

STANDARDIZATION OF A POLYHERBAL AYURVEDIC FORMULATION DAADIMAADI CHURNA

Priyanka Sharma¹, Veena K. H.², Ashwinkumar Soni³, Rajani Kamate⁴

¹Second Year PG Scholar; ²Professor; ³Final Year PG Scholar; ⁴Second Year PG Scholar;
Department of Kaumarbhritya KAHER'S Shri B.M.K Ayurveda Mahavidyalaya, Belgavi, Karnataka, India

Email: priyanka.sharma210390@gmail.com

ABSTRACT

Standardization of drug means confirmation of its identity and determination of its quality and purity and the term quality control refers to the sum of all procedures undertaken to ensure the identity and purity of a particular pharmaceutical. Pharmacognostic characters of herbal drugs play an important role since particular macroscopic features are unique for each plant. *Daadimaadi churna* is an *Ayurvedic* polyherbal formulation useful in wide range of disease (e.g. *Aruchi*) and disorders. Efficacy of formulation depends on their germiners of herbs used. In this paper pharmacognostic investigations like macroscopic and preliminary phytochemical and physico-chemical analysis of *Daadimaadi churna* were studied.

Keywords: *Daadimaadi churna*, Pharmacognosy, Phytochemistry, TLC, Standardization

INTRODUCTION

Standardization of drug means confirmation of its identity and determination of its quality and purity and the term quality control refers to the sum of all procedures undertaken to ensure the identity and purity of a particular pharmaceutical.¹ Pharmacognostic characters of herbal drugs play an important role since particular macroscopic features are unique for each plant. The macroscopic studies of the herbs should be the first and fundamental step to authenticate the botanical source.² Preliminary phytochemical evaluation provides information about presence of phytoconstituents in the extract. Physico-chemical constants indicate the purity and identity of the formulation. In the present investigation preliminary phyto-chemical, physio-chemical constants,

macroscopic and TLC of the formulation were carried out. Need for standardization: The lack of quality standards resulted in mild to serious adverse effects ranging from hepatotoxicity to death. Hence, herbal ingredients requires tools for determining identity, purity and quality and tools to have be technically sufficient, rapid and cost effective with GMP requirements. WHO has set specific guidelines for the assessment of the safety, efficacy and quality of herbal medicines. In order to obtain quality oriented herbal products, care should be taken right from the proper identification of plants, area of collection, their extraction and purification process and rationalizing the combination in case of polyherbal drugs.³ *Daadimaadi churna* is an *Ayurvedic*

polyherbal formulation consisting of fine powders of *Daadima beeja* (*Punica Granatum* Linn.), *Ela* (*Elettaria cardamomnm*), *Twaka* (*Cinnamomn Zeylanicum* Buch.), *Tejpatra* (*Cinnamomn Tamala* Buch.), *Sharkara*. In Ayurveda *Daadimaadi churna* is indicated in Aruchi.⁴

MATERIALS AND METHODS

The ingredients of *Daadimaadi churna* were purchased from GMP certified KLE *Ayurvedic* pharmacy and the raw materials were authenticated by experts from CRF of Shri BMK Ayurveda Mahavidyalya, Shahpur, Belgaum. In preparation of *churna* the ingredients are collected, dried and powdered individually and passed through sieve number

80/85 to prepare fine powder. Each one of the powder is weighed separately as per formulation and mixed together. Organoleptic evaluation was used for identification of sensory characteristics like colour, odour, taste and texture. Active phytochemical constituents like glycosides, flavonoids, alkaloids, tannins were identified through chemical analysis and Qualitative analysis for total ash, acid insoluble ash, water and alcohol soluble extractive values and loss of drying at 105°C were carried out for the polyherbal *Ayurvedic* formulation. Thin layer chromatography (TLC) was also performed and R_f values were also calculated for standardization parameters. Hygienic conditions were maintained by regular disinfecting of the working areas.

Table 1: Ingredients of *Daadimaadi churna*⁴

Sr.no	Ingredients	Biological name	Part used	Quantity
1	<i>Daadima beeja</i>	<i>Punica granatum</i>	Fruit seeds	2 part
2	<i>Twaka</i>	<i>Cinnamomnm zeylanicum</i>	Bark	1 part
3	<i>Sukshma ela</i>	<i>Elettaria cardamomum</i>	Fruit	
4	<i>Tejapatra</i>	<i>Cinnamomnm tamala</i>	Leaves	
5	<i>Sharkara</i>	<i>Saccharum officinarum</i>	Extract	3 part

RESULT AND DISCUSSION

Macroscopy: *Daadimaadi churna* is a brownish fine powder with aromatic odour and sweetish taste.

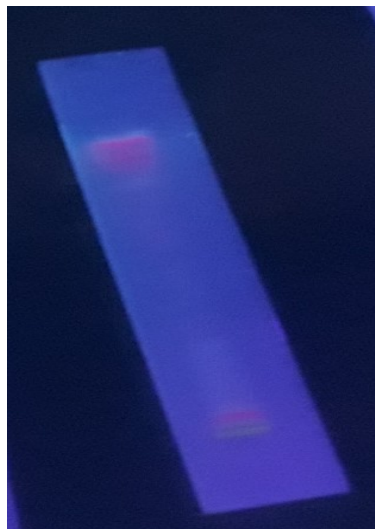
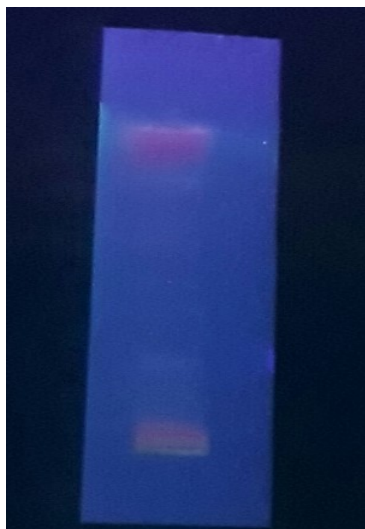
Physio-chemical analysis: Physio-chemical analysis shows 7.97% of moisture content. Ash content of the drug was 3.78% and 0.11% of acid insoluble ash. Alcohol soluble extractives 6.49% represent the extraction of polar constituents like flavonoids, alkaloids. The water soluble extractives 17.05% denotes the presence of inorganic contents.

Preliminary Phyto-chemical test: Preliminary phyto-chemical test of the aqueous alcoholic extract of *Daadimaadi churna* shows presence of alkaloids,

carbohydrates, reducing sugar, flavonoids, proteins and anthraquinone glycoside and the absence of non-reducing sugar, steroids, amino acids, monosaccharides, pentose, hexose, tannins and cardiac glycosides. The water extract of *Daadimaadi churna* shows presence of carbohydrates, reducing sugar, flavonoids and anthraquinone glycoside and the absence of alkaloids, non-reducing sugar, steroids, proteins, amino acids, monosaccharides, pentose, hexose, tannins and cardiac glycosides.

TLC: Among the various solvent systems tested, the mixture containing toluene: Ethyl acetate (7:3) gives the best resolution.

TLC Photo-documentation of Daadimaadi churna



CONCLUSION

The present study analyzed the macroscopic characters, preliminary phyto-chemical, physio-chemical constants and TLC finger print of the formulation. Findings of the study are helpful in standardization of polyherbal Ayurvedic formulation *Daadimaadi churna*, which will promote global acceptance of the formulation and reputation of the *Ayurveda* system.

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