



**ORIGINAL RESEARCH PAPER**

**Ayurveda**

**PHARMACEUTICO - ANALYSIS OF GUGGULU KALPANA CONSTITUTING EQUAL QUANTITY OF SNEHA DRAVYA**

**KEY WORDS:** Different dosage forms, Guggulu kalpana (Commifera mukul), types of Guggulu Paka namely- Somapaka, Analapaka and Bhanupaka.

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**ABSTRACT** Commiphera mukul i.e. Guggulu is having broad range of pharmacological action in human body. Guggulu is used as active ingredient having very good binding property in various herbal preparations. Guggulu kalpana has wide range of efficacy, but major problems of this preparation are maximum hardness and high disintegration time. Due to this, maximum times these drugs are facing challenge of solubility and absorption in the human gut. In Tryushanadi Guggulu 33.33% Sneha i.e. Go-ghrita (Cow's ghee) was used. This Sneha has decreased hardness and disintegration time of the preparation.

**INTRODUCTION:**

Ayurvedic formulations include different combinations of drugs. There are three categories of drugs used viz. (1) Herbal products, (2) Animal products and (3) Metals including minerals, gems and precious stones. In Ayurveda different dosage forms, which are the physical forms of a medication, intended for administration are explained. The different dosage forms can be prepared by the physician according to his *Yukti*, considering *sanyoga*, *vishlesha*, *kaal* and *samskara*. *Aacharya Sharangadhara* has described various chapters according to dosage forms. According to *Sharagadhara Gutika, Vati, Modaka, Vatika, Pindi, Guda, Varti* (tablets, bolus, pills, and suppositories) are synonyms of *Vati kalpana*. It is solid preparation which is prepared either by cooking the powder of a drug with jaggery, sugar or *Guggulu* or without cooking. Then macerating the powder with liquid like honey and *Guggulu* and then rolled into pill forms. *Guggulu kalpana* preparations described by *Bharat Bhaishajya Ratnakara* are of three types namely- *Somapaka, Analapaka* and *Bhanupaka*.

**AIM AND OBJECTIVES:**

**Aim:** To study pharmaceutico-analysis of "*Tryushanadi Guggulu*"

**Objectives:**

- 1) To prepare *Tryushanadi Guggulu* according to standard operating procedures (SOP) of *Guggulu kalpana*, with special reference from *Bhavaprakash*.
- 2) To study analytical properties of *Tryushanadi Guggu*

**Review Of Literature:** *Tryushanadi Guggulu* is explained only in *Bhavaprakasha* in 39<sup>th</sup> *adhyaya*. In this *adhyaya Tryushanadi Guggulu* is explained as a one of the drug of treatment for *Sthaulya* (Obesity).

**Drug Review:** *Tryushanadi Guggulu* is a poly-herbal formulation, which contains total 9 ingredients.

(Ref; *Bha. Pra. / Sthaulya Chi. Adhya. 39*)(Ref. *shloka 1*)

**Table No. 01: Raw Drugs Of Tryushanadi Guggulu**

Sr No.	Drug Name	Latin Name	Part Used	Proportion in Percentage
1	Shunthi	<i>Zingiber officinalis Roxb.</i>	Rhizome	4.76 %
2	Marich	<i>Piper nigrum Linn.</i>	Dried fruits	4.76 %
3	Pippali	<i>Piper longum Linn.</i>	Dried fruits	4.76 %
4	Chitraka	<i>Plumbago zeylanica Linn.</i>	Root	4.76 %
5	Mustaka	<i>Cyperus rotundus Linn.</i>	Rhizome	4.76 %

6	<i>Vidanga</i>	<i>Embelia ribes Burm.</i>	Dried fruits	4.76 %
7	<i>Vacha</i>	<i>Acorus calamus Linn.</i>	Rhizome	4.76 %
8	<i>Shuddha Guggulu</i>	<i>Commiphera mukul Engl.</i>	Gum/ Resin	33.33 %
9	<i>Go-ghrita</i>	Cow's Ghee	Ghee	33.33 %

**Table No.02: Composition Of Indian Cow's Ghee**  
(Ref: H. Sharma, Ohio State Uni. Columbus, USA)

Constituents	Percentage (%)
1) Moisture	4.40
2) Fat	32.40
3) Protein	36.00
4) Lactose	12.00
5) Ash	05.20
6) Triglycerides	92-98
7) Diglycerides	0.25 - 1.40
8) Monoglycerides	0.16 - 0.38
9) Ketoacid glycerides	0.015 - 0.018
10) Glycerylestes	0.011 - 0.015
11) Phospholipids	0.20 - 1.00
12) Sterobes	0.22 - 0.41
13) Vitamin A	2500IU per 100 gms
14) Butyric acid	4.5 - 6.0
15) Caproic acid	1.0 - 1.36
16) Caprylic acid	0.9 - 1.00
17) Capric acid	1.5 - 1.80
18) Lauric acid	6.0 - 7.0
19) Myristic acid	21.0 - 23.0
20) Palmitic acid	19.0 - 19.5
21) Stearic acid	11.0 - 11.5
22) Arachidic acid	0.5 - 0.8
23) Oleic acid	27.0 - 27.5
24) Linolic acid	4.0 - 5.0

**Materials And Methods:**

**Materials:** Materials listed in table no. 1 were used to prepare *Tryushanadi Guggulu*.

**Methodology:**

**Drug Formulation:** The preparation of *Tryushanadi Guggulu* involved the following steps,

**A) Pre-Process :**

- 1) Preparation Of *Triphala Quath*
- 2) *Guggulu Shodhana*

**B) Main Process :**

- 1) Preparation of *Guggulu Paka*

- 2) Mixing and Grinding of contents
- 3) *Vati Nirmana*

**C) Post Process :**

- 1) Storage
- 2) Laboratory analysis

**Preparation Of Guggulu Paka:** *Guggulu paka* was done by *Agni paka* method. 840 gms of *shodhit Guggulu* was taken in stainless steel vessel. Sufficient amount of potable water was added to the *Guggulu* and heat was applied to obtain uniform liquid to semi liquid *Guggulu paka*. 840 gms of *Go-ghrita* was added to mixture. Ingredient *choorna dravyas* were sifted through sieves to obtain finest *choorna* and added to it and grinded well to get uniform mixture. After 3 hours uniform solid bolos was obtained.

**Laboratory Analysis:**

Laboratory analysis was done in Ayush Authorized Lab.

**Observations And Results:**

**Table 3: Organoleptic Description Of Tryushanadi Guggulu**

Sr. No.	Description	Results
1	Colour	Brownish black
2	Taste	Slightly sour
3	Odor	Pleasant

**Table 4: Physiochemical Parameters Of Tryushanadi Guggulu**

Sr. No.	Tests	Results
1	Loss on Drying	2.982 %
2	Ash Value	4.703 %
3	Acid insoluble Ash	2.021 %
4	Water soluble extractive	18.485 %
5	Alcohol soluble extractive	20.348 %
6	Hardness Test	4.2 kg/cm
7	Tablet Disintegration	1 Hour 20 mins
8	Uniformity of Weight	506 mg
9	Friability Test	0.36%

**DISCUSSION:**

- *Guggulu paka* alternate to pounding: On trial basis pounding of *Guggulu* done but due to requirement more man power and time, *Guggulu paka* was preferred.
- Organoleptic description of *Tryushanadi Guggulu* was as per classics. % Loss on drying, ash value, acid insoluble ash, water soluble extractive, alcohol soluble extractive and friability % were within limits prescribed by texts. 4.2 Kg/cm hardness and 1 hour 20 mins disintegration time of *vatis* were due to *Guggulu* as a main ingredient. Uniformity of weight was due to manually handmade *vatis*.

**Summary:-** There are three methods of *Guggulu paka* i.e. *Somapaka*, *Analapaka* and *Bhanupaka*. In present study *Tryushanadi Guggulu* was prepared following *agni paka* method. Analytical and clinical study of the prepared drug was done.

In analytical study % loss on drying, ash value, acid insoluble ash, water soluble extractive, alcohol soluble extractive and friability tests were done and those were within limits as per standards prescribed by API. Hardness and tablet disintegration time for *Guggulu* preparation are always at high level. As handmade tablets, uniformity in weight of *vati* was approximately close to 500mg (506mg).

**Conclusion:**

1. Tablet making of *Tryushanadi Guggulu* in tablet machine is impossible without drying of *Guggulu* in dryer.

2. *Tryushanadi Guggulu* prepared with *Guggulu Paka* and handmade *vati* was possible.
3. Due to equal quantity (i.e. 33.33%) of *sneha dravya Goghita*, hardness and disintegration time of tablets were reduced.

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