



PHYSICOCHEMICAL ANALYSIS OF KOTTAMCHUKKADI LEPA CHOORNA

Murshida banu, Waheeda banu

1.PG Scholar, Dept of PG studies in Kayachikitsa, Karnataka Ayurveda Medical College & Hospital
Mangalore ,Karnataka ,India.

2.HOD & Professor,Dept of PG studies in Kayachikitsa, Karnataka Ayurveda Medical College & Hospital
Mangalore, Karnataka , India

ABSTRACT

Kottamchukkadi lepa choorna is a herbal formulation, ingredients used in the drug are *kushta*, *shunti*, *vacha*, *shigru*, *lashuna*, *kartoti*, *devadaru*, *sarshapa* and *rasna*. *Kushta* is *vatakaphahara*, *ushna veerya*, *laghu guna* and has antiarthritic property. *Shunti* subsides *vatakaphadosha* and dries away *kapha* and *ama*. *Vacha* has the propertie like *Deepana*(appetizer) and *pachana*(digestives), *vatakapha shamana*. *Shigru* has the properties like *kaphavatahara*, *Deepana* and *shothaghna*(anti-inflammatory). *Lashuna* digests *ama* circulating in the body and lodging in the joints.It pacifies *vyanavayu* and removes joint edema and pain.*Kartoti* has an anti-inflammatory action. *Devadaru* has *vata shamaka* properties. *Sarshapa* having *katu rasa* and *teekshna guna* and it alleviates *vatakapha doshas* and improves *agni*. *Rasna* has the qualities like *vedanasthapana*(analgesic) and *vata shamaka*. Attempt has been made to study physicochemical analysis of the drug.The ingredients of the drug has *tridoshahara*, *dipana*, *pachana*, *shothahara*, *vedanasthapana guna* along with antiarthritic ,anti-inflammatory which are mainly needed for treating *amavata*. This study highlights the results of standardization (identity, purity & strength) tests, physicochemical screening . All the said tests are conducted in The National institute of technology Karnataka, surathkal, Dept of chemical engineering Srinivas nagar mangalore. These studies are important in way of establishing quality-control, efficacy & accept ability of herbal drugs.

KEY WORDS: Physicochemical analysis, *Amavata*, *Tridoshahara*, *Vedanasthapana*, *Shothahara*, Antiarthritic.

INTRODUCTION:

Ayurveda does not give instant relief from diseases but it goes down to the root cause of diseases by using a blend of natural elements and various regimens like *dinacharya*, *rtucharya*, *rasayana therapies*. Thus ensuring there is no relapse of diseases. *Amavata* is one of the crippling disease-causing serious agonizing painful conditions. It is not only a disorder of locomotor system but is a systemic disease. In which pathogenic constituents are mainly *ama* and *vata*. vitiated *vata* circulates the *ama* all over the body through *dhamanies* takes the shelter in *sleshma sthana* especially in joints producing symptoms such as stiffness, swelling and tenderness in the small joints and big joints, making a person lame.

Kottamchukkadi lepa choorna is a classical ayurvedic medicinal preparation , which is mentioned in *sahasrayoga*¹.It is *shoolahara*, *shothahara*, *vatakaphashamaka* and *stambhahara*.Even though many

modern research works are available in respect to its individual ingredients, but a comprehensive profile in respect to the active ingredient is lacking. *Kottamchukkadi lepa churna* was subjected to pharmaceutical evaluation (evaluation of different physicochemical parameters) in order to prepare a profile of the formulation. The future development of the pharmacognostic analysis of herbal drugs is largely dependent upon reliable methodologies for correct identification, standardization and quality assurance of herbal drugs. The application of pharmacognostic protocols such as macromorphology, micromorphology, organoleptic tests, ash value, histochemical studies and UV fluorescence study will help in identifying genuine drugs because these tests result in specific results for a particular drug². Authentication and standardization are the two prior condition, mainly for herbal drugs and for their formulations in ancient system of medicine³.

The aim of the present study is to carry out preliminary physicochemical analysis of the plant materials which are used in the preparation of *Kottamchukkadi lepa choorna*.

AIMS AND OBJECTIVES

To study in detail about Physicochemical properties of *Kottamchukkadi lepa churna*.

DETAIL STUDY OF INGREDIENTS OF KOTTAMCHUKKADI LEPA CHOORNA

Table no-1 : Showing the ingredients of *kottamchukkadi lepa choorna*

	Botanical name	Family	Rasa	Guna	Virya	Vipaka	Part used
<i>Kushta</i>	<i>Saussurea lappa</i>	<i>Asteraceae</i>	<i>Tikta, katu, madhura</i>	<i>Laghu, ruksha, teekshna</i>	<i>Ushna</i>	<i>Katu</i>	Root
<i>Shunti</i>	<i>Zingiber officinale</i>	<i>Scitamineae</i>	<i>Katu</i>	<i>Guru, Ruksha, teekshna.</i>	<i>Ushna</i>	<i>Madhu a</i>	Rhizome
<i>Vacha</i>	<i>Acrous calamus</i>	<i>Araceae</i>	<i>Katu, tikta</i>	<i>Laghu, teekshna</i>	<i>Ushna</i>	<i>Katu</i>	Rhizome
<i>Shigru</i>	<i>Moringa oleifera</i>	<i>Moringaceae</i>	<i>Katu, tikta</i>	<i>Laghu, ruksha, teekshna</i>	<i>Ushna</i>	<i>Katu</i>	Root bark, stem bark
<i>Lashuna</i>	<i>Allium sativum</i>	<i>Liliaceae</i>	<i>Lavana, madhua, katu, tikta, kashaya</i>	<i>Snigdha, guru, teekshna</i>	<i>Ushna</i>	<i>Katu</i>	Bulb
<i>Kartoti</i>	<i>Hugonia mystax</i>	<i>Linaceae</i>	<i>Kashaya, Madhura, tikta</i>	<i>Guru</i>	<i>Sheeta</i>	<i>Katu</i>	Root
<i>Devadaru</i>	<i>Cedrus deodara</i>	<i>Pinaceae</i>	<i>Katu, tikta, kashaya</i>	<i>Rooksha, laghu</i>	<i>Ushna</i>	<i>Katu</i>	Bark
<i>Sarshapa</i>	<i>Brassica juncea</i>	<i>Cruciferae</i>	<i>Tikta</i>	<i>Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	Seed
<i>Rasna</i>	<i>Pluchea lanceolata</i>	<i>Asteraceae</i>	<i>Tikta</i>	<i>Guru</i>	<i>Ushna</i>	<i>Katu</i>	Rhizome

MATERIALS AND METHODS

Source of Data

1. Classical text book of Ayurveda
2. Text books of Modern science
3. Published articles from periodic journals and other magazines.

PHYSICO-CHEMICAL ANALYSIS OF KOTTAMCHUKKADI LEPA CHOORNA

The preliminary physicochemical screening test was carried out for Kottamchukkadi Lepa Churna as per the standard procedures mentioned hereunder.

1. Loss on Drying

An accurately weighed 1g of Kottamchukkadi Lepa Churna formulation was taken in a tarred glass bottle. The crude drug was heated at 105°C for 6 hours in an oven till a constant weight. The Percentage moisture content of the sample was calculated with reference to the shade dried material.

2. Determination of total ash

Weighed accurately 2g of Kottamchukkadi Lepa Churna formulation was added in crucible at a temperature 600°C in a muffle furnace till carbon free ash was obtained. It was calculated with reference to the air dried drug.

3. Determination of acid insoluble ash

Ash above obtained, was boiled for 5min with 25ml of IM Hydrochloric acid and filtered using an ash less filter paper. Insoluble matter retained on filter paper was washed with hot water and filter paper was burnt to a constant weight in a muffle furnace. The percentage of acid insoluble as was calculated with reference to the air-dried drug.

4. Determination of water soluble ash

Total ash 1g was boiled for 5min with 25ml water and insoluble matter collected on an ash less filter paper was washed with hot water and ignited for 15 min at a temperature not exceeding 450°C in a muffle furnace. The amount of soluble ash is determined by drying the filtrate.

5. Determination of water soluble Extractive

5gm of air dried drug, coarsely powered *Kottamchukkadi Lepa Choorna* was macerated with 100ml of distilled water in a closed flask for twenty-four hours, shaking frequently. The Solution was filtered and 25 ml of filtrated was evaporated in a tarred flat bottom shallow dish, further dried at 100° C and weighted. The percentage of water soluble extractive was calculated with reference to the air dried drugs.

6. Determination of alcohol soluble Extractive

1 gm of air dried drug coarsely powdered *Kottamchukkadi Lepa Choorna* was macerated with 20 ml alcohol in closed flask for 24 hrs. With frequent shaking, it was filtered rapidly taking precaution against loss of alcohol 10ml of filtrate was then evaporated in tarred flat bottom shallow dish, dried at 100°C and weighted. The percentage of alcohol soluble extractive was calculated with reference to air dried drug.

Table no-2 : Showing the observed values of physico chemical properties

Sl.no	Parameters	<i>Kottamchukkadi choorna</i>
1	Moisture wt%	15.30
2	Ash content wt%	5.79
3	Acid insoluble Ash wt%	0.86
4	Water soluble Ash wt%	1.75
5	Water soluble Extraction wt%	18.06
6	Alcoholn soluble Extraction wt%	10.77

DISCUSSION

As herbal drugs having medicinal properties, it is necessary to maintain its quality and purity for its proper use. Physicochemical properties play an important role in product development including studies on biological performance of drugs. These tests encompass a range of physical and chemical analyses that provide valuable information about the identity, composition, and characteristics of herbal products. The active ingredient are subjected to a suitable method of extraction and purification for the isolation of phytopharmaceuticals. Extractive values also help in estimation of specific element soluble in particular solvents. Microscopic evaluation is a crucial aspect of physicochemical testing for herbal medicines.

It involves the examination of the cellular structures and morphological features of plant materials under a microscope. This analysis provides valuable information about the identity, purity, and quality of herbal products. Macroscopic evaluation of herbal drugs involves the examination of visible physical characteristics of plant materials with the naked eye or under low magnification. This process provides valuable information about the identity, quality, and authenticity of herbal drugs, and these macroscopic characters acts as diagnostic criteria and helps to assess purity of drugs⁴.

The observed values of the physiochemical properties moisture wt(15.30%), ash content (5.79%)water insoluble ash(1.75%),water soluble extraction (18.06%),alcohol soluble extraction (10.77%).

CONCLUSION

India has a rich history of traditional system of medicine based upon six systems, out of which Ayurveda stands to be the most important one. It is very difficult to understand fundamentals and complete science. There is considerable amount of research work is needed to establish its strong foundation along with understanding its basic concept. In olden times, *Vaidyas* used to treat patients on individual basis, and prepare drug according to the requirement of the patient. But the scenario has changed now; medicines are being manufactured on the large scale in Pharmaceutical units, where manufacturers come across many problems such as availability of good quality raw material, authentication of raw material, availability of standards, proper standardization methodology of single drugs and formulation & quality control parameters⁵. A systemic study of crude drug is very important for quality control and analysis. From this study, we have been able to gather important information regarding kottamchukkadi lepa choorna which has ascertained its purity as a drug, and simultaneously establishes its basic chemical profile. The authors hope that the information provided by this present study can be useful for further studies on *Kottamchukkadi choorna*.

REFERENCES:

- 1)Sahasra Yoga, A text with English translation, by Dr.K.Nishteshwar and Dr.R.Vaidyanath, Parishishta Prakarana taila, Chowkambha Sanskrit series office Varanasi, edition -2023, chapter -11,Page. No-405.
- 2)<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4458905/#:~:text=The%20application%20of%20pharmacognostic%20protocols,results%20for%20a%20particular%20drug>
- 3) Nagani KV, Kevalia J, Chanda SV. Pharmacognostical and phytochemical evaluation of stem of *Cissus quadrangularis* L. *Int J Pharm Sci Res.*, 2011; 2: 2856-2862.
- 4) Mukharjee P.K. Quality Control of herbal drugs. *Business Horizons*, New Delhi, 2002; 110-113.
- 5) <https://www.slideshare.net/LavanyaSA/drlavanyasa-standardization-of-herbal-drugs>.