

FOOD



KALANAMAK
Fragrant variety;
grows well in
saline soil

Rice buffet

Choose a traditional rice variety to suit your dietary needs

BY HEMA VIJAY

Even as late as in the 1990s, two lakh indigenous varieties of rice were being cultivated in India. Such diversity implied that if a person wished to try a new rice variety every day, he could live for over 500 years without needing to repeat one. And, during Vedic times, there were four lakh native rice types in India, as estimated by eminent rice scientist R.H. Richaria.

Even more consequential is the fact that Ayurveda and Siddha texts ascribe an impressive array of therapeutic and nutritional benefits to many indigenous rice varieties. Some increase immunity, some help build muscle mass while others rejuvenate hair growth and cure skin diseases and some are used in eye therapy. Ironically, despite this abundance, most of us settle for just one or two rather mediocre rice varieties through our entire life.

Thanks to organisations like

the Centre for Indian Knowledge Systems (CIKS), Chennai, indigenous rice varieties may yet see a revival. CIKS is documenting and researching the nutritional and therapeutic properties of native paddy varieties. It has just concluded a pilot project, supported by HIVOS and Oxfam-Novib. Both organisations are based in The Netherlands; HIVOS is an international development organisation, while Oxfam-Novib is Oxfam's Dutch arm. The research has thrown up amazing findings which prompt a rethink on our choice of rice.

CIKS discovered that iron content in the Karungkuruvai variety is more than four times that in Ponnai; the former has higher energy and calcium content, too. Neelam Samba was found to be rich in calcium.



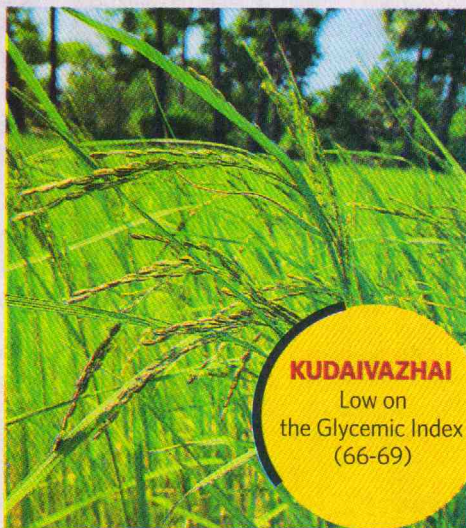
KOUNI
Low on the
Glycemic Index
(50-55). In compari-
son, White Ponni
is at 100



**MAPPILLAI
SAMBA**
Good source of
carbohydrates and
crude fibre



PERUNGAR
Rich in protein



KUDAIVAZHAI
Low on
the Glycemic Index
(66-69)

Traditionally, this variety is advocated for lactating mothers. Mappillai Samba was found to be a good source of carbohydrates and crude fibre; this is consistent with traditional wisdom that it provides strength and stamina. Perungar, Karungkuruvai and Kullakar varieties are rich in protein.

The Glycemic Index (GI) of many traditional rice varieties was found to be significantly low. The GI of Karungkuruvai, Kullakar, Kouni and Kalanamak was 50-55, while GI of Mappillai Samba and Kudaivazhai was 66-69. Compare these with White Ponni's GI count—100.

"These are promising findings," said A.V. Balasubramanian, director, CIKS. "Many of these rice varieties can be considered not just for wide-spread cultivation, but also nutri-

tional therapy and even drug development."

CIKS started off by looking through the information available on paddy types in modern technical literature, farmers' oral traditions, literature and folklore. Then it surveyed information in texts of Ayurveda and *Pakasastra* (the traditional science of cooking), in collaboration with the Foundation for Revitalisation of Local Health Traditions, Bengaluru. In the third stage of research, information on paddy in Siddha texts was surveyed in collaboration with Centre for Traditional Medicine and Research, Chennai.

Zeroing in on these native seeds posed a challenge. "For instance, there is a variety called Gandhashali, mentioned in the big three Ayurvedic

texts of *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya*, and in the *nighantus*, the Ayurveda lexicons. However, we could not definitely conclude what Gandhashali corresponds to in the field. On the other hand, the characterisations of the Karungkuruvai now cultivated in fields coincided with the information in Siddha texts, and so we proceeded with nutritional analysis on it," said Balasubramanian.

Next, CIKS did laboratory studies on the chosen rice varieties' physico-chemical properties (time taken to cook and volume of water absorbed), nutrient analysis (energy, carbohydrates, protein, fat, crude fibre, calcium, iron, potassium, sodium and phosphorus), GI, and the acceptability factor (taste, fragrance, texture and grain length) in double-blind trial mode, in collaboration with Ethiraj College for Women, Chennai. To ensure uniform standards, all paddy varieties were grown organically and tested unpolished.

So, what is in the cards next? "More research and clinical trials to evaluate therapeutic claims," said Balasubramanian. CIKS is now exploring collaborations with diverse institutions. For instance, institutions battling diabetes would find it rewarding to research further on rice varieties with low GI.

Finally, it is not just the nutrition factor that holds promise. For instance, the blackish Kalanamak, a fragrant variety from north India, is said to perform well in saline conditions. "We tried it in fields rendered saline and uncultivable in Nagapattinam by the 2004 tsunami," said Balasubramanian. "Kalanamak worked here. We also discovered that Kalarpalai grew and gave a moderate yield in saline conditions, where no other paddy can grow."

Scientists like Balasubramanian have only one request of Central and state governments—please facilitate mass production of indigenous seeds and make them widely available to farmers. ●