

PATNA

Agricultural Research Institute (ARI) Rajendra Agricultural University, Pusa, Samastipur Bihar

This institute was established in 1973 under Rajendra Agricultural University, Pusa, Samastipur, Bihar. The objective of this station is to identify/ develop varieties suitable for irrigated medium and rainfed shallow ecologies.



Major Contributions to AICRIP

Crop Improvement - Plant Breeding

Rice variety developed.			Rice variety adopted		
Sl. No	Name of Variety	Year	Sl. No	Name of Variety	Year
1.	Pankaj	1971	1.	Cauvery	1971
2.	Sita	1972	2.	Bala	1971
3.	Panidhan 1	1972	3.	Ratna	1971
4.	Panidhan 2	1972	4.	IR 20	1971
5.	RajendraDhan 201	1979	5.	Mahsuri	1971
6.	RanjendraDhan 202	1979	6.	Milinj	1971
7.	Jaishree	1981	7.	Jagannath	1971
8.	Sungandha	1983	8.	Deepa	1972
9.	Janki	1983	9.	Archana	1972
10.	Sunjata	1984	10.	Saket - 4	1972
11.	Randha	1984	11.	Narsingh	1972
12.	Kanak	1987	12.	Vishnu	1972
13.	Shakuntla	1995	13.	IR 36	1983
14.	RajendraMahsuri - 1	2003	14.	Pusa Basmati - 1	1994
15.	RajendraSweta	2004	15.	RajendraBhagwati	2005
16.	SabourSurbhit	2012	16.	Swarna sub - 1	2005
17.	Sabour Shree	2014	17.	Sabour Deep	2014
			18.	SabourArdhjal	2014

- Several rice varieties were developed from the center and released through AICRIP. The following varieties were developed/ identified from this center:

Promising Elite Rice Lines in advance Stage

IET No.	Designation	Grain Type
18620	RAU 678-82-4	LS
19924	RAU 637-99-52	MS
20248	RAU 759-5-41	LS
20766	RAU 731-2-20	MB
	Kalanamak Mutant	Fine slender scented



Sabour shree



RAU 637-99-52

- Breeder Seed Production: Around 2000 qts of Breeder Seed of the varieties Sita, Sujata, Kanak, Rajendra Mahsuri – 1, Rajendra Sweta, Sugandha, Subhasini, Kasturi etc. were produced as per the indent.

Crop Production

Agronomy

- Agro-technologies on different aspects like NVT, Cultural management, Weed management, Rice based cropping systems, etc. were developed/ fine-tuned as per farmer's needs of the state. The major contributions include:
- *System of Rice Intensification (SRI)*: SRI was found significantly superior crop establishment method for irrigated well drained land. This is a technique for transplanting 10 days old rice seedling with single seedling per hill in wider spacing (25 x 25 cm) having specific nutrient, water and weed management.
- Hybrid Rice: Hybrid rice varieties PHB 71 and KRH-2 were found suitable for Bihar conditions. Application of 150N + 60P + 60K kg/ha produced higher grain yield. Cyclic submergence i.e. saturation maintained in the field and

before hair crack stage water given up to 2 cm depth was found significantly superior water management method.

- Weed Management: Among the new herbicides tested, Penoxlan 24 SC @ 0.025 kg a.i. ha⁻¹, Bensulfuran-methyl 60 DF @ 0.05 kg a.i. ha⁻¹, Pretilachlor 50 EC @ 0.75 kg a.i. ha⁻¹, Almix 0.004 kg a.i. ha⁻¹, Bispyribac sodium @ 100 g LSC @ 35 g a.i. ha⁻¹ were found superior to control weeds in irrigated transplanted rice.
- Yield Maximization: A combination of recommended dose of NPK 80:40:20 kg ha⁻¹ + Zinc 25 kg ha⁻¹ + Sulphur 20 kg ha⁻¹ + Multiplex 0.5 % foliar application twice + Green Manuring (Sesbania rostrata) supplemented with either rice husk 50 q ha⁻¹ or deep tillage was found very effective in increasing grain yield significantly.
- DSR/ Aerobic Rice: DRR drum seeded rice crop fertilized with 80:40:20 NPK kg ha⁻¹ + 25 kg Zinc sulphate ha⁻¹ and weed control through Butachlore + one spot weeding gave highest grain yield. Technology for Dry Direct Seeded Rice (DSR) in Bihar has been developed and released by the University.

Crop Protection

- Rice Pathological and Entomological studies were carried out in the areas of Surveillance, Epidemiology, Evaluation of Germplasm/Cultivars and integrated management of location specific diseases like Bacterial blight, Sheath rot and Sheath blight and insect pests like BPH, Stem borer, Mealy bug, Leaf folder, Gundhi bug, etc.