



STANDARDIZATION OF THREE DIFFERENT NILAVEMBU CHURNA PRODUCTS AVAILABLE IN THE INDIAN MARKET - ORGANOLEPTIC AND PHYSICAL EVALUATION

**Prathiba M*, Sudhakar P, Mohammed Yasir K, Sivakumar S,
Vijay Anand SR, Jaisurya V, Dr. Karthi J**

Department of Pharmacognosy, Pallavan Pharmacy College, Kolivakkam, Iyengarkulam-631502 Kanchipuram district, Tamilnadu, India.

ABSTRACT

Standardization of herbal drug formulation is an essential process to assess the quality and purity of product. The Indian subcontinent is enriched by a variety of flora-both medical and aromatic plants. Herbal medicines are now in high demand in the advancing world for primary health care not because they are in-expensive but also for the superior cultural acceptability, better compatibility with the human body and minimal side effects. The high usage of herbal drugs by the people is the driving force to evaluate the health claim of these products. Nilavembu churna - a poly herbal formulation, is a decoction concentrate commonly used in siddha medicine for the treatment of dengue fever. Synonym for nilavembu- Green chirata, Creat, King of bitter, kirayat, etc., This plant has got a enormous therapeutic efficiency in treating different type of sickness in human body. Such as skin disorder, hepato biliary illness, diabetes mellitus and others. In this study, evaluating the nilavembu churna product by 1)Organoleptic parameters - Appearance, Colour, Odour, Taste, texture and 2) Physical evaluation - Total ash value, Acid insoluble ash, Water soluble ash and Moisture content. By using above parameters, finding the variation among three nilavembu products.

Keywords: Nilavembu churna, Standardization, Dengue fever, Ash values.

INTRODUCTION

Nilavembu churna - A poly herbal formulation, is a decoction concentrate extensively used in siddha system of medicine[1]. Siddha system is one of the traditional medicine system practiced in India for thousands of years of ago

HERBS:

Herbs are plants or parts of plant (leaves, roots, stem, flowers, etc.,) used for flavouring, food or medicine[2].

HERBAL DRUGS:

Finished herbal products consists of herbal preparation from one or more herbs that contain active ingredients.[3] Nowadays, Herbal medicine has become a popular form of health care management. The consumption of plant based medicines and other botanicals has increased

in recent years. India having a rich inheritance of traditional medicine constituting with its different elements like Ayurvedha, siddha and Unani.

The subject of herbal drug standardization is vastly wide and deep for the purpose of analysis work on standardization of herbal formulations and nutraceuticals. Scientifically validated and technologically standardized herbal medicine may be derived using a safe path based on the traditional knowledge database. This may play a vital role in drug discovery and development[4].

Nilavembu churna have nine ingredients in equal proportion. It is also recommended for alleviating the symptoms of COVID-19 to its immunomodulating attribute. Nilavembu-Neem of the ground, The plant has strong bitter taste[5].

Organoleptic evaluation means study of drugs using organs of senses. Physical constants are sometimes taken into consideration to evaluate certain drugs. Physical properties are useful in identification and detection of constituents present in product[6]. Total ash value - Useful for detecting low grade products, exhausted products and earthy matter with drug. Acid insoluble ash - Used for the estimation of earthy matter present on roots, rhizomes and also on the leaves. Water soluble ash - detection of material exhausted by water or not[7].

MATERIALS AND METHOD:

Nilavembu churna product was collected from Siddha hospital (kanchipuram) and some medical shops. Nilavembu churna consists of 9 ingredients in equal proportion.

1. Nilavembu (*Andrographis paniculata*)
2. Vilamichu ver (*Plectranthus amboinicus*)
3. Chukku (*Zingiber officinale*)
4. Milagu (*Piper nigrum*)
5. Koraikizhangu (*Cyperus rotundus*)
6. Peipudal (*Trichosanthes cucumerina*)
7. Vettiver (*Vetiveria zizanioides*)
8. Santhanam (*Santalum album*)
9. Parpadagam (*Mollugo cerviana*)

Methodology:

In this study, To evaluate the Nilavembu churna in two methods.

- ✧ Organoleptic Evaluation
- ✧ Physical Evaluation

Organoleptic Evaluation:

All the three samples of Nilavembu churna products were analysed for,

- A. Appearance
- B. Colour
- C. Odour
- D. Taste
- E. Texture

PHYSICAL EVALUATION

Total Ash Value:

It is used for discriminating low grade products, drugs from earthy matter and exhausted drug .

Determination:

Weigh accurately about 3gms of powdered drug in tared silica crucible. Incinerate the heat until free from carbon and cool. Keep it in desiccator[8].

Total ash content was calculated by the following formula.

Percentage of total ash =

$$\frac{\text{Weight of ashed sample}}{\text{Weight of sample}} \times 100$$

Weight of sample taken

Acid Insoluble Ash Value:

It is used for determination of earthy matter present on roots, rhizomes and leaves.

Determination:

Boil the total ash obtained from above for 3-5mins with 25ml of dilute HCL. Filter and collect the insoluble matter using whatman filter paper no:42. Wash the filter paper with hot water, ignite in tared silica crucible, cool and desiccators. Weigh the residue and calculate the acid insoluble ash of drug[9].

The soluble ash value was calculated by the following formula.

Percentage of Acid insoluble ash =

$$\frac{\text{Weight of acid insoluble ash}}{\text{Total weight of ash}} \times 100$$

WATER SOLUBLE ASH VALUE:

It is used to detect either material exhausted by water or not.

Determination:

Boil the total ash obtained from above for 3-5mins with 25ml of distilled water. Filter and collect the insoluble matter using whatman filter paper no:42. Wash the filter paper with hot water, ignite in tared silica crucible, cool and desiccators. Weigh the residue and calculate the water soluble ash of drug.

The soluble ash value was calculated by the following formula.

Percentage of water soluble ash =

$$\frac{\text{Weight of water soluble ash}}{\text{Total weight of ash}} \times 100$$

Moisture content :

Moisture content is responsible for the decomposition of drug. Decomposition may done by chemical change or microbial attack.

Determination:

A small amount of Sample was placed in a crucible and placed in a hot air oven for removal of moisture content at $100 \pm 1^\circ\text{C}$. The dried samples were weighed in crucible with lid after cooling to room temperature[10].

The moisture content was calculated by the following formula.

Percentage of moisture content =

$$\frac{\text{Weight of sample} - \text{Weight of dried sample}}{\text{Weight of sample}} \times 100$$

TABLE 1: Organoleptic evaluation of Nilavembu churna

Parameters	Sample A	Sample B	Sample C
Appearance	Powder	Powder	Powder With Presence Of Sticks
Colour	Green	Yellow	Brownish Yellow
Odour	Characteristic	Characteristic	Characteristic
Taste	Strong Bitter	Bitter	Bitter
Texture	Very Fine Powder	Moderate Coarse Powder	Very Coarse Powder With Presence Of Sticks

TABLE 2: Physical evaluation of Nilavembu churna

Testing Parameters	Sample A (%)	Sample B (%)	Sample C (%)
Total Ash Value	8.72%	9.32%	9.65%
Acid insoluble ash	1.45%	1.87%	1.93%
Water soluble ash	0.76%	2.68%	3.47%
Moisture content	3.8%	4.3%	5.7%

RESULTS AND DISCUSSION:

The Organoleptic parameters comparison study among three nilavembu churna products are given below table 1. The Physical parameters comparison study among three nilavembu churna products are given in table 2.

CONCLUSION:

For the assurance of quality, safety and effectiveness of the herbal product, standardization is essential. The Organoleptic and Physical evaluation of nilavembu churna products from three different brands

available in the Indian market was carried out. The ash value of sample A was less than sample B and C. It indicates the sample A is less contaminated than sample B and C. The moisture content of sample A was less than sample B and C. It indicates stability of sample A is better than sample B and C. From the observation of organoleptic and Physical evaluation, Sample A was better than Sample B and C. Therefore, **Sample A** is considered to be the best for therapeutic use based upon above parameter results.

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