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**PHARMACEUTICAL AND PRELIMINARY ANALYTICAL STUDY  
ON SUDHA PARPATI****SANGEETA BK<sup>1</sup>, SHARMA M<sup>2\*</sup>, HUSSAIN G<sup>3</sup> AND KADIBAGIL VK<sup>4</sup>**

<sup>1,2</sup>PG Scholar, Dept. of Rasashastra & Bhaishajya Kalpana, <sup>3</sup>HOD and Associate Professor, Dept. of Rasashastra & Bhaishajya Kalpana, <sup>4</sup>Professor, Dept. of Rasashastra & Bhaishajya Kalpana Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan, Karnataka, India

**\*Corresponding Author: Dr. Mandvi Sharma: E Mail: [mandvi1997@gmail.com](mailto:mandvi1997@gmail.com)**

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**ABSTRACT**

Parpati kalpana is a unique formulation categorized under the murchita parada yoga. It is named as parpati as the end product resembles the shape, consistency of the "parpata" –papad shape (wafer). It is mentioned in grahani chikitsa of Chakradatta written by Acharya Chakrapanidutta of 11th century. There are two types of parpati: Sagandha parpati and Nirganda parpati. Sudha parpati is a rasashastra formulation mentioned in the text book of Rasamritam. It contains shuddha gandhaka (sulphur) and sudha churna (lime powder). This formulation comes under schedule 'E' drug so it should be taken under medical supervision only.

Sudha parpati was prepared with 5g of sudha (lime) and 10g of shuddha gandhaka (purified sulphur) and physico – chemical analysis of sudha parpati was done. pH of parpati was 9.2. Total ash obtained was 39 %. The loss on drying was 1.1%, water soluble extract was 1% and alcohol soluble extract was 0.6%, which indicates it is more soluble in water as compared to alcohol. Parpati kalpana is one of the four categorized Parada yoga, with a shelf life of 10 years. It is a simple formulation with two ingredients that can be prepared with pharmaceutically simple and easy methods. However, it is not used in clinical practice. More research is needed to bring the yoga into limelight.

**Keywords: Sudha, gandhaka, parpati, ayurveda, analysis, prameha pidaka**

## INTRODUCTION:

“Parpati kalpana” are unique formulation categorized under the murchita parada yoga. The formulation is named as parpati as the end product resembles the shape, consistency of the “parpata” –papad shape (wafer). First reference of parpati is mentioned in grahani chikitsa of Chakradatta written by Acharya Chakrapanidutta of 11<sup>th</sup> century [1]. Mainly two types of parpati are explained, which includes sagandha parpati and nirganda parpati. Sagandha parpati are formulations which includes gandhaka (sulphur) as an ingredient. Nirganda parpati are the formulations which do not contain gandhaka (sulphur) as an ingredient.

Sudha parpati is a sagandha parpati yoga mentioned in the text book of Rasamritam. Rasamritam is a recent classical book of rasashastra written by Late Shree Yadavji Trikamji Acharya in 20<sup>th</sup> century. The formulation contains shuddha gandhaka (sulphur) and sudha churna (lime powder). The dose of sudha parpati is 1-2 ratti (125mg- 250 mg). It is indicated in prameha pidaka, pimples, kantamala and other skin disorders [2]. This formulation is

not in practice though it’s a simple preparation. Another reference is available for sudha parpati in rasoddar tantra for rakta pitta (bleeding disorder). It contains 6 minerals (roupya, tapyā, sphatika, jaharmohara, rasa, gandhaka), 2 animal products (mukta, pravala) and 6 bhavana (levigation) dravyas (draksha, kustumburu, nimba, swetachandan, nimba, anjana). It is indicated in raktapitta (bleeding disorder), pradara (menometrrahagia), yonisrava (vaginal discharge), somaruja (diabetes insipidus), jirna jwara (chronic pyrexia), Daha (neurasthenia), amlapitta (hyperacidity), ura ksahta (chest injury), prameha (diabetes). This formulation comes under schedule ‘E’ drug so it should be taken under medical supervision only [2]. The earlier reference of sudha parpati contains only two ingredients, so it was taken for the present study.

## MATERIALS AND METHODS:

### Collection of raw materials:

Raw drugs gandhaka (sulphur) and sudha churna (lime powder) were procured from the teaching pharmacy of Dept RSBK, SDMCA&H.

Table 1: Ingredients of Sudha parpati

S. No.	Ingredients	English name	Quantity
1	Shuddha gandhaka	Sulphur	10gm
2	Sudha churna	Lime powder	5gm

**Preparation of Sudha Parpati:**

Shuddha Gandhaka (sulphur) and sudha churna (lime powder) were triturated (mardana) to convert it into a homogenous mixture. Fine powder of the above mixture was taken in a loha darvi (iron ladle). The darvi was heated in low flame on a gas stove, with frequent stirring of the contents. When the contents melted it was poured on ghee smeared banana leaf, over it another banana leaf is kept and pressed with a plate. After a

few moments of pressing, the plate is removed and the yellowish white coloured parpati (wafer) is collected.

**Analytical Study**

The analysis of the prepared sudha parpati was carried at teaching pharmacy of Dept RSBK, SDMCA&H Hassan

**Organoleptic -characters:**

Organoleptic characters like colour, smell and taste were examined.

**Table 2: Results of analytical study**

S. No.	Organoleptic characters	Results
1	Colour	Yellow
2	Odour	Characteristic
3	Taste	Tasteless
4	Consistency	Solid

**Physico-chemical characters****pH [4]:**

Standard buffer solution: Dissolved one tablet of pH 4, 7 and 9.2 in 100 ml of distilled water.

Determination of pH: 1 gm of sample was taken and makes up to 10 ml with distilled water, stirred well and filtered. The filtrate was used for the experiment. Instrument was switched on. 30 minutes time was given for warming pH meter. The pH 4 solution was first introduced and the pH adjusted by using the knob to 4.02 for room temperature 30°C. The pH 7 solution was introduced and the pH meter adjusted to 7 by using the knob. Introduced the pH 9.2 solution and checked the pH reading without adjusting the knob. Then the sample solution was introduced and reading was noted. Repeated the test

four times and the average reading were taken as result.

**Loss on drying [5]:**

10 g of sample (sudha parpati) was placed in tared evaporating dish. It was dried at 105°C for 5 hours in hot air oven and weighed. The drying was continued until difference between two successive weights was not more than 0.01 after cooling in desiccators. Percentage of moisture was calculated with reference to weight of the sample.

**Total ash [6]:**

2gm of drug was accurately weighed in a tarred silica dish. The silica dish was kept in a muffle furnace at a temperature of 250 – 300°C, for about 8 hours. Then silica dish was cooled in a vacuum and weighed. Percentage of ash was calculated.

**Water soluble extractive [7]:**

Five gram of drug was taken in coarse powder form, along with 100ml of distilled water in a closed flask. The flask was subjected to shaking frequently for six hours, and then allowed to stand for eighteen hours. After completion of eighteen hour, the contents were filtered rapidly, and 25 ml of the filtrate was evaporated in a tarred flat bottom shallow dish at 105°C in a hot water bath and weighed. The percentage of water-soluble extractive was calculated with reference to air dried drug.

#### Alcohol soluble extractive [8]:

Five gram of drug was taken in coarse powder form, along with 100ml of alcohol in a closed flask. The flask was subjected to shaking frequently for six hours, and then allowed to stand for eighteen hours. After completion of eighteen hour, the contents were filtered rapidly, and 25 ml of the filtrate is evaporated in a tarred flat bottom shallow dish at 105°C and weighed. The percentage of alcohol-soluble extractive was calculated with reference to air dried drug.

**Table 3: Results of Physico-chemical analysis**

S. No.	Parameters	Results
1	pH	9.2
2	Loss on drying	1.1%
3	Total ash	39%
4	Water soluble extractive	1%
5	Alcohol soluble extractive	0.6%

#### OBSERVATIONS AND RESULTS:

Pharmaceutical study: It took 6 minutes to melt the homogenous mixture of gandhaka (sulphur) and sudha churna (lime powder) at temperature of 120°C. Care was taken to

place the darvi (iron ladle) sufficiently above the gas flame as gandhaka (sulphur) was easily catching fire. 9.47 gm of parpati was obtained from 15gm of total quantity of ingredients.

**Table 4: Results of pharmaceutical study**

S. No.	Parameters	Quantity
1	Total quantity of Ingredients taken	15gm
2	End product obtained	9.47gm
3	Loss	5.6 gm



**Shodita gandhaka**



**Sudha churna**



Melting sudha churna and gandhaka



Sudha parpati

Figure 1: Pictures of Sudha parpati

**DISCUSSION:**

Sudha parpati is a simple formulation with two ingredients sudha (lime) and gandhaka (sulphur). It took 6 minutes to melt the homogenous mixture of gandhaka (sulphur) and sudha churna at 120°C. Melting point of gandhaka is 112.8°C and it burns at 270°C with bluish flame to sulphurdioxide [9]. So proper care was taken to avoid charring of gandhaka (sulphur) by keeping it in madhyama agni (moderate fire) throughout the procedure.

Sudha parparti was prepared with 5g of sudha (lime) and 10g of gandhaka (sulphur) and physico – chemical analysis of sudha parpati was done. Colour of parpati was yellowish – green with characteristic odor and tasteless. pH of parpati was 9.2 which indicate it is alkaline in nature. Total ash obtained was 39 %. The loss on drying was 1.1%, indicating very low moisture content, which may be the cause of the product's longer shelf life. However, it should still be kept in an airtight container to prevent it from contamination. This

parpati's extract was 1% soluble in water and in alcohol it was 0.6% soluble, which indicates it is more soluble in water as compared to alcohol. So, its anupana (vehicle) is mentioned as water and milk.

**CONCLUSION:**

Parpati kalpana are one among the four categorized Parada yoga. For parpati it is mentioned that there is no expiry date if it is kept in proper conditions [10], but as per new amendment shelf life of parpati is told as 10 years [11]. It is a simple formulation with two ingredients that are easily available with pharmaceutically simple and easy method of preparation. The preliminary analytical standards can be taken as a base for further researches. Though a simple formulation it is not used in clinical practice. More such research in the area will bring the yoga into limelight.

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