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A Review on Kukkutanda Twak Bhasma

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ABSTRACT

We very well-known and frequently used food ingredient is *kukkutanda* (Hen's egg shell). In the 9 falls under *Sudha Varga* and contains a calcium component. Early manuscripts referred to calcium-containing medications like *Sudha, Kurmaprishta, Varatika*, etc. as *Shukla varga*. The phrase *Sudha Varga* is frequently used in contemporary publications, particularly in works from the 19th and 20th centuries, to describe the addition of calcium-containing medications. A much more absorbable organic calcium source than inorganic forms is *Kukkutanda Twak*. Details on its composition, usage, purifying (*Shodhana*), incineration (*Marana*), and other aspects are provided in this article. This artical explains and discusses the usage, composition, *Shodhana* (purification), *Marana* (incineration), dose, *anupana* (adjuvant), and indications of *Kukkutanda Twak Bhasma*.

INTRODUCTION

The popular Indian system of medicine known as *Ayurveda* has been used extensively for around 4,000 years. *Rasa shastra*, also referred to as ancient Indian alchemy, is a branch of medicine that deals with a variety of issues, including the identification, incineration, purification, and collection of metals and minerals as well as a thorough understanding of their actions, properties, dosages, and medicinal preparation. *Rasaushadhis* (herbo-mineral formulations) are a medication created using this procedure. These metals and minerals should be treated using a variety of pharmacological techniques such as *Shodhana*(purification *)*, *Marana* (incineration), etc. because administering them in their raw state can have extremely harmful effects on the body. *Bhasmas* (materials burned to ash) are utilized extensively. It is an extremely fine powder-like material that has been calcined or burnt. It is produced when metals are continually burned in fire, and the residue also known as ash is regarded as *bhasma*. Due to their extremely small particle size (micro or nano) and targeted action, *bhasmas* are medically more potent and are only utilized in small amounts. The *varga* known as *Uprasa, Sudhavarga,Vish-Upvisha varga, Maharasa, Sadharana Rasa, Dhatu-Updhatu varga*, etc., are only a few of the many minerals that the *acharyas* very properly classified. The minerals *Sudha, Shankha* (conch shell), *Shukti* (pearl oyster), *Khatika* (chalk) and others that are particularly calcium-rich fall under the purview of *Sudha varga*. *Kukkutanda twak* (egg shell), which is primarily composed of calcium compounds, is also a part of *Sudha varga*. All of *Sudha Varga's* ingredients are derived from animals (*Jantavadravya*). "*Kukkuta+Andatwaka*" makes up the two words that make up the term "*Kukkutanda Twaka*." *Andatwaka* refers to the shell of the hen's egg, while *Kukkuta* means "Hen." Typically, it is prevalent in birds because they are primarily raised for their meat and eggs. The *twak'* (outer shell) of a *Kukkutanda*, or hen's egg, is utilized for a variety of therapeutic and non-therapeutic purposes. Due to their intelligence, our ancestors' *Rasashashtris* created a delectable type of *Kukkutand twak* that is safe for the body after discovering the excellent qualities and traits of egg shells. The internal usage of *Kukkutanda twaka bhasma* was first stated in *Siddha Bheshaja Manimala* in the treatment of *Upadansha roga*. *Kukkutanda twak* is already referenced in a number of *granthas* of *Samhita kala* and *Sangraha kala*. A very significant source of calcium, *Kukkutanda Twak Bhasma* also contains some other minerals in minute amounts.

LITERARY VIEW

Birds have been extensively utilized by man for a variety of reasons since ancient times and for all of time[1]. For a very typical use case during the Pre-Vedic era, namely the meat and eggs they consumed, they used it. The *Samhita Kala* the attributes of *Kukkutanda mamsa* are detailed in *Charaka Samhita's Annapanavidhi Adhyaya sutra sthana*. [2a] The ingredient *Kukkutanda twak* is utilized in the preparation of *sukhavarti* and *dristiprada varti* in *chikitsa sthana's trimarmiya chikitsa adhyaya*.[2b] The word "*Kukkutandaka*" is mentioned in an excerpt from the *Sushruta Samhita* in the *Sutra Sthana, Annapanavidhi adhyaya*.[3] The *Kukkuta* and *Vishkirya varga* are both thoroughly explained in the same chapter.[4]In Uttar Sthana *Raktabhisyanda pratishedha adhyaya* [5] *kriyakalpa adhyaya*, too .[6] The *Kukkutanda kapala* is also reused for making *arjuna nashaka lekhyanjana, gutikanjana*, and *badrodayanjana*. In the extracts of *Kukkutanda twak bhasm ,Uttara sthana Sandhisitasita roga pratishedha adha yaya* has been mentioned as an ingriedient. [7]*Bhela Samhita* There is no mention of *Kukkutanda twak* or any passages that contain it. There isn't really any mention of *Kukkutanda twak*.

There are allusions to and instructions of how to use *Kukkutanda twak bhasma* in *grahani roga* in *Chakradatta* [8]There are references and explanations of using *Kukkutanda twak bhasma* in *grahni roga*.[9] *Sangraha Kala Samhita Sharangadhara Kukkutanda Twak* is mentioned in the *Uttara Tantra*, *Netra Prasadana Kalpana*. According to reports, it is extremely effective in the conditions *shuklarma* and *netrapushpa*. [10] *Bhavaprakasha Vishkira Varga* is defined by *Mishraka Prakarana*, who also mentions *Kukkutanda's* replacements. [11] After the development of *Rasashastra*, references to *Shodhana*, *Marana*, *Matra*, *anupana*, and *Amayika prayoga* may be found in *Rasagranthas*. Beginning in the eighth century, there is the *Rasashastra* era. They are as follows: *Bharata Bhaisajya Ratnakara* references to *Kukkutanda Twak* can be found in different *kalpas* from volumes II, III, and IV. It imparts important and shared knowledge about these *kalpas*. [12] *Bhaisajiya Ratnavali* According to *anjana*, *Kukkutanda twak* is legitimately considered a *pranija dravya*, and its use is utilized to treat eye diseases. [13] *Ayurveda sara sangrha* in *Shodhana* and *Marana prakarana*. [14] A thorough analysis of *Kukkutanda twak bhasma's* w*matra*, *anupana*, and advantages is given.

Composition

Kukkutanda Twak contains 5% Calcium phosphate, 95% Calcium carbonate and small amounts of Magnesium carbonate, proteins, etc.[15] Use of Calcium salts containing Calcium in various forms may be useful to avoid or to fix Calcium deficiencies, to treat osteoporosis, as an antacid, as a Phosphate binder or for acute treatment of Tetanus, Lead colic, etc.[16]

Usage

Kukkutanda twak Bhasma (KTB) is discovered as very effective in some of the conditions such as *Shweta pradara* (Leucorrhoea), *Prameha* (Diabetes), *Vatavikara* (diseases because of vitiation of *vata*), etc.[17] It is found very beneficial in improving bone density, because it is a very brilliant source of calcium and that is one of the reasons why it is used in Arthritis, Osteoporosis,Bone fracture etc. There are no major side effects mentioned with the normal use of egg shell calcium (KTB). Hence it can also be considered that it is safe for long-term and regular use.[18] But scientifically speaking the validation of KTB found is very minimal. Effective use of KTB is also beneficial in appropriate utilization of the eggshells which are otherwise disposed as a waste. *Shodhana* (Process of Purification) There are four main methods of KT *Shodhana* which can be found and are also listed in the table below. *Nimajjana* is the most well-known method of *Shodhana* but the kind of media used and amount of time of *Nimajjana* may vary according various *acharyas*.

Table 1: *Shodhana*.

Reference	Process	Time	Media Use
Ayurveda Sara Sangraha[19]	*Nimajjana*(Soaking)		*Ushnodaka* (warm water)
Vriddha Vaidya Parampara[20]	*Nimajjana*(Soaking)	24 hours	*Takra* (Buttermilk)
Siddha Bheshaja Sangraha[34]	*Nimajjana*(Soaking)	1day/24 hours	*Ushnodaka* (warm water)
Rasa Tantra Sara Siddha Prayoga Sangraha[21]	*Nimajjana*(Soaking)	4-6 days	*Saindhava* + *Navasadara* + *Udaka* (water mixed with Rock salt and Potash Alum)

Bhavana

A well-known technique called *Bhavana*, often referred to as *Samskara*, can enhance the medicinal characteristics of a drug by adjusting the proportions of its existing components and introducing new ones. It is a very important procedure which is performed before *Amrutikaran* and *Lohitikarana*, *Marana*, *Satvapatana*, *Shodhana* as well as during the preparation of various medicines. It increases the production of organometallic compounds and decreases the toxicity of chemicals. The *bhavana* method aids in reducing the size of the drug particles, boosting their ability to absorb into the environment. Fluids such as *swarasa*, *mutra*, *jala*, *dugdha*, *madhu*, *kwatha*, and others are used for *bhavana*. A well-known method known as *Bhavana*, also known as *Samskara*, can improve the medicinal properties of a medicine by changing the proportions of its current components and adding new ones. Before *Amrutikaran*, *Lohitikaran*, *Marana*, *Satvapatana*, *Shodhana*, as well as throughout the production of various medications, it is a very important practice. It boosts the formation of organometallic compounds and lessens chemical toxicity. The drug particles' ability to absorb into the environment is improved by the *bhavana* procedure, which helps to reduce the size of the drug particles. *Bhavana* is performed with a variety of fluids, including *swarasa*, *mutra*, *jala*, *dugdha*, *madhu*, and *kwatha*. [19-21]

***Marana* (Process of Incineration)**

Marana, commonly called *bhasmi karana*, is an indigenous mechanism of *rasa shastra*. *Marana* means "to kill," and it refers to the death of biotic substances, which results in the loss of their vitality and activity. The word "*Marana*" in *rasa shastra* means to the conversion of metals and minerals into *bhasma* form, which is a very powerful type of medicine that easily incorporates in the body and requires only a small dose to achieve desired efficacy.

Table 2: Showing Different methods of *kukkutanda twak bhasmikarana*. [22-27]

S. No.	Name of text	*Marana dravya*	*Bhavanadravya*	No. of puta's
1	*Siddha bheshaja manimala*		*Amla varga* – 3 *bhavana*	3 *Gajaputa*
2	*Ayurveda sara samgraha*		*Changeri swarasa*	2/3 *puta*
	Ayurveda sara samgraha	*Hingula* (4 *tola*)	*Changeri swarasa*	2/3 *puta*
3	*Rasa tantra sara avum siddha prayoga samgraha*– 1st	*Hingula* (1.5 *tola*)	*Changeri swarasa*- 2 *kumari swarasa* – 4	2/3 *puta*

4	*Rasa tantra sara avum siddha prayoga samgraha*– 2nd	*Hingula* (1/8 part)	*Nimbu swarasa* - 3	2/3 *puta*
5	*Bhasma vigyaniya*			
	Method-1	*Hingula*	*Kumari*/*nimbu swarasa*	2/3 *puta*
	Method-2		*Kumari*/*nimbu swarasa*	2/3 *puta*

Dose

1-4 *ratti* (125-500mg)

Anupana (Adjuvant)

Chyavanaprasha avaleha, *Dadima swarasa* (Juice of pomegranate fruit), *Madhu* (Honey), Sita (Sugar), *Ksheera* (Milk), *Amalaki swarasa* (Juice of amla), *Navaneeta* (Butter).

Indications [28]

Sukra nirbalata, *Mastishka roga* (disorders of brain), *Sweta pradara* (leucorrhoea), *Somaroga*, *Raktapitta* (bleeding disorder), *Swapna dosha*, *Bahu mutrata*, *prameha* (diabetes), *Rakta pradara*, *Mukra vikara*, *Hridya roga* (cardiac disorder), *Napumsakatva*.

DISCUSSION

In the vast field of *Ayurvedic* medicines, *Rasashastra* has made a substantial contribution. Many of the medications mentioned in the *Rasashastra* have both therapeutic and dietary benefits. A primary medication known as *Kukkutanda twak* is frequently utilized in many different forms, including *bhasma*. Under *Shukla Varga*, *Kukkutanda Twak* participated, and the division's produced *bhasma* will include white-colored medications. After that, it was given the name *Sudha varga* since the medicine that it incorporates and contains is high in calcium. The calcium in KT is in the form of calcium carbonate, which among the calcium salts has a particularly high percentage of elemental calcium. Since KT is not harmful by nature, the procedure utilized for *Shodhana* involves *Nimajjana* (soaking), which softens the medicine and removes physical impurities, aiding in the combustion process. However, other *drava dravyas*, such as *ushnodhaka*, *lavanodaka*, *saindhava-navasadarajala*, etc., are mentioned for the *Shodhana* process. Both the inner membranous layer and the exterior pollutants will be eliminated by this procedure. By means of the *Marana* process, *Shodhitha* KT is transformed into *bhasma* form. For *bhavana*, *changeri* or *gritakumari swarasa* are employed. These *bhavana* medicines' constituents will be consumed by the *Kukkutanda twak*, enhancing its medicinal effects. Due to the light weight of the *Kukkutanda*, only 2 to 4 *putas* are needed to convert it into the form of *bhasma*. Therefore, the number of *putas* indicated is 2 to 6.

CONCLUSION

Ayurveda pharmaceutics and the usage of medications of mineral, metallic, and animal origins are covered in detail in the procedural science known as *rasa shastra*. One such animal-derived medication that is used as a single *bhasma* and has a wide range of purposes is *Kukkutanda twak*. The purifying procedure is straightforward and involves soaking in lukewarm water, buttermilk, and water combined with rock salt and potash alum, among other liquid media. This technique will remove the undesirable qualities from the raw drug, and the method of soaking also softens the drug through the subsequent M*rana* process. Since the medication is not particularly potent, just 2 to 4 *putas* are required to achieve *bhasma*. A wide range of illnesses, including *Hridyroga* and *Raktapitta*, are thought to benefit from the *bhasma*. Because it's simple to manufacture the *bhasma* and the medicine is simple to obtain. The *bhasma* can be employed in a variety of illnesses when combined with the right adjuvant and according to studies.

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