



एक कदम स्वच्छता की ओर



NRRI Rice Varieties for Enhanced Productivity and Ensured Food Security in India



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An ISO 9001 : 2015 Certified Institute

Rice is the staple food for 65% of Indian population. The country has world’s largest area (43 million ha) and second highest production (110 million tons) of rice. ICAR-National Rice Research Institute (NRRI) has released 133 varieties including hybrids of rice so far. Currently, 55 NRRI varieties are indented for breeder seed production nationally. India grows NRRI varieties in 18% of its rice area with 17% of rice production and Rs. 48,643 crores gross return annually.

Rice for national food and nutrition security

Rice is the staple food for about 800 million (65%) population of India. The country grows rice in 43 million ha (Mha) with production of 110 million tons (Mt) of milled rice and average productivity of 2.6 t ha⁻¹. The crop is grown in highly diverse conditions ranging from hills to coasts. Primarily a kharif crop, it is cultivated round the year in one or the other parts of the country. Area under rice has remained almost unchanged over the years, but production has increased more than five times (Fig. 1). With this, India has not only achieved self-sufficiency in rice but also exports around 10 Mt annually.

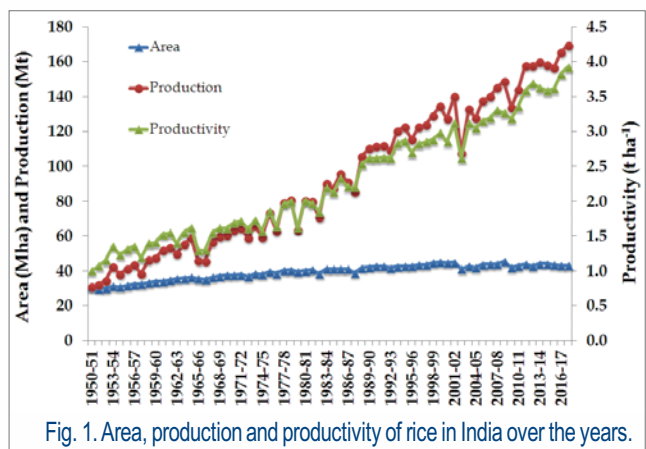


Fig. 1. Area, production and productivity of rice in India over the years.

NRRI in service of rice farmers

ICAR-National Rice Research Institute (NRRI), formerly the Central Rice Research Institute (CRRI), the first rice research Institute in the world, was established at Cuttack, Odisha in 1946. The Institute has released 133 rice varieties including hybrids so far (Fig. 2). About 13% of the rice varieties of

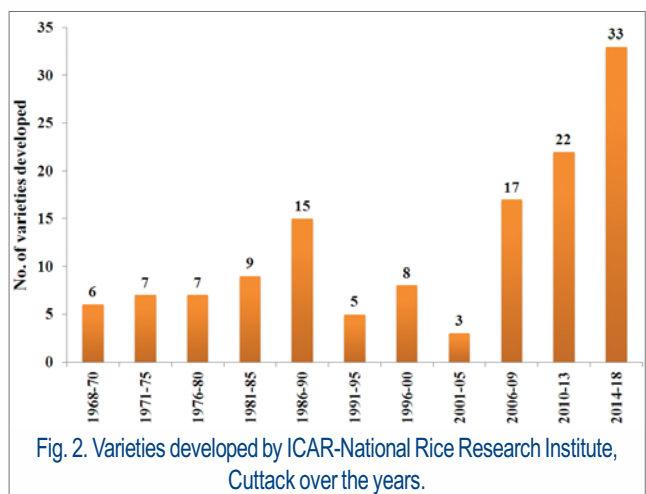
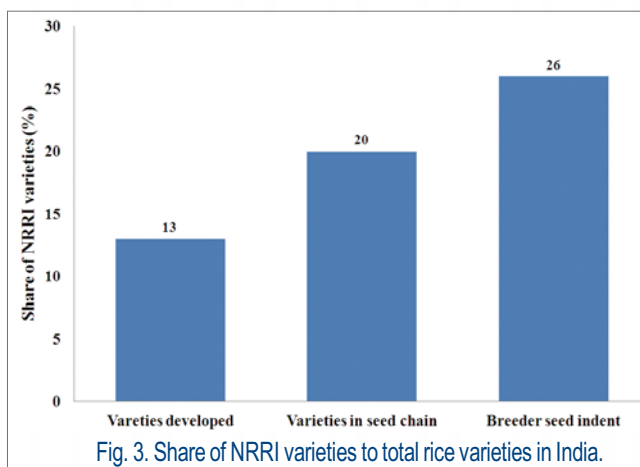


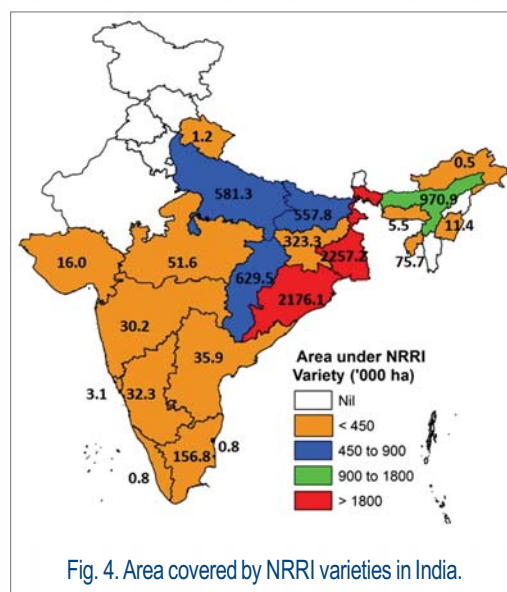
Fig. 2. Varieties developed by ICAR-National Rice Research Institute, Cuttack over the years.

the country have been released by NRRI. Currently, 55 NRRI varieties i.e., 20% out of 250 in the country are indented for breeder seed production through Department of Agriculture and Cooperation (DAC), Ministry of Agriculture and Farmers' Welfare, Govt. of India. The Institute produces about 120 tons of breeder seed annually out of 460 tons i.e., 26% of the requirement of the country (Fig. 3).



NRRI varieties cover 18% of Indian rice area

Area covered by NRRI varieties in the country during 2017-18 based on the amount of quality seeds provided to the farmers was estimated through the following ways: breeder seed indent to the DAC; breeder seed and truthfully-labeled seed supplied by the NRRI farm; participatory seed production by NRRI; seed distributed in various programmes and projects of the Institute; front-line demonstrations and on-farm testing; seed of NRRI varieties supplied by the private entrepreneurs and disseminated from farmers to farmers. A survey was conducted during July-August, 2018 to validate the estimated area. The District Agriculture Officers of Odisha and West Bengal provided the data on coverage of NRRI varieties in their respective districts. Additionally, an expert consultation was organized to validate the estimates.



Out of 43 Mha, NRRI varieties covered about 8.0 Mha i.e., 18.0% of rice area of the country during 2017-18 (Fig. 4). The leading states growing NRRI varieties are West Bengal (2.25 Mha), Odisha (2.17 Mha) and Assam (0.97 Mha). Other states with sizable area under NRRI varieties include Uttar Pradesh, Tamil Nadu, Andhra Pradesh, Bihar, Jharkhand and Chhattisgarh. The NRRI varieties have been popular among the farmers and even become ruling varieties in some of these states. For example, Shatabdi is a leading variety in West Bengal, Pooja in Odisha, Naveen in Assam and Tripura, and Savitri in Tamil Nadu.

NRRI varieties produce 17% of Indian rice

Annual production of rice with NRRI varieties in the country is 18.5 Mt i.e., 17% of total production (Fig. 5). Rs. 48,643 crores gross return i.e., 13% of India's gross return from rice is generated with NRRI varieties. Annual incremental production of rice with NRRI varieties is 1.4 Mt with incremental gain in farmers' income is Rs. 2,432 crores.

Aspirations of NRRI to serve rice farmers better

ICAR-NRRI has contributed immensely to country's Green Revolution, ensuring food security and enhancing farmers' income. For ensuring nutritional security, the Institute has recently released, first time in the world, two high-protein (more than 10.0% protein) rice varieties (CR Dhan 310 and CR Dhan 311). Two climate-smart varieties (CR Dhan 801 and CR Dhan 802), which are tolerant to both submergence and drought and few biotic stresses have also been released, again for the first time in the world, to face the challenges of climate change. The Institute is striving hand on to develop and popularize super-yielding (more than 10 t ha⁻¹) varieties and agro-technologies for higher productivity, profitability, climate resilience and sustainable rice production systems.

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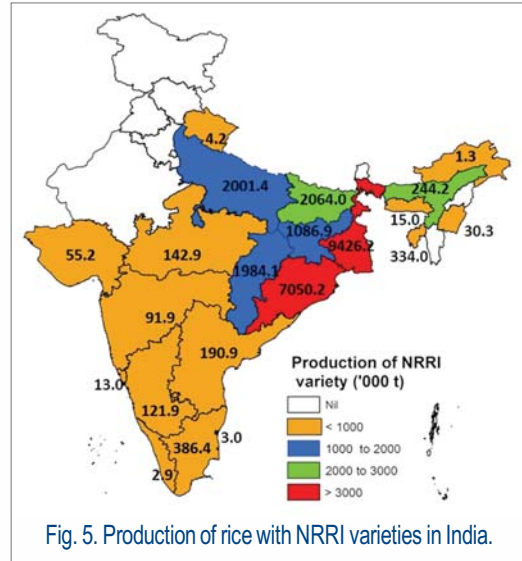


Fig. 5. Production of rice with NRRI varieties in India.



Institute received ICAR Best Annual Report Award 2016-17.

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