Comparison of Properties of Naveen, Puran and Suryatapi Guda (Jaggery) with Respect to Guru and Laghuguna- An Observational Study

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ABSTRACT

Ayurveda has explained the uses of *aushadha* (medicine) as well as *ahardraya* (food) in a precise manner; i.e. selection of drug, its form, duration of storage, etc. and advised using as per the condition. There are many examples of variation in properties as they become old which are mentioned in *samitas*. Accordingly, some drugs advised to collect and use fresh, for example, *guduchi*, *vasa* leaves whereas some are said to be stored for a specific period of time and then used when they become old (*puran*), for example; *Ghruta*, *shali*, etc. In *Puran Dhanya* there are changes observed called *Gunantaradhan* and become suitable for health, hence preferred to use. Likewise, *guda* is the very common sweetener used since ancient times in food as well as medicine. It is used for the preparation of various formulations (*kalpa*), fermentation (*Sandhana*), *Anupana*, binding agent and as par food concern it is rich in nutrition, minerals, energy. *Ayurveda* specifically advises using the old *guda* all where it is used but it becomes difficult to obtain old *Guda* every time in such a demanding era hence the solution is also stated to use *Suryatapiguda* state of old. The current study findings indicate old and *Suryatapiguda* is *laghu* (lighter) than that of the new *guda*.

Key Words: Naveen, Purana, Suryatapi, Laghu, Guru, Phanchabhutiksamghatan

INTRODUCTION

Jaggery is the common sweetener in almost all kitchens. *Ayurveda* has given much more importance since the ancient period. Ancient literature explained multiple uses of *guda* in terms of food as well as medicinal products.¹ Jaggery is a traditional unrefined non-centrifugal sugar mostly consumed in Asia, Africa as it has types of minerals and vitamins and it is considered as the healthiest sugar in the world since ancient times.¹ It is available in various types out of these here we concern about jaggery which is prepared from sugar cane and solid jaggery. Jaggery is available in three forms; solid, liquid, and granular.² Jaggery contains glucose and sucrose while white sugar contains glucose and fructose. Apart from these jaggery contains minerals like calcium, phosphorus, magnesium, potassium, iron, a trace of zinc, copper, and vitamins.³ In the current era very few people have the patience to get the desired or ideal quality of any drug material or it may be unavailable as a result they used which is available in

the market at that time. Acharyas may have this vision at that time hence mentioned about *abhavpratinidhidraya*. The reference in this study is taken from *Bhaishajya Ratnavali*. It is a *rasa granth* of a recent era that includes most of *kalpas* in *Samhita*. It is mentioned in *AbhavPratinidhi* chapter at 4th number. It is specifically mentioned in *Bhaishajya Ratnavaliabhavprakaran* that when *Puran Guda* is not available then keep *Naveen Guda* in high (Tivra) sunlight for 4 Yama (12 hrs) before use, it serves properties like *Puran Guda*. The term "*Suryatapi*" is not mentioned in the literature but it is derived to denote the said description given in one word. Considering the need of today's era, it may be the authentic solution to prepare *kalpa* of *Puran Guda*. Our acharyas have given qualities of *Naveen* and *purana Guda* as *guru*, *abhishyadi*, *ahitkara*, etc., and *Laghu*, *anabhishyandi*, *hitkara*, respectively. These properties themselves denote specific use either in medicine or food. The current study is based on simple *panchabhutikshabdadi* observations to establish *guru* and *laghuguna* of *guda*.

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ISSN: 2231-2196 (Print)

ISSN: 0975-5241 (Online)

Received: 18.05.2020

Revised: 15.06.2020

Accepted: 05.07.2020

Published: 08.08.2020

Aim- comparing the properties of new, old, and *Suryatapiguda* with respect to *laghu-guruguna*.

Objectives

1. To explain the demarcation line of new, old, and *Suryatapiguda*.
2. To explain the properties of new, old, and *Suryatapiguda* with respect to *laghu-guruguna*.
3. To established the term "*Suryatapi*" for substitute of *Puranguda* mentioned in Bhaishajya Ratnavali.

Review of Literature

Guda

Guda is well known as one of the sweet products of sugar cane juice. Ayurved has given a detailed description of *Guda* regarding its preparation, forms, types, and properties. All most all Samhita, Nighantus have described about *Guda* in detail. It is used as aushadhi, anupana, ahara, and sandhan-dravya.

Charaka has given guna of *Guda* i.e. Krimi-Majja-shy-onit-Meda-Mam avaradhak, in Sutrasthana, Annapanavi-dhiadhyaya. Final prepared shudhha *Guda* is alpadoshkar. ⁴Charaksamhita mentioned various kalpa in Chikitsasthana for chikitsa where *Guda* is one of the ingredients e.g. *Guda Madya* (in Udavart), *Guda Sharbat (Panak)* (in Talusosh, Madyajanya Trishna, Annaj Trishna), Asava-Arishta (Abhayaristha, Dantyaristha, Phalaristha, etc.), content and binding agent (e.g. Shyamadi Vrti, Pinyaka Varti), anupana (Pippalyadi Ghrut), lepa (local application)-(Guda+Pippali+ChitrakadilepaandGuda+Arkashrit+SnuhiKsheer-Pralep in Arsha), after Panchakarma procedure (Gudayuktadughapana- after manshiladi Dhumpana and Prapoundrikadi Dhum-papana), although Charaka did not mention about the use of puran *guda* but there are some kalpas given in chikitsasthana which gives the specific reference of *Purana Guda* (e.g. Dusparsadileha in vatajkasa, Haritaki Leha, in *Swasa, Kasa, Drakshadi Leha-kasa*) particularly.⁵

Sushruta has mentioned about *Guda* and its properties in sutrasthanaadhyaya 45, Dravdravyavidhyaninya, specifically given pthyaapathya with ikshuvikara, Virudhanna (1. Kakmachi & *Guda*, 2. Varahamamsa + *Guda*) (*Su.Su.20/13*), specifically advised to use *puranguda* (*Su.Su.36/7*). *Guda* is to be used in virechana in various conditions (*Su.Su.44/7, 11*). He mentioned kalpas for treating various disease and disease condition like *vatrakta, vrana, dadru, Udara, Gulma, Vidradhi, and Kustha*.⁶

Vagbhat mentioned *guda* in Sutrasthana, dravdravyavdhyniya, shlok 48, 49 (AH.Su 5/48, 49). *Navven Guda* is kapha-karak and creates agnimandya while *PuranGuda* is Hridya, Pathya.⁷

Asthangsangrahkara mentioned *Guda* in Sutrasthana, dravdravyavdhyniya, shlok 87 (As.Su 6/87). He explained

the same properties as in Astangahridaya.⁸

Sharangdhar has given more detailed information about matra (proportion) of *Guda* in Panchavidh Kasaykalpana (S.P.Kh.2/6). *Guda* is used in various diseased conditions as kalpa form or as anupana. There are several kalpa like Hemagarbhapottali rasa, Shital Jwaradi Rasa, Pathyadikwatha, Shadanga Kwatha, and used in many formulations, especially in asava- aristhakalpana and many more.⁹

Yogaratanakara is well known among kaychikitsa treaties for its easy and systematic arrangement. It explained *Guda* in purvardha. *Guda* is Guru, Madhur, Ksharayukta, Ushna, Kapha-vatanashak, ahita in Pitta and Rakta vitiation.¹⁰ Yogaratanakara gives various kalpa where *Guda* is used as content, prakshep, anupana, etc.¹¹

Chakradutta is mainly focused on chikitsa part and mention various preparation for treating diseases. He has mentioned several kalpas of *Guda* useful in various diseases like *Vataj Jwar, Pitta VatajJwara, Visam Jwara, Nakhasudhhi, Uru:stambha, Amvata, Pittaj Soola, Shoola, Parinam Shoola, Vibandha, Udavarta, Gulma, Vatgulma, Rechan, Mutrakrichha*, and in *Ritu Haritaki*.¹²

Bhaishajya Ratnavali is a rasa granth of a recent era that includes most of kalpas in Samhita. It mentioned Abhav Pratinidhi chapter at forth number, includes a list of 74 abhavdravyas. Bhaishjyarratnavali given abhavdravya of *Naveen Gudaas* mentioned in the introduction. Considering the need of today's era, it may be the solution to prepare authenticates kalpa of *Puraran Guda*.¹³

B) Nighantu:

After the Samhita period, several Nighantus were composed of different scholars giving details of the drugs of vegetable origin. Nighantus are known for Synonyms, details about drug mentioned in Samhita are compiled here. Although *Guda* is very common among all treaties, all Nighantu has not mentioned it. Very few Nighantu mentioned about *Guda* in detail. The description about *Guda* in various Nighantu is summarising as follows;

He has mentioned properties of *Puran Guda* like Pittaghna, Vatahar, ruchikara, Tridosahara, Jwarahara, Santapshanti-prada, Vinmutrashodhak, Agnijanak, Snigdha, Pandu-Pramehantaka, Laghu, Shramahara, Pathya. Narhari also mentioned paryaya (Synonyms) to *Guda* asIkshusara, Madhura, Rasapakaja, Shishupriya, Rasaj, Aruna, Sitadi denoting its significance.¹⁴

Bhavamishra mentioned *NaveenGuda* properties as Vrushya, Guru, Snigdha, Vatanashak, Mutrashodhan, Na-ati-pittakara, Medakara, Kaphakara, Krimikara, Balakara, Swasakara and *PuranGuda* is Laghu, Pathya, Anbhishandi, Agnijanaka, Pusthikruta, Pittaghna, Madhur, Vrushya, Vataghna, Rak-taprasadaka. Bhavprakash has mentioned specific guna

with particular anupan like Guda with Ardraka- quick reduces the enhanced kapha, with Haritaki it acts on Pitta and when used with Sunthi it acts as Vatahara.¹⁵

In Kaiyadeva Nighantu, *Guda* is placed in Aushadhi Varga and he has given guna of *Naveen Guda* are Madhur, Ksharyukta, saraka, Vapittavardhak, Agnideepaka, Snigdha, Rakta-Mutrasanshodhana, Medakara, Mamsakara, Krimikara, Majjarakara, Raktakara, Balavardhak, Shukrakara and *Purana Guda* is Madhur, Pathya, Ruchikara, Anbhishandi, Agnidipaka, and laghu. Kaiyadeva has given 1st time the specific duration of *Naveen*, *Puran*, and *Prapurana Guda* i.e. the particular kala when it should be called *Naveen*, *Puran*, or *Prapurana*. Kaiyadeva also gave that in the preparation of asava- aristha *Prapurana Guda* should be used as it bears above mention properties. He also stated that *Guda* older than four years old is of no use for medicine and consumption as develop amlata, krimikaraguna, and become veeryahina.¹⁶

Mahendra Bhougika in Dhanvantari Nighantu *Guda* is mentioned in Karviradivarga and properties are Madhur, Guru, Kshariya, Ushna, Kapha-Vatahar, Ahit in Rakta-Pitta dusti while JirnaGuda is Rasayana, Balavardhak, Shukravardhak. Dhanvantari Nighantu also mentioned synonyms as Ikshusara, Madhura, and Rasapakaja.¹⁷

Madanpala Nighantu-Kshariya, Guru, Swadu, Vapittakar, agnikrita, Sara, Balya, Krimijanan, Raktashodhan, Shleshmavardhan, are the properties of *Naveen Guda* while Hridya, laghu, Nabhisandi, Agnisandipana, Pustikara are the properties of *Purana Guda*.¹⁸

DravyagunaSangraha-*Guda* is Vrushya, Guru, Snigdha, Sakshara, Mutrashodhan, Na-atipittahara, Medakapha-hara and *Purana Guda* is Pathya and having more Guna.¹⁹

Madhava Dravyaguna Nighantu-mentioned properties like Na-ati-pittahara, Meda-Kapha-Krumikara. He is also given guna of *PuranGuda* as Pittaghna, Madhur, Snigdha, Vatahara, Asruk-prsadana, Pthya, etc.²⁰

Rajvallabha Nighantu-Guda is Guru,Vrushya, Snigdha, Vataghna, Mutrashodhan, Na-atipittakara, Meda-Krimi-Kapha-Balaprada (Increases all these things), while *Purana Guda* is Vatahara, Asrukprasadana, Pittaghna, Madhura, Snigdha, Pathya.²¹

Traditional method of preparations

Guda is the end product of ikshu (Sugarcane) Swarasa(Juice) after samskara of agni. Generally, sugar cane juice has extracted out and it is collected in a big container that is based in a big traditional heating chamber (Furness) and allow to controlled heat and boiling. There are some impurities that come out in the form of the dirty fen. For the purpose of cleaning and removing impurities Lime water and Lady's finger plant extract been used. After appropriate pakalkshuswarasa become thick (more viscose) then it is collected

in the chamber or specifically sized container and allow to cool. It gets solidified or Crystalline, light brown color material term as *Guda* (Jaggery).(Plate no. 1&2)

Review of Laghu-Guru Guna

Guna is defined as the characteristics by which people are attracted to a particular substance. *Guna* in the present study shall be considered as physical property since the constituent of *dravya* i.e. *Rasa*, *Virya*, *Vipaka*, and *Prabhava* mainly depends upon their *panchabhautikatva* and following modern science, it will resemble the chemical property.²² Charaka defines *guna* as the characteristics which will remain in a *dravya* with an inherent relationship. *Guruvadiguna* is termed as the *Sariraka Guna* as they denote common properties of *dhatu* and *dravya* (drug).²³

Guru guna act as vatahara and kaphavardhak, nourishes dhatus (Brimhana), increases malas, and possesses pharmacological actions like BalyaTarpana, Triptijanak, Virechan, Vrishya.²⁴ Guru guna consists of Prithvi and Jalabhuta and Laghuguna having prominent Vayu and Agni bhutas.²⁵ Laghuguna results in laghuta (lightness). It acts as kaphahara and vatavardhaka. It reduces mala, pathya, shighrapaki and Vaman, Lekhana, Pachana are the pharmacological actions exerted by Laghuguna.²⁶

MATERIAL & METHOD

Part A

Jaggery samples were collected from the farmers (manufacturer) making jaggery from the sugar cane cultivated by organic farming.

1. Three such Manufactures were selected viz; A. Yelakeli, Dist-Wardha, B. Tiwasa, Dist.-Yavatmal, C. Indurkha, Dist- Bhandara.
2. Two different samples of two different batches by each of them were collected in the month of January 2017 (i.e. Total 3X2 =6 samples were collected.)
3. All six samples were stored in an air-tight container.

METHODS

Part B

All these samples were further divided into three parts for study as follows;

- 1) First sample-Fresh sample (*Naveen Guda*); labelled as (N).
- 2) The second sample was placed in sunlight for 12 hours (i.e. 4 hrs. in a day from 12 pm to 4 pm for 3 days) (*SuryatapiGuda*); labeled as (S).
- 3) The third sample was kept in a closed container for a year (*Purana Guda*); labeled as (P).

Table 4.2: Sampling of Material

Samples →	Wardha(A)						Yavatmal(B)						Bhandara(C)					
Batches →	A1			A2			B1			B2			C1			C2		
Categories →	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S

Part C

Naveen Guda of all samples was studied for organoleptic characteristics (Rupa, Rasa, Gandha, Shabda, and Sparsha) first then *Suryatapi Guda* and after one year *Puran Guda* samples were studied.

Observation and Results-

On studying all new samples of *guda*, it is observed that Rasa of each sample was Madhur, Gandha (Odour)- Pleasant (Madhugandhi), Shabda- Not specific (Soft), Sparsha-Smooth, Rupa (colour) brown.

Puran Guda is observed having Rasa- Madhur, Tikta, Gandha- Pleasant, Shabda- Bhangura (Easily breakable), Sparsha-Smooth, Rupa(color)- Brown (darker than new guda), Gandha- (Madhugandhi).

Suryatapi Guda bears Rasa-Madhur, Tiktatam, Gandha-Pleasant, Shabda- Bhangura-Cut, Sparsha (Khara), Rupa (colour) Most dark brown.

titkatva of guna. Guru guna has a predominance of Prithvi and Jalamahabhuta; whereas Laghuguna has Vayu, Agni, and Akash mahabhuta. As per the general behavior of the material color of guda has changed, *Naveen Guda* was brown it turns to dark brown when became *Puran* (Kala samskara) whereas color of *SuryatapiGuda* was observed more dark brown than Naveen and Purana (atap Samskara). Odour of *Naveen*, *Puran*, and *Suryatapi Guda* were agreeable. *Naveen Guda* was soft in touch, *Puran Guda* has become hard, brittle, and easy to break whereas *Suryatapi Guda* was crystalline hard. Similarly, concerning changes in rasa (taste) from Naveen to *Puran Guda* there were very slight changes observed and not to be remarkable. But in the case of *Suryatapi Guda* it was very prominent acrid tending towards bitterness. The changes observed in taste from madhur to madhur-tikta, indicating the changes in panchabhauticsanghatana of *Guda* as prithi-jala to vayu-akash. The changes occurred due to Agni and Kala for *Suryatapi* and *Purana Guda* respectively. These are responsible for converting Guru to Laghuguna of *Guda*. Few of the related articles to ayurvedic medications are available.

DISCUSSION

Acharyas have stated the use of some drugs in specific forms as they might know some atypical properties will be originated in the drug which is more useful hence Shushruta also mentioned that madhu, ghrita, *Guda*, pippali, Vidanga are to be used *Puran*. We all know that grains advised to use when it became *laghu* (light). Here according to Kaiyadeva Naveen, *Purana guda* has taken and *Suryatapi* is taken as per mentioned Bhaishajyaratnavali. All opinions are about changes in *guna* after *samskara* like kala, atap, etc. which also applicable for guna. Charaka has mentioned panchbhu-

CONCLUSION

It can be clearly said that Guru guna of Naveen guda is changed to laghu when it became *Purana* or make it *Suryatapi* as alleged in Bhaishajyaratnavali.

Acknowledgement: authors acknowledge the immense help received from Datta Meghe Ayurvedic Medical College Hospital & Research Center, Wanadongri, Nagpur for conducting this study.

Conflict of interest: None

Table 1: Panchabhautik Parikshan of all Samples of Guda

	Manufacturer																	
	A						B						C					
	Batch 1			Batch 2			Batch 1			Batch 2			Batch 1			Batch 2		
	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S
Shabda (Sound)	Sf	Bh	Ct	Sf	Bh	Ct	Sf	Bh	Ct	Sf	Bh	Ct	Sf	Bh	Ct	Sf	Bh	Ct
Shparsha (Touch)	S	H	HCr	S	H	HCr	S	H	HCr	S	H	HCr	S	S	Cr	S	S	Cr
Rupa (color)	B	DB	DB+	B	DB	DB+	B	DB	DB+	B	DB	DB+	B	DB	DB+	B	DB	DB+

Table 1: (Continued)

	Manufacturer																	
	A						B						C					
	Batch 1			Batch 2			Batch 1			Batch 2			Batch 1			Batch 2		
	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S	N	P	S
Rasa (Taste)	M	MT	MT++	M	MT	MT++	M	MT	MT+	M	MT	MT+	M	MT	MT+	M	MT	MT+
Gandha (Odour)	P	P	CP	P	P	CP	P	P	CP	P	P	CP	P	P	CP	P	P	CP

N=Naveen, P=Purana, S=Suryatapi; Shabda- Sf- Soft, Bh-Bhangur, Ct- Cut; Sparsha- S-Smoth, H- Hard, HCr -Hard and Crystal-line, Cr.-Crystalline; Rupa- B- Brown, DB- Dark Brown, DB+- Most Dark Brown. Rasa-M-Madhur, MT-Madhur-Tikta, MT+++Madhur-Tiktatama; Gandha- P-Pleasant, CP- Pleasant Coffee/chocolate like

Cane juice preparation 1

Cane juice preparation 2

Pouring of juice in Kadhai

Agni Samskara

Terminal stage of Paka

Paka ready to pour in Chamber

Plate 1: Stage of preparation of guda

Pouring of Paka in Chamber 1

Pouring of Paka in Chamber 2

Cooling of Paka

Uniform semisolid Guda ready to give desired size

Plate 2: Stages of preparation procedure of Guda

Sample A-Naveen

Sample A- Puran

Sample A- Suryatapi

Sample B-Naveen

Sample B- Puran

Sample B- Suryatapi

Sample C-Naveen

Sample C- Puran

Sample C- Suryatapi

Plate 3: Naveen, Puran and Suryatapi Guda of all Samples

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