

Rice as Medicine

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Rice consumption is assumed to be associated with increase in the incidence of diabetes in the rice eating zones of the country

The increased sugar levels in diabetes are attributed to carbohydrates, which could include starches from white rice



A study of ~230 rice varieties world wide showed that indian rices are within recommended Glycemic index

Glycemic index measures the ability of a food substance to raise blood sugar levels after eating

Foods with a high glycemic index of 70 and above cause blood sugar levels to peak within a short period of time, damaging blood vessels and nerves

Foods with a medium (below 69) or low glycemic index (below 55) are better options for diabetics.

DR. MOHAN'S HIGH FIBRE RICE NOW IN SUPERMARKETS!!



Dr. Mohan's 

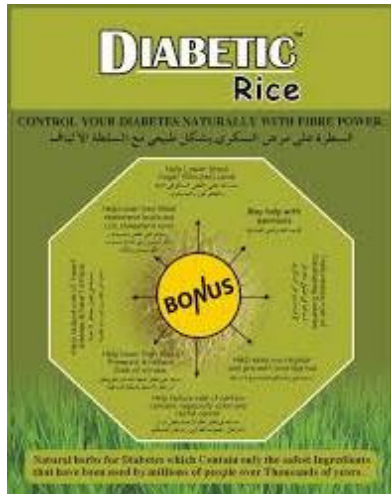
HIGH FIBRE RICE

5 TIMES MORE DIETARY FIBRE*

DIABETIC CURE RICE

- 100% Natural Formula
- Diabetic Cure Rice prevents/lowers the risk of diabetes.
- Diabetic Cure Rice prevents/lowers daily calories for weight.
- Diabetic Cure Rice reduces Cholesterol and Triglycerides.
- *Wheat-which is used in Diabetic Cure Rice is called Broken Rice.
- Fibre which is added in Diabetic Cure Rice is called Special Fibre Formula.
- Diabetic Cure Rice has been approved/authorized by the Government of India.
- *Minimum use 38 grams of fibre which contain the rice daily when the consumption of amount of Broken Curries Rice.
- Diabetic Cure Rice containing Fibre-Carbohydrate makes its absorbing, which helps separate in the body.
- Cholesterol present in these rice helps in reducing weight and moreover gas does not occur in stomach and it ends constipation.

*compared to regular polished rice



Generally white rice has a glycemic index between 72 - 83

Brown rice GI 48 - 62

Basmati rice GI 78 – 74

Most of the Indian rice varieties GI ~50 (<60)

Swarna and Mahsuri GI 55

Resistant starches play a role in GI



Though alternate foods are suggested/adopted, the satiety (satisfaction) of rice consumers can be full with low GI rice or brown rice

Health aware and diabetes prone rice consumers can switch their rice based diet to low GI rice

Biofortified rice with high zinc and iron is also being developed

Several 'Diabetic' rices are available in market, but their bio efficacy need to be certified with competent government body

Rice in addition to being staple food crop in India is also known for its medicinal values

Some selected varieties used in specific treatments

- **Aalcha, Nagkesar, Kari bhatta** - **Skin problems**
- **Atikaya** - **health tonic**
- **Kanthi Banko** - **Medicinal properties**
- **Chinta puvvu, Paccha ganneru** - **Nutritional & medicinal value**
- **Gathuran** - **Arthritis, Rheumatism**



Some popular medicinal rice varieties

Gathuran- arthritis

Aalcha' - pimples

Maharaji - strength and stamina to ladies post delivery

Baisoor – epilepsy; headache, boils, skin diseases, ringworm infections, conjunctivitis

Laicha – Pre pregnancy

Other popular medicinal rices

Jhilli

Ramakeli

Tenduphool

Pundarika

Sugandhalaka

Maetunaka

Udan Pakheru

Shyam Lal

Kalama

Panduka

Kardamaka

Mahasali



Red Rice



Kari Gajivili



Bravado Rice



Black rice



Athikaria

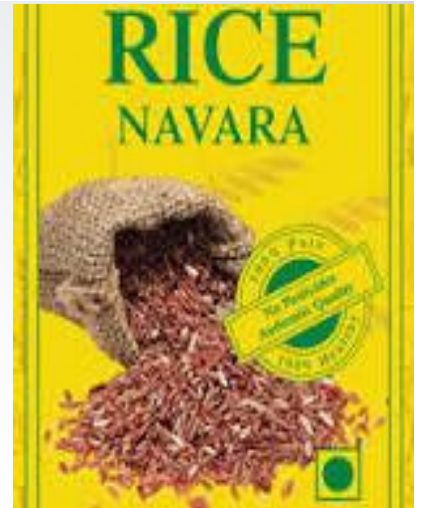


Kari Kalve

Of all medicinal rices, Njavara is the single largest used rice for medicinal purpose

Njavara rice cultivation is geographically restricted to Kerala (GEOGRAPHICAL INDEX)

The rice in good demand and its present market value is eight to ten folds higher than that of normal rice (Rs 350-400 kg)



Njavara is used in ‘*njavarakizhi*’ (an Ayurvedic treatments for neural disorders) and ‘*marunnukanji*’ (in the preparation of a replenishing health drink)

Njavara based treatments form one of the key elements in Ayurveda tourism in Kerala and elsewhere

Njavara rice is also made as powder and eaten with milk as breakfast cereal





- Few thin culms
- Short panicle
- Small grains

- **Susrutha samhita (Circa 400 BC)**
- **Charakasamhitha (Circa 100 BC)**
- **Ashtanga Hrudayam (Circa 300)**

- **Short duration (= 60days) - *Shashtika***
- **S. Indian languages - *Njavara***
- **Geographically restricted to Kerala**
- **Several treatment systems in Kerala**
- **Grains both medicinal & nutritive**

Njavarakizhi
Njavaratheppu
Neurological disorders
Muscle wasting

Supplementary diet
&
Health drink - *marunnukanji*

Nutritional status- CFTRI

Components Njavara (% higher than normal rices)

Total protein 16.5%

Thiamine 27-32%

Riboflavin 4-25%

Niacin 2-36%

Dietary fibre 44%

Phosphorus 354 mg/100g

Significantly higher

Potassium 304 mg/100g

Significantly higher

Magnesium 216 mg/100g

Significantly higher

Sodium 30.8 mg/100g

Significantly higher

Calcium 11.6 mg/100g

Significantly higher

Market potential of medicinal rices in country

- 50% of Indian consumers are rice based
- Satiety with rice consumption
- Rise of consumer awareness in health foods and preventive medicine
- Availability of medicinal rices and rices with low GI

Njavara farming and GI for Njavara is a proof of concept



A poster for Njavara rice. The title is "ഞവരകൃഷി" (Njavara) in Malayalam, with "N.JAVARA" below it. The poster includes a small portrait of a man, a list of bullet points in Malayalam, and a small image of a rice field. The text is in Malayalam and describes the benefits and cultivation of Njavara rice.



Status of Biofortified rice

At DRR since past 10 years, ~2000 genotypes were screened for high zinc and iron in brown and polished rice

In Brown rice, very high zinc and iron lines are available.

But the consumer's choice is only polished rice

For high zinc in polished rice, several landraces and varieties were identified

Status of Biofortified rice (contd)

Breeding lines with high zinc in polished rice are being developed not only in DRR, but also in UAS Bengaluru, TNAU Coimbatore, CRRI Cuttack and IGKV Raipur

Under AICRIP, a multilocation trial has been constituted since 2013 for identification of promising lines with high zinc in polished rice

However, promising high iron lines in polished rice were not available



Thank you.....

