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), Erandamula Kwatha (Decoction of Erandamula) etc. Thus, Guggulu Shodhana done by using different media may have different physio-chemical cha-
racteristics 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°C to 78°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°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:

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

Table 2: Ornganoleptic observations:

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

Table 3: Analytical Results:

<table>
<thead>
<tr>
<th>Tests</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss on drying %</td>
<td>08.58</td>
<td>08.70</td>
<td>08.63</td>
<td>09.12</td>
</tr>
<tr>
<td>Total ash %</td>
<td>04.16</td>
<td>12.62</td>
<td>05.26</td>
<td>07.18</td>
</tr>
<tr>
<td>Acid insoluble ash %</td>
<td>00.68</td>
<td>01.24</td>
<td>00.70</td>
<td>00.96</td>
</tr>
<tr>
<td>Water soluble extractives %</td>
<td>37.23</td>
<td>42.16</td>
<td>29.77</td>
<td>47.24</td>
</tr>
<tr>
<td>Alcohol soluble extractives %</td>
<td>23.90</td>
<td>26.40</td>
<td>20.72</td>
<td>32.63</td>
</tr>
</tbody>
</table>
REFERENCES


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