Trait-Specific Rice Germplasm Registered with NBPGR

Prepared by

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Trait-Specific NBPGR-Registered Rice Germplasm

The conservation and recognition of rice genetic resources are fundamental to sustaining crop improvement and ensuring long-term food and nutritional security. The ICAR-Central Rice Research Institute (ICAR-CRRI), Cuttack, is a premier institution dedicated to the collection, conservation, characterization, and utilization of diverse rice germplasm in India. Many of these valuable genetic resources are formally recognized through registration with the National Bureau of Plant Genetic Resources, New Delhi, the nodal agency responsible for the documentation and conservation of plant genetic resources in the country.

A registered variety, commonly referred to as Registered Germplasm (REGV), is a plant genetic resource officially acknowledged by NBPGR for possessing unique, stable, and heritable traits of scientific, agronomic, or socio-economic importance. Unlike released or notified varieties intended for commercial cultivation, REGV accessions typically include landraces, farmers' varieties, elite breeding lines, and wild relatives. Registration assigns a unique REGV number, ensuring proper documentation, national recognition, and protection of these valuable genetic materials while facilitating their use in future breeding programs.

The ICAR-CRRI gene bank conserves a rich repository of rice diversity, including traditional landraces, elite breeding materials, and wild species such as *Oryza nivara* and *Oryza rufipogon*. Many NBPGR-registered germplasms exhibit valuable traits such as tolerance to abiotic stresses including drought, submergence, salinity, and anaerobic germination as well as resistance to major pests and diseases like bacterial leaf blight, blast, brown planthopper, and tungro virus. Additionally, several accessions possess superior grain quality, aroma, and enhanced nutritional attributes such as high zinc and iron content, supporting biofortification initiatives.

The registration process involves detailed characterization and evaluation to validate the distinctiveness of the germplasm. These registered resources serve as vital donor parents in breeding programs aimed at developing high-yielding and climate-resilient rice varieties suitable for irrigated lowlands, rainfed uplands, and coastal saline ecosystems. In conclusion, the registration of rice germplasm from ICAR-CRRI with NBPGR safeguards India's rich genetic heritage and strengthens sustainable rice improvement for future food and nutritional security.

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NBPGR-REGISTERED RICE GERMPLASM CONSERVED AT ICAR-CRRI, CUTTACK AND THEIR IMPORTANT TRAITS

Sl. No.	Name of Germplasm	Photo	Year of Reg.	Reg. No.	Important Trait	Name of Contributors
1	Khoda (PD -27)		2004	INGR No.04001	Tolerance to complete submergence	B C Patra & Ramani Kumar Sankar
2	T-1471 (Kodiyan)		2005	INGR No.05001	Tolerance to anaerobic seeding	B C Patra & Ramani Kumar Sankar
3	Khadara (PD33)		2008	INGR No.08108	Tolerance to complete submergence	B C Patra, R K Sarkar,
4	Atiranga (RM5/232)		2008	INGR No.08109	Tolerance to complete submergence	Sasank Sekhar Chyaupatnaik, B C Marndi, P Swain
5	Kalaputia (PCP-01)		2008	INGR No.08110	Tolerance to complete submergence	Sasank Sekhar Chyaupatnaik, B C Marndi, P Swain
6	Gangasiuli (PB-265)		2008	INGR No.08111	Tolerance to complete submergence	Sasank Sekhar Chyaupatnaik, B C Marndi, P Swain
7	Kusuma (PD-75)		2008	INGR No.08113	Tolerance to complete submergence	Sasank Sekhar Chyaupatnaik, B C Marndi, P Swain
8	Mahulata (PB-294)		2008	INGR No.08112	Tolerance to Vegetative stage drought	Sasank Sekhar Chyaupatnaik, B C Marndi, P Swain

9	Medinapore (RM5/AK-225;IC-0258990)		2010	INGR No.10147	Tolerance to complete submergence	Crri, Cuttack
10	Andekarma (JBS-420; IC-0256801)-		2010	INGR No.10148	Tolerance to complete submergence	Crri, Cuttack
11	Champakali (IC-0258830)		2010	INGR No.10149	Tolerance to complete submergence	Crri, Cuttack
12	Brahman Nakhi (DPS-3)		2010	INGR No.10150	Tolerance to Vegetative stage drought stress	Crri, Cuttack
13	Sal kaiin (PB-78; IC-0256590)		2010	INGR No.10151	Tolerance to Vegetative stage drought stress	Crri, Cuttack
14	Bhundi (JRS-9; IC0575277; AC42091)		2014	INGR No.14025	Tolerance to complete Submergence and having shoot elongation ability	R K Sarkar, Devendra Pratap Singh, Bijaya Bhattacharjee, B C Patra, B C Marndi
15.	Kalaketki (JRS-4; IC0575273; AC42087)		2014	INGR No.14026	Tolerance to 20 days complete submergence	R K Sarkar, Devendra Pratap Singh, Bijaya Bhattacharjee, B C Patra, B C Marndi
16.	CR 143-2-2 (IC0513420)		2017	INGR No.17019	Tolerance to both vegetative and reproductive stage drought stress	P Swain, On Singh, Mj Baig, N P Mandal
17	Salkathi (AC-35181; PB-289)		2018	INGR No.17069	Resistance to brown plant hopper (BPH)	Mayabini Jena, B C Patra, B C Marndi, D R Pani, Rabindra Kumar Sahu

18	CherayiPokkali (AC 39416A; IC0413644)		2019	INGR No.19004	Combined stress of drought and salinity	R K Sarkar, Koushik Chakraborty, K Chattopadhyay, B C Marndi, B C Patra
19	Khora-1(AC 41620; IC0574806)		2019	INGR No.19006	Anaerobic Germination	R K Sarkar, Koushik Chakraborty, K Chattopadhyay, B C Patra
20	Dhobanumberi (IC 0256804)		2019	INGR No.19005	Resistant to BPH	Mayabini Jena, R K Sahu, B C Patra, B C Marndi, Trilochan Mohapatra
21	Kamini (AC 44118; IC 599610		2019	INGR No.19033	Tolerant to salinity stress	RK Sarkar, K Chakraborty, K Chattopadhyay, B C Marndi
22	Talmugur (AC 43228; IC 0596460)		2019	INGR No.19034	Tolerant to salinity stress at vegetative stage	K Chattopadhyay, B C Marndi, A K Nayak, M J Maitra, K Chakraborty
23	Chettivirippu (AC39394; IC 0599610)		2019	INGR No.19035	Tolerant to salinity stress both at vegetative and reproductive stage	K Chattopadhyay, B C Marndi, K Chakraborty, B C Patra, R K Sarkar
24	*IC 121865		2019	INGR No.19037	Resistant to blast disease	R Bansal, Nk Goutam, Lv Subharao, M Srinivas Prasad, H Rajshekara, B C Patra, M Variar, A Ramanathan, K Srinivasan,V Devis., Jc Rana, A Kumar
25	*IC 199562		2019	INGR No.19038	Resistant to blast disease	Ruchi Bansal, Nk Goutam, Lv Subharao, M Srinivas Prasad, H Rajshekara, B C Patra, M Variar, A Ramanathan, Kalyanisrinivasan, Vimala Devi S., Jc Rana, Ashok Kumar

26	AC 42997 (IC0576152)		2021	INGR No. 21002	Vegetative stage drought tolerance, prolific roots. High water use efficiency	P Swain, Mj Baig, Goutam Kumar Dash, B C Patra, Madhusmita Barik, Ruchi Bansal
27	Wild rice: *Oryza nivara* (IC330611)		2021	INGR No. 21003	Vegetative stage drought tolerance, prolific roots. High water use efficiency	B C Patra, P Swain, B C Marndi, L K Bose, Gak Kumar, Ruchi Bansal
28	Wild rice: *Oryza nivara* (IC330470)		2021	INGR No. 21004	Vegetative stage drought tolerance.	B C Patra, P Swain, B C Marndi, M J Baig, L K Bose, S R Dhua, Gak Kumar, Ruchi Bansal
29	Dubaraj (IC301206)		2021	INGR No. 21005	Very high 1000-grain weight. Long grain rice (LGR).	B C Patra, Kalyani Srinivasan, Vimala Devi S, T Mohapatra, A K Tyagi, J Thakur
30	ARC 10075 (Minatik Charang) (IC 0597237)		2021	INGR No. 21092	High protein content rice	T B Bagchi, K Chattopadhyay, B C Marndi, A Kumar,L K Bose, P Swain, B C Patra, Sg Sharma, R Bansal
31	CRR747-12-3-B (IET26337)		2021	INGR No. 21114	Highly drought tolerant elite line. Resistant to blast disease	N P Mandal, Somnath Ray, Amrita Banarjee
32	Rahaspunjar (IC-575321; AC 42138)		2021	INGR No. 21116	Tolerant to salinity stress. Tolerant to stagnant flooding (both fresh and saline water). Has high anaerobic germination potential	Koushik Chakraborty, K Chattopadhyay, B C Patra, B C Marndi, P Swain, R K Sarkar
33	Remeni Pokkali (AC 41585)		2021	INGR No. 21117	Tolerant to salinity at vegetative stage (12 dS m1). Tolerant to salinity at reproductive stage (8 dS m-1).	Koushik Chakraborti, K Chattopadhyay, B C Patra, B C Marndi, P Swain

34	CRR 363-36 (IET 19251)		2021	INGR No. 21177	Aromatic early maturing rice elite line for rainfed uplands	N P Mandal, Somnath Ray, Amrita Banerjee
35	Kalakeri		2021	INGR No. 21179	A rice landrace with tolerance to Drought and other abiotic stresses	N P Mandal, Somnath Ray, Amrita Banerjee, P Swain, B C Patra
36	RR 433-2-1 (IET 19252)		2021	INGR No.21178	A drought tolerant high yielding elite line for rainfed direct seeded upland conditions	N P Mandal, Somnath Ray, Amrita Banerjee
37	Dular		2022	INGR No. 22107	A rice cultivar with tolerance to multiple abiotic stresses	S Ray, K Chakraborty, N P Mandal, A Banerjee, P Swain, Priyamedha, B C Patra
38	AC43037 (Gurum)		2022	INGR No.22110	Multiple Abiotic Stress (Drought, Salinity, Submergence & Anaerobic Germination) Tolerant	P Swain, K Chakraborty, M J Baig, G K Dash, M Barik, A K Debata, B C Patra
39	AC43012 (Chariesid)		2022	INGR No.22108	Drought Tolerant Rice Germplasm with low transpiration and high WUE	P Swain, K Chakraborty, M J Baig, G K Dash, M Barik, A K Debata, B C Patra
40	AC43025 (Dudha Charisda)		2022	INGR No.22109	Multiple Abiotic Stress (Drought, Salinity, Submergence & Anaerobic Germination) Tolerant Rice Germplasm	P Swain, K Chakraborty, M J Baig, G K Dash, M Barik, A K Debata, B C Patra
41	Bindli (AC33015) - IC-0642852		2022	INGR22066	Low phytic acid in grain (0.83g/100g). High Zinc content in grain (59.1 mg/kg)	A Kumar, S Sharma, P Swain, R P Sah, M Azharudheen TP and B C Patra
42	Black Gora (IC0640862)		2023	INGR No.23004	Tolerant to submergence with high anaerobic germination potential.	S Ray, K Chakraboty, N P Mandal, A Banerjee, Priyamedha, B C Verma, B C Patra

43	IET 28033 (CRR751-1-12-B-B)		2023	INGR 23073	Tolerance to reproductive stage drought stress, Tolerance to submergence, Resistance to blast disease	Np Mandal, Priyamedha, S Roy, A Banerjee, K Chakraborty, D Bhaduri, A Anupam and Nk Singh
44	Mamihunger (AC43160)		2023	INGR 23121	High Total anthocyanin content, High total gamma oryzanols, High Total Phenolic content, High total flavonoid content, High ABTS activity of Germplasm and Low phytic acid content	P Sanghamitra, A Das, S G Sharma, K Chattopadhyay, T B Bagchi, S K Pradhan, S Sarkar, N Basak, G Kumar, Reshmi Raj KR, L K Bose, H Subudhi, J Meher and B C Marndi
45	CR4423-17		2025	INGR25005	Osmotic Tolerance/ drought tolerance with 16% reduction in shoot dry weight at 1% mannitol and 22.5% at 2% Mannitol. High anaerobic germination potential, anaerobic germination index = 60.6%, epicotyl length= 18.6 cm. Salinity tolerance with visual salt injury score =5.	Sanghamitra Samantaray, K Chattopadhayay Parameswaran C.Devanna Bn, Rl Verma, K Chakraborty, Jl Katara, Baijyanti Nayak, Prachitara Rout, Ss Bhuyan, Byomkesh Dash,
46	AC-34975/ ChadheinakhiPB-56		2025	INGR25043	Least reduction in root dry weight (0.02gm) and Enhancement in shoot dry weight (0.06gm) under drought stress 12.8 % mean leaf chlorophyll content enhancement under salinity stress Least reduction in shoot dry weight (0.03gm) under salinity stress	Prashantkumar S Hanjagi, Sushma M Awaji, Bishnu Charan Marndi, Repudi Shalem Raju, M J Baig And Ak Nayak

47	CRAC4423-14 (F1 s of SavitriXPokkali)		2025	INGR25044		Sanghamitra Samantaray, Parameswaran C, Koushik Chakraborty, Priyadarsini Sanghamitra, Ramlakhan Verma, Devanna BN, Jawahar Lal Katara, Prachitara Rout and Sudhansu Sekhar Bhuyan
48	Binnaful (EC1076003)		2025	INGR25045	Tolerant to osmotic stress (4.0 bar Mannitol induced) – High shoot weight (0.055g) and high chlorophyll content (2.2 mg/100g) Highly tolerant to anaerobic germination (germination rate = 65.5%, high epicotyl length 35 cm) Tolerant to salinity (NaCl induced 12 dSm-1) lowest decline in root biomass (10.49%), High chlorophyll content (1.0 mg g-1 FW), high shoot growth. Salt injury score 5.0 (moderate)	Koushik Chakraborty, Somnath Roy, NP Mandal, BC Verma, Amrita Banerjee, Debarati Bhaduri, Priyamedha, Puranjoy Sar And Motilal Behera

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