

## Medicinal rice- an ignored episode

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Rice is a staple food and an indispensable part of the festivities and rituals in India since historical era. It is not only the enormous source of nutrition for human beings but also possesses lots of medicinal properties. Though some Asian countries have been using rice for medicinal purpose since time immemorial, the theory of medicinal value of rice is believed but not scientifically proven effective yet. For example: Philippines where rice bran is extracted and used as an excellent source of vitamin B to prevent and cure beri-beri. In Malaysia, rice is used for treating eye and for use with acute inflammation of the inner body. In Cambodia, mature hulls are considered useful for treating dysentery. China uses rice for strengthening weak stomach and in India, rice water is prescribed to counteract inflamed surface (Gutierrez, [www.medicinalrice.html](http://www.medicinalrice.html)). In Ayurveda, India's traditional system of health treatment of which the roots date back thousands of years, there is a mention of Navarakizhi (pronounced: Navarakiri) which is one of the more exotic treatments offered by practitioners. Ayurveda also recommends white rice for the problem of gas, bloating, or indigestion. It is said clearly in ancient Indian literature that every plant on this earth is somehow beneficial for human beings, animals and for other plants (Oudhia, 1999). India is blessed with a wide range of medicinal plants most of which have been traditionally used in Ayurveda, Unani systems of medicines and by tribals for generations. Rice is considered to be acrid, oleaginous, tonic, aphrodisiac, fattening, diuretic and useful in biliousness (Caius, 1986). According to M. S. Swaminathan, (Chairman, MSSR

Foundation), "India has a host of rice varieties of medicinal value, which must be fully exploited. If properly researched and developed, the varieties can be used as valuable infant food. At present, varieties such as 'Njavara' are being used by practitioners of Ayurveda to cure illness". It is written in Ayurveda that the Raktashali red rice has nutritive food and medicinal properties. Also some other rice stains like Sashtika, Sali, and parched rice having medicinal value were documented in the Charaka Samhita and the Susruta Samhita. Various diseases such as diarrhea, vomiting, fever, hemorrhage, chest pain, wounds, and burns may be treated with them. Also there is the mention of coloured rice which was popular at that time for their special features such as medicinal value and exclusive taste. In India, rice was distinguished into three broad kinds according to hardness, colour, flavour and size of the grain (Ray Chaudhuri, 1964). These varieties are not still these varieties are cultivated in some pockets of the country by tribals and small farmers who are not at all acquainted with modern agricultural techniques and medical facilities, where indigenous paddy with their nutritional and medicinal properties are a rich alternative for a good livelihood.

The medicinal quality of rice varies from type to type. Many of the beneficial compounds present in brown rice are absent from the highly refined white rice. There is 25 per cent fibre in rice bran which is known to assist the absorption of fats in the gut and in decreasing the levels of cholesterol in the blood. Fibre is also helpful in digestion and can be used as a mild laxative. The oil obtained from rice bran contains vitamin

E and minerals. The vitamin E groups of compounds in rice have antioxidant properties and these compounds could explain some of the traditional medicinal uses of rice, particularly to treat cancer ([www.rice\\_western\\_medicine.html](http://www.rice_western_medicine.html)).

Rice plays an important role in post-delivery diets. It is cooked in excess water and the starch is collected separately. One glass of this with jaggery is taken for five days. A preparation is given to new mothers called sathaura which is prepared with rice flour mixed with ginger, coconut, raisin, gum of *Acacia arabica* or *Butea frondosa* and Bengal kino with jaggery. These have resulted in speedy post delivery recovery of women (Ghosh and Tyagi, 2010). The red yeast rice has been used both as food and as a medicinal substance for centuries. It is made by fermenting a type of yeast called *Monascus purpureus* over red rice. This is used in Chinese medicines to promote blood circulation, soothing upset stomach and the function of spleen. Usage of rice in medicine has led to effective treatment of these ailments (Ahuja, <http://www.agri-history.org>).

In Uttarakhand, many indigenous paddy varieties are known to be beneficial to pregnant women and those suffering from anemia. The rice grown there is also beneficial for the treatment of arthritis. More than 35 types of rice are grown there which are not only source of healthy food but have now become the source of good income as the dehusked paddy is in good demand. In Bihar too, local rice varieties are being used with other ingredients to meet the nutritious needs of lactating mothers. In West Bengal more than 5000 varieties of rice are to be found amongst which many are used as medicines to cure ailments (Ghosh and Tyagi, 2010).

In Odisha, the tribal inhabitants consume rice beer colloquially called 'Handia' prepared from traditional rice varieties by fermenting watered rice for several days. They add a herbal formulation called 'Bakhara' into it, which they claim makes it a health drink and which also prevents gastrointestinal ailments. Similar practice is observed among the tribals of North Bengal, who consume an alcoholic beverage called 'Haria'. It is herbal formulation prepared out of rice flour fermented using yeast culture (Basnet, 2003).

In Chhattisgarh, insects attacking on rice are also used in traditional healing (Oudhia, 2008). They use different parts of medicinal rice in treatment of both common as well as complicated diseases (Oudhia, 2008). But the area under traditional medicinal rice is decreasing at alarming rate. Farmers lost their interest in such a non profitable crop. They have found chemical farming more beneficial. An ethnobotanical survey was conducted from year 2001-2007 in Chhattisgarh Plains revealed that poplar medicinal rice Alcha, Laicha, Baisoor, Maharaji, Jhilli, Kanthi Banko, Udan Pakheru, Ramkeli, Shyam Lal, Tenduphool etc. are still under cultivation and in use in traditional healing. In another survey conducted during 1999-2000 by the Department of Agronomy, Indira Gandhi Agricultural University, Raipur, it was revealed that more than 50 traditional rice varieties that possess medicinal properties were there. Most of these varieties are under cultivation in very restricted areas. People in Chhattisgarh use these medicinal rice varieties for the ailments of human beings and cattle. Generally rice is used in diets for the sick and the survey proved that rice is the safest and best food in all dysenteric complaints especially with curd. Rice water is recommended as an excellent

**Table 1 : Medicinal properties of some indigenous varieties**

Variety	Properties
Neelan Samba	Increases the milk flow in lactating mothers
Kuzhiyadichan	Increases the milk flow in lactating mothers
Karunkuruvai	Used in the treatment of orthopaedic ailments and filariasis
Pitchavari	Used in the treatment of diarrhoea in cattle
Kappakar	Intermediate amylose content and moderate gelatinization temperatures like high quality rice (Wickramasinghe and Noda, 2008)
Bhut moori	Cures anemia and enhance the blood volume in women after childbirth.
Kabiraj-sal	Fed to convalescing patients to quicken recovery.
Kolajoha, Kelas (rice with reddish kernel)	Given to lactating and pregnant women and small children as it contains higher amount of iron and other minerals
Njavara	Body enriching item, to exclude toxins and delay premature ageing
Geerakasala, Gandakasala	Colored rices (black and red) are rich in minerals (iron and zinc) and polyphenols and have antioxidant properties
Laal Dhaan (Red paddy)	Beneficial for pregnant women
Dimarya, Kinsyalu and Sukhnanadi	Good for women suffering from anemia
Kafalya, Kaloun and Bhet Kalounisa	Effective for the women who have problem in breast-feeding new born babies and also helps the bones to become stronger
Saathi	Effective for joint pains and arthritis.

demulcent, refrigerant drink in febrile and inflammation diseases and also in dysuria. It was also noted that varieties were named on the basis of their medicinal properties. For example, medicinal rice variety “Laicha” was so named because of its unique property to prevent “Laicha” disease (skin infection). But this survey also revealed that this useful tradition is losing its importance among the young generations (Das and Oudhia, 2000).

Also Karnataka has a rich diversity of medicinal rice varieties. Unfortunately, the entire genetic resources are getting extinct, as the crop species are no longer cultivated. Twelve medicinal rice diversity of Karnataka has identified and documented. The survey included ecological and cultural context of the rice varieties. Collection of rice genetic resources was conducted here which is an extremely valuable resource that aims to be preserved, while also making the seed resources available for farmers and breeders. Some varieties like Kari kalave, Kari batha, Ambemore, sannakki, Athi karaya, Kayame, Byravadlu and Kari gajivile had been identified and preserved (<http://www.sahajasamrudha.org>). According to late Dr. Richaria, the well known rice scientist 4, 00,000 varieties of rice existed in India during the Vedic period. According to his estimates, even today 2, 00,000 varieties of rice exist in India and each one has a specific purpose and utility (Ghosh and Tyagi, 2010).

Njavara is an important medicinal rice variety of Kerala, India, widely used in Ayurveda as a ‘health food’ and in the treatment of rheumatoid arthritis, paralysis, neurodegenerative diseases and in rejuvenation therapy (Mohanlal *et al.*, 2011). Njavara is used as a supplementary diet for underweight persons or consumed as a replenishing drink called ‘karkada kanjhi’ during monsoon season along with some herbal medicines. The oil prepared from this variety is used for a wide range of ailments like aches, painful inflammations, spondylitis, lower backpain, etc. But the most significant use is the medicinal pouch named ‘njavarakizi’, made with this rice after cooking it in a milk decoction of medicinal herb, *Sida cordifolia*. It is applied as a massage on the whole body, dipping the pouch repeatedly in the decoction (Mohanty *et al.*, 2012).

There is no doubt that so-called “high-yielding varieties” (HYVs), introduced since the 1960s were too profitable for farmers but this is also the only cause of disappearance of huge number of beneficial local varieties. Thus millions of years of genetic diversity and germplasm heritage were vanishing forever (Bakers, 1978). These varieties evolved over a long time in local farms but now these extra ordinary native varieties are almost vanished. There is an urgent need of preserving these germplasms. It is a good sign that some attention are paid nowadays for research and development of medicinal and nutritive properties of indigenous varieties. Biodiversity is the backbone of nature and for maintaining food security we have to maintain this first. So it is better to understand this fact

quickly otherwise that future will not far when we will too enlisted as endangered species. Some indigenous varieties with their medicinal properties are given in Table 1.

## LITERATURE CITED

- Ahuja, U., Ahuja, S. C. and Chaudhary, N. Red Rices – Past, Present, and Future. Available at
- Bakers, H.G (1978). *Plant and civilization*, Words Worth Pub Co Inc, California, USA. 3rd edn, p. 46.
- Basnet, D.B. (2003). *Ethnobotany*, **15**:64–66.
- Caius, J.F. (1986). *The medicinal and poisonous plants of India* (Reprint). Pbl. Scientific Publishers, Jodhpur (RAJASTHAN) INDIA.
- Das, G. K. and Oudhia, P. (2000). Rice as medicinal plant in Chhattisgarh (India): A survey Plant Genetic Resources Newsletter, **122**:46
- Ghosh, G. and Tyagi, S. (2010). Solution exchange for the food and nutrition security community consolidated reply. Available at <ftp://ftp.solutionexchange.net.in/public/food/cr/cr-se-food-30081001.pdf>
- Gutierrez, H.G. Medicinal uses of rice. *Materia Medica*, **1** : 162-164.
- Mohanlal, S., Parvathy, R., Shalini, V., Helen, A., Jayalekshmy, A. (2011). Isolation, characterization and quantification of tricin and flavonolignans in the medicinal rice Njavara (*Oryza sativa* L.), as compared to staple varieties. *Plant Foods Human Nut.*, **66**(1):91-96.
- Mohanty, R.B., Panda, T. and Tripathy, B.K. (2012). Medicinal rice varieties of India need urgent attention. *Curr. Sci.*, **102** (4):547.
- Oudhia, P. (1999). Medicinal weeds in rice fields of Chattisgarh (India). *Internat. Rice Res. Notes*, **24**(1):40.
- Ray Chaudhuri, S.P. (1964). *Agriculture in ancient India*, ICAR, NEW DELHI (India) 62 pp.
- Reviving medicinal rice varieties of Karnataka, India.
- Rice- Western medicine. [www.rice\\_western\\_medicine.html](http://www.rice_western_medicine.html).

## WEBLIOGRAPHY

- Oudhia, P. (2008). Medicinal rice tenduphool [Internet]. Version 3. Knol. Available from:[http://knol.google.com/k/pankaj-oudhia/medicinal-rice\\_tenduphool/3nerdtj3s9179/3](http://knol.google.com/k/pankaj-oudhia/medicinal-rice_tenduphool/3nerdtj3s9179/3).
- Oudhia, P. (2008). One day in Chhura forest region, Chhattisgarh, India rich in floral and faunal diversity. Part-I: Medicinal Rice and Traditional Medicinal Knowledge about it. <http://www.Ecoport.org>.
- <http://www.agri-history.org/pdf/Red%20Rices%20-%20Uma%20Ahuja.pdf>
- <http://www.sahajasamrudha.org/Event%20Medicinal%20Rice.htm>

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