

Utility of Kanji as Per Rasaratna Samuchchaya - An Extensive Review

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ABSTRACT

Sandhana Kalpana in Ayurveda proposes many alcoholic formulations. The medicinal values are extracted in a self-generated weak alcohol medium through fermentation. Kanji which is prepared by fermenting boiled masha dhanya with gruel of raktashali is given paramount importance. Kanji is a unique kind of formulation having vast utility. Rasaratna Samuchchaya authored by Rasavagbhata emphasizes usefulness of kanji in many folds. This article is an effort to compile vast literature on kanji in Rasaratna Samuchchaya, analyse and present it systematically. The utility of kanji with reference to parada, maharasa, uparasa, sadharana rasa, loha, ratna are discussed.

Key Words: Kanji, Kanjika, Rasaratna Samuchchaya.

INTRODUCTION

Ayurveda is a life science which aims to maintain the health of a healthy individual and cure the diseases. It offers both preventive and curative methods to attain this aim. Kanji is a unique Ayurvedic fermentative preparation which comes under Sandhana kalpana. Sandhana kalpana (fermentative products) are divided into madya kalpas (alcoholic preparations) and sukta kalpana (acidic preparations). Asava and arishta comes under madya kalpana whereas preparation like souviraka, kanji, etc. comes under sukta kalpana.

Kanji is usually prepared by fermenting incompletely boiled masha dhanya with gruel of rakta shali and is routinely used for various purposes. Kanji prepared out of Dhanya is said to be jeeveniya, daha nashana, vata-kapha hara, trushnahara etc. when used internally.^[1] But the kanji explained in the paribhasa prakarana of text Rasayanasa is said to be for Dhatu shodhana (purification of metals)

and other mercurial processing.^[2] Synonyms of kanji are aranala, souvira, kulmasha, abhishuta, avantisoma, dhanyamla, kunjala, kanjika.^[3] As Rasa Ratna Samuchchaya is most widely used book in Rasashastra, therefore in this article an attempt has been made to highlights the utility of kanji in various processing according to Rasaratna Samuchchaya.

METHODS OF PREPRATION OF KANJI: -

1) According to Rasendra Chintamani ^[4].

Variety of Tusharahita dhanya (dehusked grain) is made into coarse powder form and filled in one mud pot. Water is added to this pot and left undisturbed till becomes sour. Later bark and roots of nagaramusta, bhrami, gorakmundi, vishnukranta, punarnava, meenakshi, sarpakshi, sahadevi, shatavari, triphala, girikarni, hamsapadi, chitraka are made in powder form and added to the mud pot. This is known as Dhanyamala. It is

used for Parada swedana processes.

2) According to Rasayanasara [2] - The Kanji explained in the Paribhasha prakarana of the text Rasayanasara, is said to be specific for Dhatu shodhana (purification of metals) and other Mercurial processing.

Table 1, showing the ingredients and quantity for kanji preparation.

Sl.no.	Ingredients	Quantity
01	Rajika	1 seth (ser)
02	Saindhava lavana	2 seth
03	Kulattha kwatha	4 seth
04	Odana (cooked rice)	2 seth
05	Haridra churna	½ seth
06	Vamsha patra	½ seth
07	Shunti	¼ seth
08	Sweta jeeraka	¼ seth
09	Hingu	½ seth
10	Masha pishta	½ seth

* Approximately one ser is equal to- 960gm.

Ingredients should be pounded and filtered through cloth. A mud pot smeared with Sarshapa taila (mustard oil) in its inner side should be taken and all the ingredients are slowly put inside the pot. Then 20 ser water is added to it and mixed thoroughly. Later masha chakrika are added at the end. The mouth of the pot to be sealed properly and left undisturbed for 7 days for fermentation. It usually gets completed in 4 days in summer season. Later the product is filtered through cloth and used for various mercurial processes.

Based on the reference of Rasayanasara, a study conducted at National Institute of Ayurveda, Jaipur about the method of preparation of Kanji with slight modification.^[5] Following method was adopted with ingredients as mentioned in Table 2

Table 2, showing the ingredients and quantity for kanji preparation

Sl. No.	Name	Quantity (gm)
01	Rajika (Brassica juncea Linn.)	240
02	Saindhava lavana (Rock salt)	480
03	Kulattha (Dolicus biflorus Linn.)	480
04	Odana (Cooked rice)	480
05	Haridra (Curcuma longa Linn)	120
06	Vamsha (Bambusa arundinaceae Willd)	120
07	Shunti (Zingiber officinale)	60
08	Jeera (Cumimum cyminum Linn.)	60
09	Hingu (Ferola northrax Linn)	5
10	Jala (water)	4800
11	Sarshapa taila (Brassica campestris Linn)	Q.S.
12	Masha (Phaseolus mungo Linn)	120

Method of preparation-

- Preparation of Kulatha Kwatha- 480 gm of Kulatha was taken in a wide mouthed container and added with 3840 ml of water (8times of Kulatha). It was kept on mandagni (mild fire) till it reduced to 960 ml (1/4th) and filtered and kept.
- Preparation of Odana- 250gm of Shashtika shali was taken in a vessel and by adding 1250ml of water (5 times) it is cooked on mild fire it gets reduced to 480gm.
- Hingu shodhana- 5gm of Hingu was fried in sufficient quantity (150 ml) of ghrita.
- Masha chakrika preparation- 120gm of Masha flour with little quantity of Saindhava lavana and sarshapa taila was taken in a vessel and paste was prepared from this. This paste was fried and chakrikas was made.
- All ingredients were finely powdered

Once all the ingredients were ready, the pre-treated pot (smeared with Sarshapa taila in its inner side) was taken and 4800ml of water was poured into it. Then 960ml of Kulattha kwatha was added followed by Odana 480gm. The fried Masha chakrikas was put along with fine powder all the ingredients and mixed well. The mouth of the pot was closed tightly and left undisturbed for proper fermentation.

The study also showed the following observations:

- Fermentation was completed on 24th day when the pH was 3.21.
- But it was kept for one more week (31st day) till pH becomes 2.91.
- The prepared kanji was golden yellow colour with pleasant odour and characteristic sour taste.
- The kanji when subjected to various preliminary analyses showed that the total solids in it were 19.26%, reducing sugars 2% and specific gravity was 1.039.
- The alcohol percentage was zero and even starch was absent. There was no fungus growth seen at any stage of fermentation.

Utility of kanji- The various utility of Kanji in different mercurial processing and Indian alchemy chemistry according to Rasa Ratna Samucchaya edited and translated by Acharya Siddhinandan Mishra (RRS)^[6] and by Prof. Dattatraya Anant Kulkarni (RRS*)^[7] is described below.

Rasavarga- These are eight Maharasa, viz, Abhraka (Mica), Vaikranta (Tourmaline),

Makshika (chalcopyrite), Vimala(Iron pyrite), Shilajatu (mineral pitch), Sasyaka (blue vitriol), Chapala(bismuth ore) and Rasaka (zinc ore).^[8] These eight drugs are very important in Ashtadasha Parada Samskara. Applicability of Kanji in various Rasavarga processings is shown in Table No 3

Table 3 showing the utility of Kanji in Rasavarga with Rasaratnasamucchaya reference

Sl. no	Rasa dravya	Purpose	Method	Reference
01	Abhraka (Mica)	Shodhana (Purification)	Abhraka patra is to be heated in intense fire and dipped in kanji for 7 times.	RRS 2/16
02	Abhraka	Dhanyabhraka (Intermediary process in incineration of Mica)	1-part Sudha abhraka and ½ or ¼ part shali dhanya (rice grain) should be mixed together and tied in a thick cloth to make a pottali which is to be immersed in kanji for 3 days. On 4 th day pottali should be loosened slightly and rubbed with hand. By this method abhraka escape out of pottali into the kanji in fine powder form which has to be filtered later.	RRS 2/18 RRS 8/33
03	Abhraka	Satvashodhana (purification of essence of Mica)	Abhraka satva is to be boiled with amla kanji, then placed in musha(crucible) along with Shodhaniya dravya kwatha ^[9] to give intense fire.	RRS 2/34
04	Abhraka	Satvamarana (incineration of essence of Mica)	Abhraka satva bolus after heating in fire is dipped in Kanji. Then it is to be pounded in iron kalwayantra and filtered through cloth. Then fine powder of Abhraka is fried with goghrita (3 times). Later it is to be grinded with amalakiphala swarasa or amalaka patra swarasa in khalwa yantra(3 times). After this 3 times bhavana(levigation) each with Punarnava swarasa, Vasaswarasa and Kanji. This is made into chakrika form and 10 gajaputa should be given. Again, ¼th part of Gandhaka is added in 1 part of abhraka satva to give bhavana with Kanji and subjected to 10 gajaputa.	RRS 2/43-47
05	Vaikranta (Tourmaline)	Shodhana	Swedana(boiling) in dolayantra with nimbu swarasa and amlakanji mixed with yavakshara, sarjikshara, tankanakshara and saindhava lavana for 3 days.	RRS 2/59
06	Shilajatu (Mineral pitch)	Shodhana	Shilajatu is washed with a solution of water(10part) +Triakshara (equal quantity of yavakshara, sarjikshara and tankana),with gomutra and with kanji.	RRS 2/107
07	Shilajatu	Shodhana	A big vessel filled half with equal quantity of Ksharodaka, kanji and Guggulu. Its mouth is tied with a cloth upon which Shilajatu pieces are kept and then it is covered with a sharava and sealed. Then the pot is heated under mild fire for 1 hour due to which shilajatu melts in the solution. Later shiljatu is filtered and washed with clean water.	RRS 2/109
08	Chapala (Bismuth ore)	Satvapatana (extraction of essence of Bismuth ore)	Powder of Chapala is grinded with Kanji, swarasa of Visha and Upavisha dravya. Bolus made is subjected to heat.	RRS 2/141
09	Kharpara (or Rasaka)(Zinc ore)	Shodhana	Rasaka heated in intense fire and dipped in either naramutra/takra/kanji for 7 times.	RRS 2/149
10	Kharpara	Satvapatana	Powder of Haridra, Triphala, Raal(sarjarasa), Saindhava, Grhidhuma, Tankana, Bhallataka (each half part) and Sudha Kharpara (one part) grinded in Kanji and Nimbuswarasa. This paste is applied on Vrintakamusha and dried. Musha is covered with sharava(mud saucer) and ignited with charcoal. When the flame turns to blue and white colour, musha is taken out carefully with the help of holder. Satva similar to vanga is collected.	RRS 2/151-153

Uparasa – This includes Gandhaka (Sulphur), Gairika(Red ochre), Kasisa (Green vitriol), Kankshi(Alum), Haratala (Orpiment), Manahshila (Realgar), Anjana and Kankushtha.^[10] These drugs are very

important in Rasashastra because without using these drugs, all the alchemical procedures are impossible. Usefulness of kanji in Uparasa varga processing is described in Table 4

Table 4, showing the Utility of Kanji in Uparasa

Sl.no.	Uparasa name	Purpose	Method	Reference
01	Kasisa (Green vitriol)	Satvapatana	Same as Sphatika satvapatana.	RRS 3/57
01	Sphatika (PotashAlum)	Shodhana	Sphatika is soaked in kanji for 3 days.	RRS 3/66
02	Sphatika	Satvapatana	Sphatika is grinded with kshara and amla varga dravya (kanji or chanakamla) – made into bolus form and kept in musha to give intense heat	RRS* 3/64-65
03	Haratala (Orpiment)	Shodhana	Small pieces of haratala+1/10 th part of Tankana(borax) – wash with nimbu swarasa and kanji – then it is tied in a four folded cloth and swedana in dolayantra with churmodaka and kanji as liquid media for 8 prahara.	RRS 3/75-76
04	Manashila (Realgar)	Shodhana	Swedana in dolayantra with with goat's urine for 1 prahara each- later washed with Kanji.	RRS 3/96
05	All uparasa drugs	Samanya rasa uparasa shodhana	Swarasa or kwatha of any one of the drug Suryavarta, Kadali, Bandhyakarkoti, Koshataki, Devadali, Shigru, Vajrakanda, Jalapippali, and Kakamachi is used for grinding Rasa and Uparasa drugs along with Kshara (yavakshara) and amla dravya (Nimbuswarasa or Kanji).	RRS* 3/118-119

Sadharana rasa: This group includes Kampillaka (Indian Kamala), Gauripashana (Arsenic oxide), Navasagara (Ammonium oxide), Kaparda (Cowrie), Agnijara (Ambergris), Girisindura (Red oxide of

mercury), Hingula (Cinnabar) & Mridarashringa (Litharge)^[11] drugs. Kanji utility in Sadharana rasa group is shown in Table 5

Table 5, showing the utility with reference to Sadharana rasa

Sl.no	Drug Name	Purpose	Method	Reference
01	Varatika	Shodhana	Swedana in Dolayantra with Kanji as liquid media for 1 yama (3hours).	RRS 3/137
02	Hingula	Shodhana	Bhavana with sheep's milk, amlavarga dravya (nimbu swarasa) or Kanji for 7 times. Later dried under the sun.	RRS* 3/143

Ratna: Ratna(gems stones) is of nine types viz, Manikya (ruby), Mukta (pearl), Pravala (coral), Tarkshya (emerald), Pushparga (topaz), Vajra (diamond), Nilama

(sapphire), Gomeda(zircon) and Vaidurya(cat's eye).^[12] Kanji used in different Ratna processing is given in Table 6

Table 6, showing the Kanji with reference to Ratna

Sl.no	Ratna Name	Purpose	Method	Reference
01	Manikya	Shodhana	Swedana in amlika rasa (kanji) for one prahara	RRS* 4/60-83
02	Pushparaga	Shodhana	Swedana in dolayantra in equal quantity of kulatha kwatha and kanji for 3 hours.	RRS 4/64
03	All ratna	Ratna druti	Ratna (any ratna whose druti needs to be prepared) is placed at the centre of kalka prepared out of Hingu, Panchalavana (saindhava lavana, samudra lavana, vida lavana, souvarchala lavana and romaka lavana), Trikshara, Amlavetasa, Chullikalavana (navasagara), Kumbhiphala (jayapala seeds), Jvalamukhi (bhallataka), Vamshalochana, Dravanti, Rudanti, Payasya, Chitramulaka, Snuhiksheera and Arkaksheera. Then the bolus is covered with Bhurjapatra and cloth tightly and subjected to Swedana in dolayantra with Amlavarga dravya and kanji for 3 days.	RRS 4/64-69
04	Vajra	Vajradravana	Vajra powder is kept in middle of kalka prepared from Vajravalli. It is tied tightly with Bhurjapatra and cloth. Later Swedana in dolayantra with amlavarga dravya and kanji for 7days	RRS* 4/72 (84)

Uparatna: These are known as semiprecious gems. There are different opinions regarding the numbers of uparatna. As per Rasatarangini,^[13] Uparatna is classified as Vaikranta (tourmaline), Suryakanta (sun stone), Chandrakanta

(moon stone), Nripopala (lapis lazuli), Perojaka (turquoise), Sphatika(quartz). Among these kanji is mainly used in Vaikranta druti(conversion of mineral into liquid state) as given in Table 7.

Table 7, showing the utility in Uparatna

Sl.no.	Uparatna	Purpose	Method	Reference
01.	Vaikranta	Vaikranta druti	Vaikranta churna is placed inside the kalka prepared of Ketaki swarsa, saindhava lavana, Swarnapushpi and Indragopa. Then Swedana in dolayantra with amlavarga and Kanji for 7 days.	RRS* 4/76
02.	Vaikranta	Ashta Loha or vajra dravana with vaikranta druti	Vaikranta druti is added with eight loha bhasma or with Vajra bhasma- tied with Bhurjapatra and cloth- swedana in amlavarga and Kanji for 7 days	RRS 4/77

Lohavarga: Loha means to extract the metals from their ores or to extract dosha from the body.^[14] Mainly metals and alloys are included in this group, so it is also known as Dhatu varga. Svarna (gold), Rajata (silver), Tamra(copper), Loha(iron),

Naga (lead), Vanga (tin), Pittala (brass), Kamsya (bell metal) and Vartalaucha comes under this group. Utility of kanji in various processings of Lohavarga is described in Table 8.

Table 8, showing the utility with reference to Loha.

Sl.no.	Name of Loha	Purpose	Method	Reference
01	All the lohas	Samanya shodhana of lohas	Thin sheets of ashuddha dhatu are to be heated in intense fire and dipped in each of the following liquid media consecutively for 7 times- tila taila, takra, gomutra, kanji and kulattha kwatha.	RRS 5/11
02	Tamra	Shodhana	Paste of Saindhava lavana and Nimbuswarasa are applied over the tamra patra. It is then heated and dipped in kanji for 8 times.	RRS 5/49
03	Loha	Marana	Paste of Shuddha Hingula and breast's milk is applied over the Loha patra. It is dried and subjected to gajaputa. Next day loha churna is taken out in a khalwa yantra added with 1/20 th part of Shuddh Hingula and bhavana is given with Triphala kwatha, jambira swarsa and kanji. Chakrikas are made and subjected to gajaputa. This procedure is repeated for 40 times with each time recording the weight of Loha churna.	RRS 5/110-112
04	Naga	Marana	Suddha naga is taken and melted in iron vessel. Then 1/4th part of Ashwath twak and Chincha twak bhasma are added gradually by stirring through iron ladle till naga converts into powder form. The collected ash of naga is washed with water 2-3 times and dried. Later equal quantity of Suddha Manashila is added to Nagachurma and levigation with Jambiriswarasa or kanji is done. Then it is subjected to kukkuta puta. After it cools down 1/20 th part of manashila is added and bhavana with Nimbu swarsa or Kanji is given for 3 hours to give kukkuta puta. This process is repeated for 60 times.	RRS 5/179-181
05	Pittala	Grahya lakshana	Ritika pittala on heating and quenching in kanji it turns into tamra(red) colour. Kakatundi pittala on heating and quenching in kanji it turns into Krishna (black) colour.	RRS 5/191-193
06	Kamsya	Marana	Bhavana of trikshara and panchalavana with nimbu swarsa or kanji for 7 times. Then this paste is applied over the suddha Kamsya patra and closed in sharava sampata which is to be subjected to gajaputa.	RRS* 5/209-210

Ankolabeeja tailapatana: Acharya vagbhata, author of Rasa Ratna Samuchchaya has also explained the extraction of oil from

Ankola seeds (Alangium Salvifolium linn.f) using Kanji as liquid media as described in Table 9

Table 9, Kanji in Ankola beej tailapatana.

Method 1	Indravaruni root powder (Citrullus colocynthis) is mixed in kanji later Ankola seed in fine powder form is added to it and kept under sun. Due to sunheat ankolabeeja taila will float over the kanji which collected with suitable method.	RRS 5/234
Method 2	Kalka of Indravaruni and Petkari leaves are by adding kanji. Ankolabeejamajja is pounded in khalwa yantra which is later kept in between the kalka made before and tied in thin cloth. This pottali is tied in a stand and kept under the sun. The taila is collected in a glass vessel.	RRS 5/235
Method 3	Ankolabeejamajja is finely powdered, grinded with kanji and left overnight. Next morning the kalka is taken in a pottali and swedana in kandukayantra for 2 hours is done. Then kalka is tied in a strong cloth and pressed with a wooden log. The drained out taila is collected in a glass vessel	RRS 5/237-239

Preparation of RasaLinga (Raseshwara): 1 part of gold leaf and 3 parts of mercury are to be levigated with sour juices for 3 hours. When this mixture gets solidified, an oval shaped like linga of Lord Shiva is made and this linga is kept inside lemon. This is then subjected to swedana in dolayantra

with kanji as liquid media for 1 day. Next day Raseshwara is taken out and washed with water and placed at the centre platform like arrangement of Rasa mandapa.^[15]

Worship of instruments: Vida, Kanji, Yantra, Lavana, Koshti, Musha, Vankanala,

Tusha, Vanyopala, Bhastrika, Khalwa yantra, Vessels, Divya aushadhis etc. should be worshipped at the entrance of Rasa mandapa.^[16]

Parada- In Rasashastra, Parada (mercury) has miraculous and mythical importance as the whole branch is named after Parada. Procedures which are being adopted to add or alter the qualities present in the drug is

called as samskara.^[17] Utility of kanji in the eight samskara of Parada (eight basic processing steps of mercury) (swedana, mardana, murchhana, utthapana, patana, bodhana, niyamana and deepana),^[18] in jalauka bandha (stable mercury) (one of the process where mercury is converted from liquid to solid state)^[19] and in preparation of Parada Bhasma (incineration of mercury) has been explained in the Table 10.

Table 10 showing utility of Kanji in Parada Samskara

Sl.no.	Sanskara	Procedure	Reference
01	Swedana (boiling in liquid media)	1 part of suddha parada is kept in a bolus made from 1/16 th part each of shunti, pippali, maricha, saindhava lavana, rajika, chitraka mula, ardraka and mulaka. It is then subjected to swedana in dolayantra with kanji as media for 3 days.	RRS 8/57 RRS 11/26
02	Maradana (trituration)	1 part of Swedita Parada and 1/16 th part of Grihadhuma, Ishtika churna, Godadhi, Guda, Saindhava lavana, Rajika are grinded with Kanji in khalwa yantra for 3 days.	RRS 8/58 RRS 11/27-30
03	Utthapana (regaining of original form of parada)	Murchchita Parada (Parada not in its original form) is placed in urdhwapatana yantra and subjected to heat. Urdhwapatita parada is collected and boiled in kanji.	RRS 8/61 RRS 11/33
04	Adhapatana I (Downward sublimation)	1 part parada and 1/16 th part Triphala, Shigru, Chitraka, Saindhavalavana, Rajika are taken grinded in a khalwa yantra with kanji as media. This paste is applied on the inner surface of upper pot and subjected to give heat in adhapatana yantra.	RRS 11/36
05	Adhapatana II	1 part of Parada and 1/16 th part each of Haridra, Ankolabeeja, Aragvada, Gritakumari, Amalaki, Haritaki, Vibhitaki, Chitrakamula, Tanduliya, Punamava mula, Hingu, Saindhava lavana, and Swarna makshika are take and made into paste form for adhapatana.	RRS 11/37-38
06	Tiryakpatana samskara (transverse sublimation)	Parada collected from above method is pounded with abhraka patra and kanji. Then it is kept in tiryak patina yantra for 3 hours. Later Parada collected is boiled with Kanji in dola yantra for 3 hours. Again Parada is made into pishti form with Dhanyabhraka and subjected in adhapatana yantra.	RRS 11/41-43
07	Niyamana-I (restraining by boiling in liquid media)	1 part of Parada and 1/16 th part of Karkoti, Sarpakshi, Vrichachikali, Saindhana lavana, Bhringaraja are taken, made into paste form and tied in a pottali. It is subjected to swedana with kanji in dolayantra for 3 days.	RRS 11/46
08	Niyamana-II	1 part of Parada and 1/16 th part of Marichachurna, Sphatika, Kasisa, Saindhava lavana, Rajika, Shigru twak, Tankana are taken made in paste form tied in pottali. It is subjected to swedana with Kanji in dola yantra for 3 days.	RRS 11/47
09	Dipana (appetisation by boiling in liquid media)	1 part of Parada and 1/16 th part each of Yavakshara, Sarjikshara, Tankana, Saindhava lavana, Kasisa, Sphatika, Chitraka, Shigru, Rajika, Pippali, Amlavetasa, Lakucha, Saindhava lavana, Maricha, Jambiri nimbu are taken, made in paste form. A big mud pot is taken filled with Kanji is taken and Abhraka patra along with above prepared kalka are added to it. Pot is sealed and left undisturbed.	RRS 8/65 RRS 11/48-49
10	Jalauka bandha	105gm of Parada should be taken and grinded 1 day each with Ankolavrikshtwak kwatha, Aragwadha vriksh twak kwata, Gritakumari swarasa. Bakuchi, Haridra, Kokilaksha, Apamarga and Dhatura are to be taken equal in quantity to that of Parada and made into powder form. All the drugs added to Parada and mardana to be done for 21 days with Kanji (prepared from 1/4 th Haridra churna by kwatha procedure). Then jalauka are to be prepared from this.	RRS 11/101-103
11	Parada bhasma	Equal quantity of Devadali and Vishnukranta panchanga are to be pounded with kanji and their juice needs to be extracted. Parada placed in sharava is kept over stove and this juice is poured carefully with continuous stirring. After some time mardita parada will turn into solid white form like lavana.	RRS 11/116-117

Valabhi yantra: In the context of Yantra adhyaya, Acharaya has described Valabhi yantra where kanji needs to be filled in the gap between the two iron vessel (one and one big) which are separated with 2-3 stones in between them. Handle of both the vessel

is tied together. Murchchita Parada is kept in small vessel and heated for 6 hours.^[20]

Utility of kanji in various useful formulations has been summarized in Table 11.

Table 11 showing utility of kanji in the formulations.

Sl.no	Yoga	Utility of kanji	Reference
01.	Lokanatha gutika	Kanji as bhavana media Kanji as swedana media Kanji as prakshalana media	RRS 12/81-82
02.	Arshohara yoga-1	Kusumbha patra cooked with kanji – internal use	RRS 15/81
03.	Devadalyadi lepa	Devadali with equal quantity of Saindhava lavana, grind with Kanji for lepa(external application)	RRS 15/82
04.	Durnaamhara lepa	Katutumbi beeja grinded with kanji and guda, use for lepa	RRS 15/87
05.	Vajradhara rasa	Kanji as anupana in sangrahani roga.	RRS 16/94-96
06.	Vaishawanara pottali rasa	Kanji is contraindicated.	RRS 16/111-116
07.	Haridra yoga	Haridra churna and Guda grinded with jala/Kanji for internal administration in mutrasharkara and mutrakricha roga.	RRS 17/26
08.	Tamra yoga	Swedana in dolayantra with kanji as liquid media.	RRS 17/31-32
09.	Udayabhaskara rasa	In case of agnimandya-Kanji and taila is indicated as anupana.	RRS 17/108-116
10.	Sarvamayahara rasa	Mardana with Kanji for 2 days.	RRS 18/17-24
11.	Kanchini prayoga	Anupana madya or Kanji in plihavridhi roga.	RRS 18/99
12.	Sadya soolahara yoga	Sauvarchalalavana churna with Kanji for internal administration to alleviate shula.	RRS 18/171
13.	Agnikumar rasa	If daha occurs due to this medicine, then internal administration of meghanada shaak moolaswarasa, sita, yashti,swetachandana, tankana with Kanji in sthoulya.	RRS 18/183-201
14.	Tamradhruti rasa	Anupana takra/Kanji in amlapitta.	RRS 18/208-217
15.	Vajrakshara	In tridosha agnimandhya and ajeerna, vajrakshara is given with Kanji in 2 nishka pramana(6gm).	RRS 19/32-37
16.	Medanisara rasa	Swedana in dolayantra with Kanji as media for 12 hours.	RRS 20/120-126
17.	Ankoladi lepa	Paste of Gunjabeeja churna and chitrakamula churna with Kanji. Indicated in switrukushtha.	RRS 20/211
18.	Martandeshwara rasa	Equal quantity of Jeernatamra churna and Swarnamakshika churna taken and grinded with Nimdu swarasa or Kanji.	RRS 21/62-68
19.	Vijayabhairava taila –I	Kajjali is added with Haratala and Manashila and grinded with Kanji for 1 day. Indicated in kampavata and all vatarogas. Given 10 drops in milk.	RRS 21/148
20.	Vijayabhairava taila –II	Method of preparation same as Vijayabhairava taila –I. Given 7-8 drops in Tambulapatra. Indicated in bahukampa, shirokampa, ekangavata.	RRS 21/149-151
21.	Suta taila	Kajjali is added with Haratala and Manashila grinded well. Then it is grinded with Kanji for 2-3 hours. Indicated in bahukampa and shirokampa both internal administration and external application.	RRS 21/152-156
22.	Vardhaman rasa	Purified gold and copper subjected to intense heating in musha and then dipped in tila taila, takra, gomutra, Kanji and Kulattha kwatha for 7 times in each media. Indicated in yoniroga	RRS 22/30-40
23.	Jwaradiroga nashanartha in sadyojata balaka	Towel soaked in Kanji is used to wipe baby's body for 2-3 times	RRS 22/131
24.	Grihadhuma kwatha	Decoction prepared with grihaduma and kanji. Used for gandusha in mukhadurgandha	RRS 24/43
25.	Aranala gandusha	Kanji is boiled by adding little amount of saindhava lavana. Used for gandusha in mukhavairasya.	RRS 24/52
26.	Tailakanjika gandusha	Kanjika and lavana used for gandusha in tambula churnadagtha in mouth ulcers.	RRS 24/53
27.	Ravitandava	Tamra patra shodhana as per samanya shodhana procedure. Indicated in bhagandara	RRS 24/110-113
28.	Vishnukrantadi lepa	Equal quantity of Aparajita and petarivriksha bark are taken and grinded with kanji. It is applied over kalasphota and granthi	RRS 24/132
29.	Upadamshadi pratikara	Samudra lavana is grinded with kanji. Used for external application.	RRS 25/75
30.	Swarna and roupya shodhana	Paste of Panchamrittika and nimbu/kanji is applied over swarna patra, dried and given laghuputa.	RRS 28/4
31.	Tamra bhasma	Shudhha tamra patra is cooked with gomutra in staliyantra for 3 hours. Then paste of gandhaka and Nimbu swarasa/Kanji is applied over tamra patra and subjected to gajaputa. Total 15 puta has been told.	RRS 28/11
32.	Lohamarana vidhi	Tamra and Dhanyabhraka is given intense heat and quenched in kanji	RRS 28/101
33.	Parada jarana	Dhanyabhraka is given bhavana with kanji for 7 times.	RRS 30/16-20
34.	Rasaklapa (ajerna)	Rasasindura with madhu; paste of kanji with Erandamulakwatha and Haritaki churna. Given for internal administration.	RRS 30/35
35.	Rasakalpa (pakshmathate)	Karpasabeejamajja – 7 parts Pippali churna – 1 part mixed together and pounded with kanji in a khalwa yantra and allowed to dry. Indicated to apply over eyelashes.	RRS 30/62
36.	Rasakalpa (vishadigdha vrana)	A thick cloth is taken, it is washed with chanakamala and dried. Equal quantity of Bakuchipatra, chakramarda patra, Karpasa patra and Agastaya patra are taken and kept over the cloth. It is then soaked in kanji and macerated with hand after adding Parada bhasma.	RRS 30/81-82
37.	Parada bhakshana kala apanya	Kanji is contraindicated in Parada bhakshana kala.	RRS 30/107

DISCUSSION

According to translator and editor DA Kulkarni, Kanji can be taken for the procedure where ever amla dravya has been mentioned in the verse. On the other way commentator Siddhinandan Mishra has explained lemon juice can be taken where ever amla dravya mentioned in the verse. Kanji is utilized right from the purification method of minerals, metals, gems stone, etc. to the making of gems stone druti. Kanji is also used as media to test the type of Pittala which should be used for processing. Kanji is one of main media in the eight basic processing steps of mercury, in jalauka bandha and in incineration of mercury. Kanji is used in the preparation of Raseshwara (rasalinga) and it is said to be worshipped at the entrance of Rasa Mandapa. Kanji is used in process of extraction of oil and it has also been described in the context of Valabhi yantra. Kanji is used in preparation of various formulations. Kanji is said to be contraindicated during parada sevana kala.

CONCLUSION

Kanji having the properties like tikshna, samghata-bhedana and shaithilikarana possess the wide applicability in multiple procedures of Rasashastra. Due to its acidic nature, it helps to break the hard mantle of metals. It makes the metals brittle and soft thus making it suitable for further processes. It has been utilized as different media in many of the formulations.

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