

Traditional Rice for Healthy Life

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Rice is one of the most important staple cereals for almost half of the world's population, particularly in Asia. Asia is home to 34% of the world's organic farmers, with India having the 33rd largest area under organic production. At this time, farmers are using traditional rice varieties while transitioning to organic production. The Green Revolution of the 1960s focused on creating high-yielding rice varieties with higher yields, shorter cropping seasons, and higher cropping intensities by cultivating two to three crops in one year. The loss of old rice varieties was one of the main ecological effects of the Green Revolution's adoption of new, high-yielding varieties. Roughly 400 indigenous types are available for cultivation in Tamil Nadu. Only a small number of these landraces, nevertheless, have had their nutritional qualities, potential medicinal benefits, and grain end-use quality thoroughly studied (Dhandayuthapani *et al.*, 2023).



Fig. 1 Common Traditional rice grown in Tamil Nadu

Health benefits

Nutrient-rich cereals play an important role in reducing malnutrition and developing immunity. A healthy diet, nutrient-rich food, and functional properties are accountable for a potent immune system (Indumathi and Sharma, 2022), which protects our body from entering pathogens and also cures several human diseases (Dolly Verma *et al.*, 2022). Hunger, malnutrition, and obesity are the biggest problems in the future (Priya Sundarajan, 2023). Hence, healthy food, diets, and improving food production with high nutritive value are the needs of the hour (Rani *et al.*, 2023). Farmers are now gradually discovering that traditional rice cultivars naturally have a valuable gene pool to adapt to climate change. In recent years, traditional rice has become more and

more popular for organic farming. Farmers are being drawn to cultivate due to the significant aspects of traditional cultivars, such as their medicinal and nutritional qualities and customer preferences.

Compounds presents in traditional rice

They have several physiological effects on human health. Phenolics with one or more aromatic rings and one or more hydroxyl groups are linked to a number of health benefits for people, including the ability to reduce inflammation, hypoglycemia, cancer, allergies, and atherosclerosis. Phosphorus is necessary for bone, teeth, energy metabolism, synthesis of amino acids and protein. It is a component of nucleic acids, involved in cellular metabolism and enzyme systems. The aliphatic compounds act as a substitute for sugars. Esters that have fragrant odours reason for essential oils and food flavor. Antibacterial action of furan was achieved by altering enzymes and selectively inhibiting microbial growth.

Numerous life forms have been found to naturally contain olefins. Most of the traditional rice contains amines and amides and are a main component of nucleic acids, proteins, and enzymes etc. Numerous bioactive components, including phenolic compounds, flavonoids, tannins, anthocyanins, proanthocyanidins, phytic acids, and γ -oryzanol, have been found to be abundant in traditional. 32 phenolic acids, including derivatives of hydroxyl cinnamic acid, and 7 distinct flavonoids have been found in rice cultivars. Furthermore, rice grains show promise as a nutraceutical for their anticancer, antibacterial, anti-inflammatory, anti-arthritic, antidiabetic properties (Forshed Devan *et al.*, 2023) and antioxidant activity (Udhaya Nandhini *et al.*, 2023).

Traditional paddy cultivars viz., Karunguravai, Mappilai samba, Illupaipoo samba, Kichadi samba, and Navarai were reported to treat human diseases and also involved in the induction of antioxidant activity (Kousalya *et al.*, 2022). Malnutrition is a major disorder in developing country and few scientists have made several attempts to develop new cultivars incorporating nutrition-rich paddy cultivar to feed the increasing population. Traditional rice cultivars were reported to cure

deficiencies like Protein-Energy Malnutrition and also treat biological diseases like nephrological disorders, diabetes, cardiovascular disease, and neurological disorders.

Conclusion

A healthy diet, nutrient-rich food, and functional properties play an important role in reducing mal-nutrition and developing immunity. To overcome the biggest problems like hunger, and obesity; healthy food, diets, and improving food production with high nutritive value are the needs of the hour. Under such circumstances, traditional rice cultivars have rich sources of biological properties that help the growing population protect themselves.

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