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EVALUATION OF PHYSICOCHEMICAL PROPERTIES OF A POLYHERBOMINERAL SIDDHA FORMULATION *SAAMUTHRA CHOORANAM*

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ABSTRACT

Introduction: The ancient Siddha system of medicine is unique in its way of healing diseases. A widespread evidences on herbs (*Mooligai*), minerals (*Thaathu*) and animal products (*Jeevam*). However as per WHO guidelines, for any medical formulation standardization plays an inevitable role before marketing. This study is to analyse the physicochemical properties of a polyherbomineral Siddha formulation *Saamuthra Chooranam for Eri gunmam* (Acid Peptic ulcer Disease). **Aim and Objectives:** The aim of this study is to determine the physicochemical properties of a poly herbomineral formulation *Saamuthra Chooranam* (SAC). **Materials and Methods:** The drugs of *Saamuthra Chooranam* were authenticated by the Department of Medicinal Botany, Government Siddha Medical College, Palayamkottai. Further those drugs were purified as mentioned in classical Siddha literatures. The drugs were finely powdered and analysed for the physicochemical parameters including the percentages of total ash, acid insoluble ash, water soluble ash and sulphated ash, water soluble extractive, alcohol soluble extractive, pH value, Swelling index, Foaming index, Volatile oil percentage and total fat percentage. **Results and Discussion:** The *Saamuthra Chooranam* (SAC) showed a pH value of 4.58% that indicates the slight acidic nature. 4.5% of volatile oil content was found from the studies. **Conclusion:** The physicochemical parameters are evaluated for *Saamuthra Chooranam* that would be helpful for further preclinical studies on it.

KEYWORDS: *Eri gunmam, Saamuthra chooranam,* Physico chemical parameters, Peptic Ulcer Disease.

1. INTRODUCTION

The Standardization plays a key role in a product marketing as per WHO. Preliminary standardization steps are essential for identification of genuine drug and setting analytical standards. Therapeutic potential of herbal drugs are attributed to the presence of phytochemicals. Peptic Ulcer Disease is a relatively common condition worldwide with an annual incidence ranging from 0.10% to 0.19%. It is sometimes associated with many bacterial and fungal origin. Peptic Ulcer Disease is a break in the inner lining of the stomach, first part of small intestine or sometimes the lower oesophagus. Common symptoms of PUD include.

- Epigastric pain
- Bloating
- Loss of appetite
- Nausea and vomiting
- Hematemesis
- Melena

This paper aims to bring out the physicochemical parameters of a polyherbomineral Siddha formulation *Saamuthra Chooranam. Saamuthra Chooranam*, coded SAC, is a polyherbomineral formulation. This herbomineral formulation is found to be effective in dealing with *Eri Gunmam* (Peptic Ulcer Disease).

2. AIM AND OBJECTIVE

The aim of this study is to evaluate the physicochemical parameters of *Saamuthra Chooranam*.

3. MATERIALS AND METHODS

3.1. Identification and Collection of plant materials

The drugs in *Saamuthra Chooranam* were collected from a Raw Drug Store in Tirunelveli and were authenticated by the Department of Medicinal Botany at Government Siddha Medical College, Palayamkottai.

3.2. Purification and preparation of SAC

The drugs were then purified as quoted in the classic Siddha literatures. The drugs were dried under shadow and finely powdered. Finally the powder was sieved using pure white cloth which is mentioned as *Vasthirakayam* in *Siddha*. Finally stored in a clean and air tight container.

Table No. 1: Ingredients of the *Saamuthara Chooranam*.

S. No.	Ingredients	*Botanical Name*	Family	Part used
1.	*Inji*	*Zingiber officinale*	Zingiberaceae	Rhizome
2.	*Thippili*	*Piper longum*	Piperaceae	Flower bud
3.	*Vaaividangam*	*Embelica ribes*	Myrsinaceae	Seed
4.	*Kadukkai*	*Terminalia chebula*	Combretaceae	Pericarp
5.	*Perungayam*	*Ferula asafoetida*	Apiaceae	Resin
6.	*Omam*	*Carum coptium*	Apiaceae	Seed
7.	*Indhuppu*	Sodium chloride (Impure)	-	-
8.	*Evatcharam*	Potash carbonate (Impure)	-	-
9.	*Kalluppu*	Sodium chloride	-	-

Then the percentages of total ash, acid insoluble ash, water soluble ash, sulphated ash were calculated. Other estimations like Loss on drying, total fat percentage, swelling index, foaming index were also evaluated with standard methods.

3.3. Determination of Physico-Chemical properties

Figure 1: *Saamuthara Chooranam.*

The percentage of ash contents including total ash, acid soluble ash, water soluble ash and sulphated ash were estimated as per Indian Siddha Pharmacopoeia. As per WHO guidelines, the other extractive parameters, swelling index and foaming index were estimated. The extracts concentrated at reduced room temperature and reduced pressure.

4. RESULTS AND DISCUSSION

4.1. Organoleptic characters

Colour- brown Taste – salty

Odor – typical Consistency – Powder

4.2. Physico chemical parameters

The test for Loss on drying is used to determine the moisture content. This sample SAC shows 9.86% at 105˚C which indicates the presence of moisture content in it. Ash values refer to the residue remaining after incineration of the sample. It is helpful in determining the quality and purity of the drug.

The ash content for this formulation is of minimal percentage and thus ensuring its purity. Extractive values are useful for the evaluation of the drugs that cannot be estimated readily by other means.

Higher the extractive values higher would be the ensurity of drug purity. The pH values determines whether the drug is of acidic nature or of alkaline nature. Swelling index, which is defined as the volume in ml taken up by the swelling of 1g of herbal material under specified conditions.

Estimated physico chemical properties of SAC are given in the below table.2

Table 2: Physico Chemical Properties of SAC.

S. No.	Parameters	Results
1.	Loss of drying	9.86%
2.	Total ash	4.06%
3.	Sulphated ash	5.69%
4.	Acid insoluble ash	0.89%
5.	Water soluble ash	1.87%
6.	Water soluble extractive	16.18%
7.	Alcohol soluble extractive	16.18%
8.	pH	4.8
9.	Swelling Index	3.9 ml
10.	Foaming Index	100
11.	Volatile oil	0.5%
12.	Total fat	1.06%

5. CONCLUSION

Thus it is evident that Saamuthra Chooranam ensures every physico chemical parameters. Further more advanced evaluations like hydrolysis, osmosis, oxidation etc. are to be

evaluated and this article would remain as a keystone to those further advanced preclinical research perspectives.

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