of Cleome viscosa L. were ground into a powder using a mixer grinder. The coarse powdered material acquired in this manner was sieved using a 40 mm sieve in preparation for powder microscopy. Slides were made using water, chloral hydrate as a clearing agent, and glycerin as mounts in order to examine the microscopical characteristics of pure powder specimens. All powder samples were dyed using a variety of chemicals in accordance with the written recommendations.

IV. RESULTS AND DISCUSSION

4.1 MacroscopicalAssessment of Cleome viscosa L. seeds

Colour: Brown

Odour : Odourless

Taste: Tasteless

Shape: Snail shell

Size: 0.1 cm

Surface: Rough

Quantity of Seeds in the pods : 8-12

Size of Pod: 4-5 cm

Colour of Pod: Brown when air dried

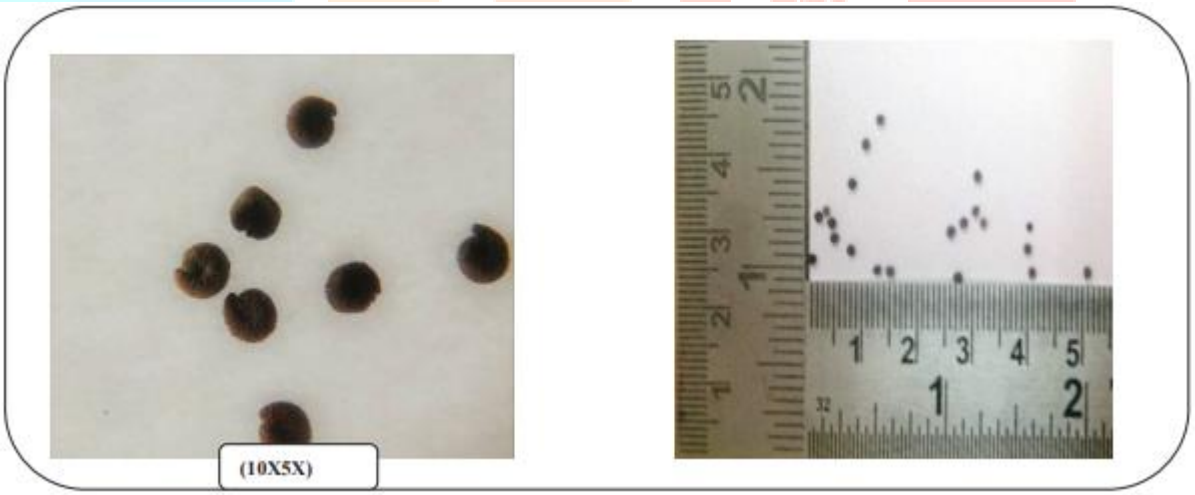

Figure 1: Cleome viscosa L. seeds

4.2MicroscopicalAssessment of Cleome viscosa L. seeds

A sample of seed powder was placed on a glass slide and viewed underneath a light microscope for microscopy. A considerable number of pieces of the testicular epidermis, stone cells of reddish-brown colour, and oval, spherical, or irregularly shaped protein aggregates were discovered. The presence of starch grains and calcium oxalate crystals was shown to be lacking. Illustration 2-4. (10X45X)

Figure 2 – Fragments of epidermis of tests

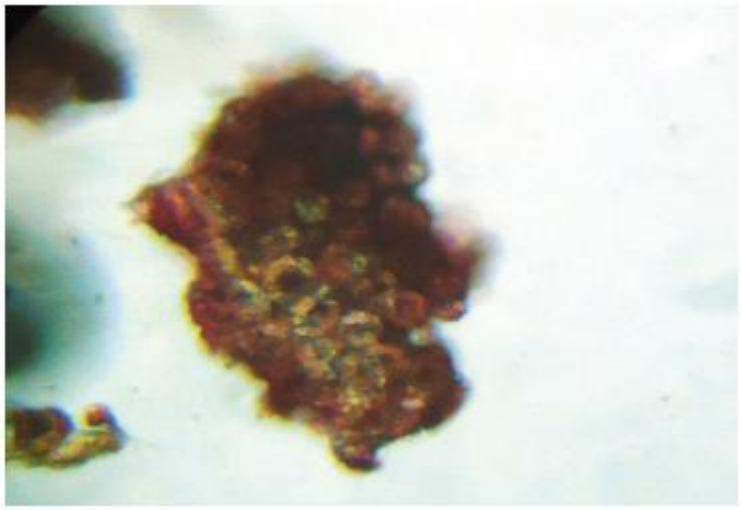

Figure 3- Stone cells

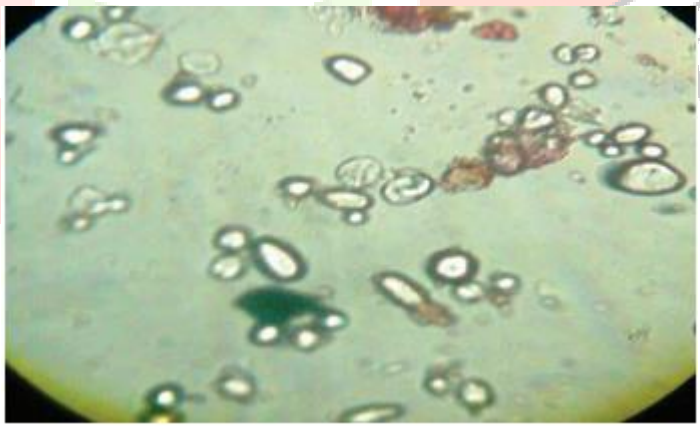

Figure 4 - Irregularly shaped protein bodies

V. CONCLUSION

The assessment of total ash, sulfated ash (residue on ignition), and acid-insoluble ash are all included in the ash determination. The assessment of the total ash includes the selection of both physiological and non-physiological ash. Following the calcination of the drugs, it was discovered that the quantity of non-volatilized residue was 5.2 0.385 percent. Sulphated ash is formed during calcination with concentrated sulfuric acid, and the non-volatilized residue is a result. Due to the fact that sulphates are more resistant to heat than metals, they provide for more precise findings than those produced by simple calcination of the metals contained in the medicine.

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