

## COMPARATIVE ANALYTICAL STUDY OF GUGGULU (COMMIPHORA MUKUL) SHODHANA DONE IN DIFFERENT MEDIA

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### ABSTRACT

*Guggulu* is one of the drugs used in *Ayurveda* in many pharmaceutical preparations. Raw *Guggulu* has physical and chemical impurities which need to be eliminated before using in further processes. The procedure adopted to achieve this is known as *Shodhana*. *Guggulu Shodhana* is done using different liquid media. This study was put forward to do the analytical comparison of *Guggulu Shodhana* done in different media. **Aims & Objectives:** The aim was to do *Guggulu Shodhana* in different media and to evaluate and compare the analytical properties of *Shuddha Guggulu*. **Materials & Methods:** *Shodhana* of *Guggulu* was done in *Jala*, *Gomutra*, *Godugdha* and *Triphala Kwatha* by adopting *Analapaka* (Heating) procedure. **Results:** It was observed that *Guggulu Shodhana* done in *Triphala Kwatha* gives better yield. The extractives were also found to be higher. **Discussion:** The preliminary analysis done shows variations in different parameters which can be correlated to the media used. All the media, except *Gomutra*, are slightly acidic in nature.

**Key words:** *Shodhana*, *Guggulu*, *Gomutra*, *Godugdha*, *Triphala Kwatha*.

### INTRODUCTION:

Since *Vedik* period, *Guggulu* is being used for medicinal purpose. *Guggulu* is one of the main ingredients in many *Ayurvedic* pharmaceutical preparations like – *Vati*, *Gutika*, *Rasakriya*, *Taila* (Oil), *Ghrita* (Ghee), *Avaleha*, *Lepa*, *Dhupa* etc. *Guggulu* has its own therapeutic properties and it is also used as binding agent during the preparation of *Vatis* (pills). *Guggulu* resin is collected from bark of *Commiphora mukul* and is sticky in nature, so there are higher chances of contamination by sand, soil, sticks etc. The raw *Guggulu* has more *Tikshna*, *Ushna* and *Ruksha* properties which if used as such, it may cause

harmful effects. Hence, to eliminate these physical and chemical impurities and to make it suitable for internal administration along with enhancement of properties of *Guggulu*, a modificatory procedure is adopted since ancient period called – *Shodhana*.

For *Shodhana* of *Guggulu*, the heating and dissolving procedure of *Guggulu* is done using different media like – *Gomutra* (Cow's urine), *Godugdha* (Cow's Milk), *Jala* (Water), *Triphala Kwatha* (Decoction of *Triphala*), *Eradamula Kwatha* (Decoction of *Eradamula*) etc. Thus, *Guggulu Shodhana* done by using different media may have different physio-chemical cha-

characteristics and it will be observed and compared in this study.

**AIMS:**

- To compare the analytical properties of *Shuddha Guggulu* done in *Jala*, *Gomutra*, *Godugdha* and *Triphala Kwatha*.

**OBJECTIVES:**

- To do *Shodhana* of *Guggulu* using different media like – *Jala*, *Gomutra*, *Godugdha* and *Triphala Kwatha*.
- To evaluate the analytical properties of *Shuddha Guggulu* done using different media.
- To compare evaluated properties of *Shuddha Guggulu* done using different media.

**MATERIALS:**

- *Guggulu Niryaasa* (Resin).
- *Jala* (Potable water).
- *Gomutra* (Cow's urine).
- *Godugdha* (Cow's milk).
- *Triphala Kwatha* (Decoction of *Triphala*).

**METHODOLOGY:**

- Raw *Guggulu* was taken and visible foreign matters like sand, sticks, etc. were removed manually and were bundled in double layered cotton cloth.
- The media was heated and the bundle of *Guggulu* was soaked in it over night.
- The next morning, maceration of *Guggulu* was done and squeezed to get maximum quantity of *Guggulu*.
  - Residue from the bundle was discarded.
- The collected filtrate was heated on low flame (72<sup>0</sup> C to 78<sup>0</sup> C) with continuous and vigorous stirring to avoid sticking and burning of *Guggulu* at the bottom of vessel.

- After thick mass formation, the heating was stopped and this mass was spread on plate.
- This plate was kept in hot air oven at 35<sup>0</sup> C for complete drying and after which it was stored in air tight glass container.

The same procedure of *Shodhana* of *Guggulu* was carried out using media – *Jala*, *Gomutra*, *Godugdha* and *Triphala Kwatha*.

**Precautions Taken:**

- Visible foreign matters were removed before weighing raw *Guggulu*.
- Stainless steel vessels were used.
- Weighed *Guggulu* was added in media when it was still hot.
- Maceration of *Guggulu* in respective media done thoroughly for complete dissolution.
- Very low flame was maintained for heating.
- Small quantity of *Ghrita* was applied to the surface of plate, before spreading *Guggulu* to avoid sticking of *Guggulu* on it.
- *Guggulu* was spread in a very thin layer.
- After complete drying, *Shuddha Guggulu* was stored in sterile air tight glass container.

**RESULTS:** The obtained quantity of *Shuddha Guggulu* varies according to the media used. The figures have been shown in Table 1. Variation in the organoleptic characteristics of *Shuddha Guggulu* is shown in Table 2. The analytical figures are shown in Table 3. Graphical presentation of the same has been depicted in Graph 1.

**DISCUSSION:**

*Triphala Kwatha Shodhita Guggulu* showed higher values of loss on drying test compare to *Jala*, *Gomutra* and *Godugdha Shodhita Guggulu*. It may be due to presence of water absorbing cellular particles of *Triphala*. The total ash content of *Gomutra Shodhita Guggulu* is considerably high. This may be because of high amount of mineral contents of *Gomutra* as compared to *Triphala Kwatha*, *Godugdha* and *Jala*. *Gomutra Shodhita Guggulu* showed high levels of acid insoluble ash compare to *Triphala* and *Godugdha Shodhita Guggulu* and the lowest of all in the *Jala Shodhita Guggulu*. This represents higher

amount of silica which may be the result of alkaline property of *Gomutra* causing excellent dissolution of *Guggulu*. Water and alcohol solubility of *Triphala Shodhita Guggulu* is high as compared to *Godugdha*, *Jala* and *Gomutra Shodhita Guggulu* due to high amount of sediment in *Triphala Kwatha*. Yield of *Shodhita Guggulu* was increased in *Triphala Kwatha Shodhita Guggulu* because of *Triphala* particles. The increased weight of *Godugdha Shodhita Guggulu* is because of solid contents of *Godugdha*. *Gomutra* and *Jala Shodhita Guggulu* showed decrease in weight because of no solid content in both

**Table 1: Yield of Shodhita Guggulu:**

Type of Shuddha Guggulu	Quantity taken (in grams)	Quantity obtained (in grams)
<i>Jala Shodhita Guggulu (A)</i>	100	88
<i>Gomutra Shodhita Guggulu (B)</i>	100	92
<i>Godugdha Shodhita Guggulu (C)</i>	100	112
<i>Triphala Shodhita Guggulu (D)</i>	100	128

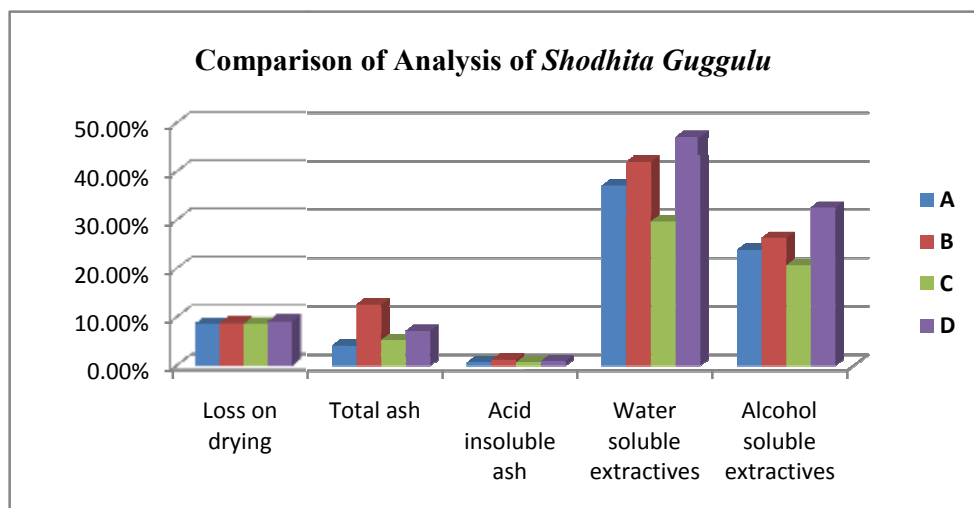
**Table 2: Ornganoleptic observations:**

Characters	A	B	C	D
Colour	Brown	Dark Brown	Faint Brown	Dark Brown
Odour	<i>Guggulu</i> Specific	<i>Gomutra</i> Specific	Faint Chocolaty	<i>Guggulu</i> Specific
Consistency	Hard	Hard	Moderately hard	Hard
Taste	<i>Tikta</i> (Bitter), <i>Kashaya</i> (Astringent)	<i>Tikta</i>	<i>Tikta</i> , <i>Madhura</i> (Sweet)	<i>Tikta</i> , <i>Kashaya</i>

**Table 3: Analytical Results:**

Tests	A	B	C	D
Loss on drying %	08.58	08.70	08.63	09.12
Total ash %	04.16	12.62	05.26	07.18
Acid insoluble ash %	00.68	01.24	00.70	00.96
Water soluble extractives %	37.23	42.16	29.77	47.24
Alcohol soluble extractives %	23.90	26.40	20.72	32.63

**Graph 1 – Comparison of analysis of Shodhita Guggulu:**



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