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Pharmacognostic and Phytochemical Evaluation of *Dolichos lablab* Linn. (Fabaceae)

Sudha Kumari*

Abstract – Microscopy, macroscopy, physicochemical analysis, preliminary phytochemical screening for standardization of Dolichos lablab (FABACEAE) seeds were performed. The seeds are roughly trapezoidal and flattish, with quite thin cotyledons. The hylum is small and linear which gets located in a small depression on the seed's lateral margin. Microscopic evaluation revealed that the epidermis is single – layered, brown, thin walled and shining, because of mucilage in this layer. Endosperm forms bulk of the seed with thick-walled parenchyma. Outer portion of the seed contains alueron grains which are protein in nature. Preliminary phytochemical screening showed the presence of steroids, tannins, proteins amino acids flavonoids, terpenoids, mucilage, volatile oil, saponin and carbohydrates.

Keywords – Dolichos Lablab, Seeds, Microscopic, Macroscopic Phytochemical Screening Standardization.

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INTRODUCTION

Dolichos lablab (FABACEAE) is a much - branched extensive twiner, with trifolidate leaves and tap - root stock. Flowers: bisexual, papilionaceous, with petals get differentiated into standard, wings and keels. The pods are flat and curved, with persistent style. The seeds are flat and ellipsoid measuring 2cm long, with poor in amino acid contents. (Muthu *et. al,* 2006)

The seeds possess astringent diuretic and tonic properties. The decoction of seeds is used in diarrhea, hemorrhage from bowels, and is given to females during parturition to promote discharge of the lochia. As a home remedy kulthi has been used in dysuria, bleeding piles, vaginal bleeding and leucorrhoea. In dysuria, it works due to its diuretic property. It is also used to reduce crystalluria and to lyse stones. The powdered seeds are used as a poultice to induce sweating. (Garimella *et. al.,* 2001; Yazra, 2009)

MATERIALS AND METHODS

Materials :

- Formalin
- Acetic acid
- Ethyl alcohol
- Chloral hydrate
- Toludine blue
- Glycerin
- HCl
- Phloroglucinol
- Seeds of Dolichos lablab
- Safranin

Methodology:

- Macroscopic analysis: The shape, size, surface characters, texture, colour, odour, taste etc. were noted.
- Microscopic analysis: Transverse section of seed passing through midrib region of fresh one were taken and fixed in formalin. The sections were stained in safranin and mounted in glycerine.
- Phytochemical screening: Preliminary phytochemical screening was carried out to find out the presence of various phytoconstituents using standard procedures.

RESULTS AND DISCUSSIONS

In its macroscopic study, the seeds are roughly trapezoidal and flattish, with quite thin cotyledons. The hylum is small and linear which gets located in

a small depression on the seed's lateral margin. (Nanta and Kale, 2011).

In microscopic study, it should that the epidermal layer of testa exhibits brown, shining due to presence of mucilage. Endosperm forms the bulk part of seed and are made up of parenchyma. The alueron forms the outer part which is protein in nature. The embryo provides nutrition and occupies the mid portion of seed between two cotyledons. (Gyana Prakash, 2003; Singh R. *et. al.* 2012).

The physiochemical analysis :

The physical constants such as total cash value, loss on drying and soluble extractive values determined (Table 1, 2, 3).

Table - 1 : Determination of ash values.

Ash type	% of Ash
Total ash	4.68 w/w
Acid insoluble ash	0.478 w/w
Water soluble ash	5.030 w/w
Sulphated ash	9.680 w/w

Table - 2 : Determination of loss on drying.

Plant	Weight
Weight of drug + disc before drying (A)	68.39 gm
Weight of drug + disc after drying (B)	67.31 gm
A – B	1.09 gm
Loss on drying	10.9 gm

Table - 3 : Determination of extractive value.

Extract	Yield
50% Aqueous NaOH soluble extractive value	0.90
Water soluble extractive value	2.30
Methanol soluble extractive value	1.35

Table - 4 : Preliminary phytochemical screening :

Test	50% aq. NaOH	Distilled Water	Methanol
Carbohydrate	+	+	+
Glycosides	+	+	+
Saponins	+	+	+
Tannins	+	+	+
Flavonoids	-	-	-
Proteins	-	-	-

Adulteration of medicinal plants can cause serious health problems to consumers and legal problems for the pharmaceutical industries. The initial step in quality control of medicinal plants is ensuring the authenticity of the desired species for the intended use. It can be conducted via a variety of techniques namely macro and microscopic identification as well as chemical analysis. The observation of cellular level morphology and anatomy form a major aid for the authentication of drugs. The ash values are particularly important to find out the presence or absence of foreign inorganic matter such as metallic salts. The preliminary phytochemical screening revealed the useful information about the chemical nature of the drugs which showed the presence of carbohydrate, glycosides, saponins and tannin in this plant of study.

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Corresponding Author

Sudha Kumari*