

Aromatic and medicinal rice varieties of Kerala

Kerala was once rich with traditional rice varieties that grow in various agro-climatic conditions of the state. More than 2000 traditional rice varieties including scented and medicinal varieties contribute much variation to India's bowl of rice diversity. But many of these varieties are not cultivated any more owing to the drastic reduction of paddy cultivation in the state.

According to a recent study conducted by Kerala State Biodiversity Board; 55 local paddy varieties have disappeared from Wayanad district of Kerala which was once rich in indigenous paddy varieties. Kerala State Biodiversity Board is initiating activities for in-situ and ex-situ conservation of these varieties. Establishment of seed banks, promoting the cultivation of indigenous varieties and awareness programmes will be launched as part of this. Traditional rice varieties having good qualities and requiring less care are considered superior compared to modern rice.

GENERAL CHARACTERISTICS OF THE AROMATIC AND MEDICINAL RICES OF KERALA

Gandhakasala - Duration 150-180 Days, Straw colored, small, round grains, aromatic with white kernel, Suitable for transplanting during Khariff Season.

Jeerakasala - 150-180 Days, Straw colored, slightly longer and slender grains, aromatic with white kernel, Suitable for transplanting during Khariff Season.

Velumbala - 180 Days, White long slender grains, aromatic with white kernel. Suitable for transplanting during Khariff Season.

Chomala - 165-180 Days, Small, slender reddish straw colored grains, Suitable for direct seeding in uplands.

Kayama - 150-180 Days, Straw colored, small, round grains, aromatic with white kernel Suitable for transplanting during Khariff.

Kothampala - 120-130 Days, Small, slender, black grains with white kernel, Aromatic, Suitable for Khariff.

Pookkilathari - 130-135 Days, Small, slender, straw colored grains, Aromatic with white kernel, Suitable for transplanting in

“palliyals”(single crop terrace lands) during Rabi.

Njavara -(Navara)-70-75 Days, Plants tall, lanky lodging Panicles are short to medium in length. Suitable for Khariff crop in uplands and summer crop in wetlands. Yellow and black glumed types occur. The yellow type has golden yellow lemma and palea white it is black in the other. Seed coats are brown in color, endosperm non waxy and grains non-scented.

Chennellu -120-125 Days, Yellow and red glumed types occur. The yellow type has golden yellow grains with purple apiculus while the red type has bright red grains. Seed coats are brown in color, endosperm non waxy and grains non-scented. Red type is grown in coconut gardens during Khariff season while yellow type is grown in wetlands during Khariff and Rabi. Kavungin poothala-150-160 Days, Photosensitive, Long slender white grains Suitable for Rabi crop.

GI-INDICATION FOR KERALA RICE VARIETIES

Jeerakasala, Gandhakasala, palakkada matta, Navara, and Pokkali rice varieties of Kerala has been registered under the Geographical Indications of Goods (Registration & Protection)

JEERAKASALA

Wayanad is the land of hills and deep valleys. Annual rainfall in these high rainfall areas range from 3000-4000 mm. Jeerakasala Rice is a popular traditional aromatic rice cultivar of Wayanad. This scented, non-basmati rice is famous for its characteristic fragrance and aroma. The pleasant flavor and aroma of wayanad Jeerakasala rice fetches a premium price in the market. The average grain yield of Jeerakasala is 20-27t/ha and straw yield is 4.0t/ha. The plants are tall and weakly photosensitive, susceptible to lodging and tolerant to pests and diseases. The average plant height of Wayanad Jeerakasala cultivar is 130-140cm with lesser no. of tillers (average 7-8 tillers) and very long panicles (27-31cm) with 130 to 150 grains which are short awned, medium in size and shape (slightly elongated) with golden yellow color for the hull.

For better aroma, the crop is raised in the Nancha season (winter season) so that flowering coincides with the coldest months of November & December. It is mainly cultivated in kundu vayals (deep fields). The faunal diversity associated with paddy fields is rich and plays a significant role in controlling harmful insects and

pests. Sixteen species of birds have been reported from these paddy fields. The diversity of fish is also reported to be high in kundu vayals.

GANDHAKASALA

Gandhakasala Rice is a long duration variety with tall plants and has a low grain yield of 2.0-2.7 tonnes per hectare. It is mainly cultivated organically. Gandhakasala Rice cultivar is 150 to 155cm with lesser no. of tillers (average 6 to 8 tillers) and very long panicles (27-28.4cm) with 105 to 110 small, short bold, awnless golden yellow colored grains. This is a tall variety with weak straw and is susceptible to lodging. The thousand grain weight is only 15 to 18.9 grams owing to small grains. As per the traditional almanac of Kerala this variety is planted during “Thiruvathira Njattuvela”. Thiruvathira Njattuvela, starting during month of June gives equal amount of rain and sun, favorable for farming.

The grains are very short in size compared to other popular aromatic rice varieties like Basmati as well as the common rice varieties of Kerala. The grains have an appealing golden yellow color. The length of the rice grain ranges between 4 to 4.8mm coming to the international classification of short bold. This paddy requires specialized mills with rubber hullers for getting high head rice (unbroken grains) recovery. The cultivar has tolerance to pests and diseases. For better aroma, the crop is raised in the Nancha season and is also cultivated mainly in kundu vayals (deep fields)

Jeerakasala, Gandhakasala varieties are mainly used for preparation of special dishes like “Ghee Rice or Neichoru” prepared for marriages and festivals and also for the preparation of sweet items like “payasam”. Gandhakasala rice is also used for poojas and marriage feasts of tribal communities.

NAVARA RICE

Though the bulk of the wide variability in medicinal rice grown in Kerala are lost, some rice varieties are still grown by farmers for their medicinal properties, which include Njavara, Chennellu, Kunjinellu, Erumakkari, karuthachembavu and kavungin poothala.

Navara is used as a nutritional rice and health food. Reference of Navara as “Sashtika rice” are found in ancient ayurvedic scriptures like “Susruta Samhita”, dating back approximately to 400-200 B.C. and in “Ashtanga Hrudaya” dating back approximately to 600 A.D. Navarakizhi and Navaratheppu are two major treatments

in Ayurveda for conditions such as arthritis, paralysis and neurological disorders.

Navara is often referred to as “pious grain” used on auspicious occasions. Before sowing seeds are soaked in water for 12 hours and then taken out and kept in gunny bags rightly tied. Covered with hay and kept for 3-4 days till sprouts emerge. Tribal communities treat the seeds by exposing it to fog and sun light. In the meantime moisture in the gunny is maintained by sprinkling water 2-3 times a day over the hay cover. This seed is sown directly in puddle plots. The crop matures in very short duration (90 days). Paddy is harvested manually. Navara is medicinal rice and the cultivation has to be organic.

PALAKKAD MATTA

Palakkad matta rice is cultivated traditionally in Palakkad District of Kerala and has very high content of nutrients and is very unique in taste and color. Under GI registry there are 10 varieties of Palakkad Matta-Aryan, Aruvakkari, Chitteni, Chenkashama, Chattadi, Thavalakkannan, Eruppu, Poochamban, Vattan Jyothi and Kunju kunju. It is a coarse variety of rice with bold grains and red pericarp. The rice has got a unique taste. The coarse rice with red pericarp by itself ensures high content of nutrients. “Par-boiling” of the rice further ensures retention of nutritional value. It is also rich in fiber.

The grains are grown on unique black cotton soil, derived from rocks rich in lime, peculiar to Palakkad. It is also cultivated in “Poonthalapadam” where the soil is heavy, containing 60-80% of clay and silt and possessing low permeability and having high water holding capacity. These soils, the humid weather of Palakkad, easterly winds that blow through the Palakkad gap, the rivers that flow from the Western Ghats and the bright sunshine determine the unique taste and quality of the Kerala Matta Rice. Traditionally these varieties have been used in preparations of rice-snacks like “Kondattam”, “Murukku” etc.

POKKALI RICE

Pokkali varieties and cultivars are world famous for their salinity tolerance and are highly valuable as gene donors in international rice improvement programmes for salinity tolerance. Pokkali rice is believed to have medicinal properties. Characterization studies revealed that Pokkali rice is medium bold in shape,

with very good cooking quality, special taste, average protein (7.5 – 8.5%) and intermediary amylase (> 20%) content. Pokkali rice has intermediate gelatinization temperature with a hulling percentage of more than 80, milling percentage of more than 75. The Pokkali system of rice cultivation in the acid saline soils of Kerala is a unique method of rice production. In this method, a single-crop of rice is taken in the low saline phase of the production cycle (June to mid- October) on mounds, to be followed by prawn farming during the high saline phase (November to April). A noteworthy feature of this traditional rice cultivation method is that neither chemical fertilizers nor plant protection chemicals are applied in the field. The Pokkali fields are also subjected to periodic submergence. The daily tidal inflows and outflows, besides the tremendous microbial activity owing to the presence of large quantities of organic matter (decomposed aquatic weed mass and paddy stubbles), make the pokkali fields particularly fertile. Despite this, the average rice yield realized by pokkali farmers is only 2000 kg ha.

KUTTANADU AGRO-ECOSYSTEM GETS GIAHS STATUS

A unique system of rice production is practiced in the rice bowl of the state extending from Kuttanad in the South to the Kole lands of Thrissur in the North. Being low-lying estuarine lands, these areas are subjected to floods during the two monsoon periods. One crop of rice followed by one crop of fish is practiced here now. The FAO has recognized Kuttanad as a Globally Important Agricultural Heritage System (GIAHS).

Vembanad-Kole-Wetland-System, one of the three Ramsar sites in Kerala, is the largest estuarine system of the western coastal wetland systems. The total area of this wetland system is 1521.5 sq.km. The VKW is a complex aquatic system of coastal backwaters, lagoons, paddy fields, marshes, mangroves and reclaimed lands, with intricate networks of natural channels and man-made canals. These are rich with floral and faunal diversity. About 91 species of resident/local migratory and 50 species of migratory birds are found in the Kole area. The birds come here from different regions for nesting and feeding.



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