

Indigenous knowledge of the traditional and qualified ayurveda practitioners on the nutritional significance and use of red rice in medications

Hegde S, Yenagi N B* & Kasturiba B

Department of Food Science and Nutrition, College of Rural Home Science, University of Agricultural Sciences,
Dharwad-580005, India
E-mail: niryenagi@yahoo.co.in

Received 07.12.11, revised 13.01.13

Red rice *Rakthashali* (with red husk and grain) is the native staple food of Dakshina Kannada (Karnataka) and Kasaragod (Kerala) district. A study was conducted to collect and document information from the traditional and qualified practitioners on the use of red rice in various medications and therapies to find its applicability as a functional food especially in promoting lactation. Red rice was found beneficial to health in terms of its nutritional significance and its applicability in various medications like in allergies, skin ailments, uterus related problems, nerve disorders, gastro-intestinal problems, liver, kidney disorders, fever, infections and in promoting lactation.

Keywords: Red rice, Traditional practitioners, Qualified practitioners, Medications, Lactation.

IPC Int. Cl.⁸: A61K 36/00, A01D 6/00, A01D 20/00, A47G 19/26, A47J 39/02, A01G 9/00, A01G 16/00, A 01D 7/00

Rice known as the grain of life for Indians is also an integral part of social rites, rituals, festivals and medications. Red rice has occupied a special position since time immemorial and is highly valued as they have the power to redress the imbalance in the *tridosha - the vata, the pitta and the kapha*¹. In the past, many traditional red rice varieties with specific qualities were grown organically for use, as food and in medications. Red rice varieties have been specially used in increasing milk secretion in lactating mothers. It is offered along with fenugreek and salt or sugar to promote lactation². Red parboiled rice is the main staple food of the coastal belt of South Karnataka and its neighbouring district of Kasaragod. It is observed that the endurance to disease and infections is high in population that follow traditional food systems. Hand pounded rice used for consumption in the past had several significant implications on health and nutrition especially on the mother and child. Traditional varieties had unique nutritional and medicinal qualities. These varieties are almost in the verge of extinction as the old land races are considered uneconomical compared to the new, short duration varieties. Traditional food systems and its significance to health is lesser known to the new

generations. The rural population which constitute 80% of the population has been depending on ethno medical practitioners for their health and well being. There are now a very few number of traditional practitioners in the region and hence accessible to part of the population only. The loss of local traditions and associated knowledge system (Ethnomedicine) has resulted now in poor nutritional status of the vulnerable groups. The present study was carried with an objective to pool information and document from the traditional practitioners and the qualified ayurveda practitioners regarding the use of red rice in medications and further to create awareness. This study intends to conserve the ethno medical wisdom of the traditional communities on the maintenance and practice of health and medicine for wider dissemination in the community.

Methodology

The coastal districts of Dakshina Kannada in Karantaka and its neighbouring Kasaragod district in Kerala which is the staple red rice belt with similar agroclimatic conditions and cultural diversity was selected for the study. The sample of the study comprised of traditional and qualified practitioners who has either acquired knowledge about the practice from the family tradition of practitioners or received formal training from a master healer or technically

*Corresponding author

qualified through formal education or professional degrees. Purposive sampling method was adopted for the selection of the sample. Traditional aged between 55-75yrs (*Nati Vaidyas and pandiths*) and qualified practitioners were interviewed using a schedule. Information was collected from 10 practitioners of two districts (Dakshina Kannada and Kasaragod) belonging to regarding a) the type of red rice varieties used for various physiological conditions and ailments, b) form of usage, c) types of formulations used in therapy, d) its specific use in promoting lactation, e) method of preparation and therapeutic uses like in lactation and other ailments. The practitioners from 8 villages representing 4 talukas of Dakshina Kannada (Puttur, Bantwal, Mangalore, Belthangady) and one taluka of Kasaragod district (Kasaragod) were identified through field visits to selected areas under different talukas as per the guidance and help of local people who were familiar with the well known practitioners in their locality (Fig. 1). The practitioners were briefed about the purpose of the study and information was collected with their willingness to share the knowledge with their prior consent. Descriptive statistical tools (eg. frequency distribution and percentages were used to group and summarize the data. The information

from the practitioners is compared with literature³ and the information collected through personal interview on use of red rice in various human diseases and disorders along with other plant parts used in combination with red rice, methods of preparation, dosage and administration in various ailments were documented.

Enumeration

Red rice is used in different forms in food and medications. Partially boiled red raw rice (*Yedurubelhige*) was specifically used during lactation (Fig. 2). Red rice varieties *Athikaya*, *Athikaraya*, *Kayame* were specifically used in lactation and other medications. Red, parboiled *ganjee* is recommended in all ailments as it is nourishing, easily digested and assimilated in the body (Fig. 3). The rice gruel is an energizing drink and is a good diuretic. The raw red rice *manni* (Fig. 4) is used for promoting lactation and the water left after the washing of rice *Akkacchu* is used as a base in mixing of all the medicinal ingredients in medications. The paste of red rice is used for external applications (*lepa*) as in skin allergies and for detoxification of the body. The use of red rice as food and medicine and in external therapies is enumerated below.

Red rice as food and medicine

In promoting lactation

- *Yedurubelhige* is cooked with addition of pepper tied in a cloth. To the cooked rice jaggery, salt and thick coconut milk is added and cooked again. This is served with ghee for a minimum of 3 days or more after the 15th day of delivery at least two servings in a day. Fenugreek (*Trigonella foenum-graecum* L.), coriander (*Coriandrum sativum* L.) or cumin (*Cuminum cyminum* L.) is also used instead of pepper (*Piper nigrum* L.).
- *Manni*, a sweet porridge is prepared with or without the addition of medicinal ingredients in it. Soaked red raw rice is ground into a fine consistency with the addition of coconut (*Cocos nucifera* L.) milk, a pinch of salt to form a thin batter. The batter is cooked on a slow flame with the addition of palm (*Palmyra palm*) jaggery till thick and poured into a greased tray and taken at least twice a day.
- Beaten red rice, ajwain [*Trachyspermum ammi* (L.) Sprague], coriander seeds (*Coriandrum sativum*), mustard [*Brassica juncea* (L.) Czern.], jeera (*Cuminum cyminum*), garlic (*Allium sativum* L.),

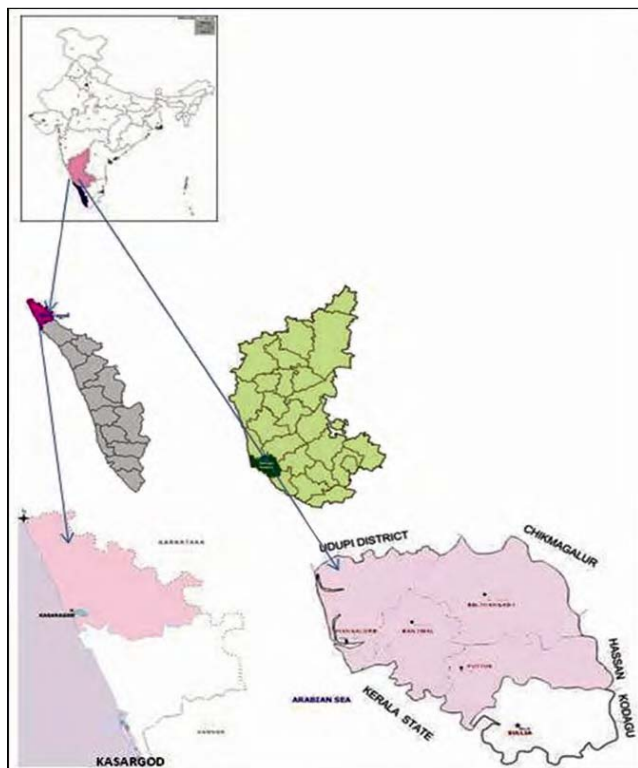


Fig. 1—Location map of the study area

dry ginger (*Zingiber officinale* Roscoe), red chilli (*Capsicum annuum* L.) and pepper (*Piper nigrum*) are dried well in the sun. It is ground to a smooth paste to make a thin batter by addition of boiled cooled water, brought to boil and cooked on a low flame till thick. Grated coconut is fried (*without oil*) and jaggery, ghee and coconut milk is added to the above mixture and cooked for an hour, cooled and bottled. This medicine (*Oma Adethina*) is served daily one cup (200 gm) in the morning and evening.

- *Odu Adye/Susupe Dosa* is prepared from *Yedurubelthege*. Rice is soaked in water and ground with addition of aniseed, palm jaggery and a pinch of salt and kept aside for 4 hrs. Dosa is cooked on earthen (*odu*) fry pan kept covered and cooked with ghee without flipping. At least 3 dosas twice a day for 5 days is recommended after the 15th day of delivery without combining with any *ganjee*. This helps in purification of blood during lactation.
- Fenugreek and raw rice is roasted separately and powdered. Coconut milk is extracted thrice. The 3rd extract is added to the powder and boiled. When cooked the 2nd extract is added along with jaggery stirred well followed by the 1st thick extract of coconut milk. It is cooked on a low flame till it leaves the sides of the vessel. Ghee is added to it and removed from the heat. This can be stored for 15 days and is ideal for nursing mothers and relieves from backache.
- Hand pounded or slightly polished red raw rice or parboiled rice is cooked and used with pepper or seasoning of garlic along with ghee or in the form of rice gruel (cooked rice with its water) for a period of one month 2-3 days after delivery to promote lactation. In some areas red rice *ganjee* is administered to the mother from the 16th day after delivery up to one month.
- *Parched rice* from red rice in the form of *ganjee* or sweet preparations (*ladoo*) is used after delivery. This improves the secretion of saliva and also beneficial in relieving indigestion problems.

In various ailments

- To the water left after washing of rice seasoning is added and then boiled well with addition of salt and jaggery. Prior to being served thick coconut milk is added. *Akkacchu saar* improves appetite, detoxifies the body and beneficial in liver and blood disorders.
- Hand pounded or semi polished red rice is cooked in thick cow's milk with addition of salt, sugar or jaggery, ghee and cardamom powder. When the mixture turns thick it is evenly spread on a plate smeared with little thick milk (*Thamhalu*) and served on cooling. *Akki thaniparamaana*, is beneficial for patients after recovering from illness, acidity, the aged, small children and those with general weakness. It improves appetite when taken in small quantity and can be frequently consumed during summer.
- For Asthma (*breathlessness*) one spoon of latex of *Calotropis* is added to 200 gm of red raw rice soaked in water for 3 hrs. It is ground to a paste and made into *roti* by adding sesame oil. One *roti* a day for 3 days is recommended.
- Small red paddy with red grains is washed in water, ground and strained. Cardamom powder is added to it and heated followed by cumin and sugar. This drink is given to patients having cholera once in 2 hrs.
- The inner portion of the bark from a big tree of *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn. or *Ficus religiosa* L. is taken and dried in shade and pounded to make a *churna* (powder). On any of the *Pournima* (full moon) night around 200 gm of old red rice (*Athikaraya var.*) is pound and made into *ganjee* to which 1/3rd litre of cows milk, little jaggery or castor sugar is added and cooked. The rice *kheer* (sweet semi liquid drink) is placed in copper plate and mixed with the *churna* prepared and exposed to the moonlight for a minimum of 4 hrs. This is used the next day in an empty stomach. This is effective for patients with asthma or respiratory problems and should be continued for at least 3-4 times on *Pournima* days for complete cure.
- Red rice *ganjee* prepared from old red rice (rice stored for more than 2 yrs) taken with addition of ghee relieves from constant hiccup problems.
- One handful of red flaked rice (*Avallakki*) is mixed with tender coconut water and left for ½ an hour. To this castor sugar or palm jaggery is mixed and consumed as brunch. This should be taken twice a week for 2 months. This makes the body strong and resistant to infections.
- Crushed *jeera* (*Cuminum cyminum*) is added to *Akkacchu* and brought to boil once. This should be and consumed frequently in fever and blood related diseases. This reduces weakness, lack of appetite and sleeplessness.

- To overcome irregular headaches with a rise and fall with the *Suryastha* red rice *ganjee* prepared the previous night (*thanjana*) is taken the next morning with curds (*benjana*) on an empty stomach for 3-7 days.
- The pulp of pumpkin with seed (2 seeds for one year old child) is ground to a paste with fresh red rice gruel (1/2 glass) . Castor sugar / jaggery is mixed to it and consumed in the morning. This can also be taken in the form of *Halu* (milk) *kashaya*. This facilitates proper development of brain nerves in children.
- In pregnant mothers experiencing unusual pain during the 8th month powdered coriander is added to *Akkacchu* water mixed and strained and given one spoon frequently. This stabilizes the foetus and reduces the pain.
- To stop vomiting in pregnancy, 5 gm of coriander powder and 25 gm of castor sugar is mixed in *Akkacchu* and taken part by part. This subsides vomiting.
- In children suffering from burning sensation of the urine, red rice is mixed with curds to which smashed banana and jaggery is added. This is given 2-3 times a day for effective results.
- Parched red rice (*pori*) made from *Gandhasale* and *Rajakalame* (old land races) is taken in equal proportions and mixed with jaggery syrup and made into *lados* for special occasions like *upanayana* (thread ceremony) and also given to girls who attain puberty as a therapeutic food (Fig. 5)
- Paddy is soaked overnight and ground with water and strained in pure cotton cloth. The paddy milk extract is mixed with cow's milk and stirred with addition of ghee, sugar and cardamom and brought to porridge (*manni*) consistency. This is beneficial for digestive problems, children having epilepsy, weakness with a long term illness. This helps in rejuvenation of energy and to build stamina. One tumbler of porridge is equivalent to one meal.

Red rice in external medications

- For common skin diseases slightly sour, buttermilk or milk is mixed with *akkacchu* water, applied all over the body and allowed to dry for an hour. It is then washed off without using soap. This should be done at least twice a week for 5-6 times.
- One spoon of turmeric powder and 4 spoons of raw red rice (pounded rice used earlier) powder is

mixed with water to a paste and cooked to a thick paste .This is thickly smeared on the wound or put in a cloth and tied on the swollen portion at night. It is then washed the next morning. This is effective in case of severely smashed and bruised



Figs. 2–5 – 2, Red rice; 3, Red rice *ganjee*; 4, Red rice *manni*; and 5, Parched red rice

wounds with swelling and pain and with stones and thorns inside.

- For deafness occurring in the later stage (not by birth), salt mixed with red rice gruel (rice *ganjee*) is poured into the ears for some days as a remedy.
- Sour buttermilk is added to *akkachu* and then applied to the body and bathed after one hour. No soaps should be used. This should be done twice a week at least 5-6 times a day.
- Red flaked rice is soaked in coconut water till it ferments well. It is then ground to a paste and applied on the foot during evening for an hour. This should be continued for 1-2 weeks. This relieves cracked sole and pain.

Discussion

At present, rice is seen under different angle other than its use as a staple food. In spite of the various community nutrition programmes implemented there is no significant improvement in the health conditions due to faulty diets, poor lifestyles, non availability of quality food grains and poor medications. This is apparent not only in urban India but also in rural India. It is observed that the endurance to disease and infections was high in population that followed the traditional food systems comprising mainly of semi polished or hand pounded rice. Though the people continued to use red parboiled rice in the region its form of use changed from hand pounded to slightly polished and to highly polished grain. The degree of milling and polishing determines the amount of nutrient removed. Losses of polishing are 29% of protein, 79% of fat and 67% of iron⁴. Red rice gruel is found to be an excellent health tonic as it is found energetic, refreshing, easily digestible and an excellent diuretic. Its mineral content, starch quality, glycemic index and antioxidant activity has made it unique among other cereals. Red rice has gained popularity in Japan as a functional food because of its high polyphenols and anthocyanin content. *Rakthashali* is the best for health, skin, eyesight, diuretic, improves voice and also fertility. The red parboiled rice is recommended in all ailments as it is easy to digest, nourishing and quickly assimilated in the body. Studies have shown that in comparison to other sources of starch, rice starch is completely absorbed by the human body⁵. Rice varieties have been specially used in increasing milk secretion in lactating mothers. The old land races cultivated organically had unique qualities in terms of yield, grain quality and resistance to pests and diseases⁶.

The *Maharaji* and *Bhejri* varieties from Chhattisgarh, Jonga in Bihar, Neelam Samba in Tamil Nadu are used for promoting lactation⁷⁻⁸. The significance and use of red rice in lactation is known only to 50% of the qualified practitioners with the family tradition of practitioners. This indicates that the traditional knowledge system is less practiced and aware off in the present context. However, the qualified practitioners understand the importance of red rice and mainly use for external applications (*lepa*) or therapies such as massages. Pharmacological and clinical trials with red rice has shown antibacterial, antidiarrheal, antidysentric, antifungal, antiinflammatory, antioxidant, anti thyroid, antiviral, antitumor and antihypercholesterolemic activities. It also stimulates the protein secretion and has radical scavenging effects. Traditional practitioners have been administering the medications for all the above conditions through their local practices and combination with herbs with the resources available around. Hence, traditional practices should be on record with Scientific validation for the practice of the same in the community. The varieties used traditionally with medicinal properties need to be conserved and revived with public awareness. Native foods with significant nutritional and medicinal qualities should be promoted as functional food for wider dissemination in the community.

Conclusion

Red rice has many significant implications on the human health not only in terms of food but also as a medicine. Its role especially in promoting lactation is very important in the context of the poor nutritional status of the mothers and increased disease conditions in the community. Knowledge of different forms of its use as food and in simple medicinal formulations can serve as a tool in self medication and in curing many ailments and disease conditions among the population. Revitalizing the traditional healing systems based on native indigenous knowledge is very essential to ensure physical and economical well being and also to conserve the native resources. There is a need to now promote native food as food and medicine. The finer aspects of these food could further be used in designing functional foods.

Acknowledgement

Our humblest regards and gratitude placed to all the traditional and qualified practitioners of Dakshina Kannada and Kasaragod districts specially

the *Nate Vaidyas*, Linganna Ajila (age 70yrs) from Alangar village, Venkataramana Daithota (age 75yrs) from Panaje village, Puttur taluk and Annu poojary (age 54yrs) from Killur village of belthangady taluka of Dakshina Kannada district, who willingly shared their knowledge on red rice for this study.

References

- 1 Ahuja U, Ahuja S C, Chaudhary N & Thakrar R, Red rices- Past, Present and Future, *Asian Agri-History*,11(4)(2007) 225-248.
- 2 Ahujal U, Ahujal S C, Thakrar R & Singh R K, Rice-A Nutraceutical, *Asian Agri-History*,12(2)(2008) 93-108.
- 3 Ross IA, Medicinal Plants of the World, Chemical constituents, Traditional and modern medicinal uses, (Humana Press Inc, Totowa, NJ), 1999.
- 4 Grist DH, Nutritional value of Rice,in *Rice*, 5th edn, (Longman,Londen and New York),1975.
- 5 Nene YL, Rice research in South Asia through ages, *Asian Agri-History*, 9(2) (2005) 85-106.
- 6 Rahman S, Sharma MP & Suman S, Nutritional and medicinal value of some indigenous rice varieties, *Indian J Tradit Knowle*,5(4)(2006) 454-458.
- 7 ItaniT & Ogawa M, History and recent trends of red rice in Japan, *Japanese J Crop Sci*,73(2)(2004),137-147.
- 8 Das DK & Oudhia P, Rice as a medicinal plant in Chhattisgarh, *NBPGR Newslett*, 122, (2000) 46.