

# BIRRI at a Glance



**Bangladesh Rice Research Institute**  
Gazipur 1701, Bangladesh

BR7 (Bribalam)	Aus	125	130	4.5	1977
	Boro	125	155	4.5	
BR8 (Asha)	Aus	125	125	5.0	1978
	Boro	125	160	6.0	
BR9 (Sufala)	Aus	125	120	5.0	1978
	Boro	125	155	6.0	
BR10 (Progati)	T. Aman	115	150	6.5	1980
BR11 (Mukta)	T. Aman	115	145	6.5	1980
BR12 (Moyna)	Aus	105	130	4.5	1983
	Boro	105	170	5.5	
BR14 (Gazi)	Aus	120	120	5.0	1983
	Boro	120	160	6.0	
BR15 (Mohini)	Aus	100	125	5.0	1983
	Boro	90	165	5.5	
BR16 (Shahiblam)	Aus	110	130	5.0	1983
	Boro	90	165	6.0	
BR17 (Hashi)*	Boro	125	155	6.0	1985
BR18 (Shahjala)*	Boro	115	170	6.0	1985
BR19 (Mongol)*	Boro	110	170	6.0	1985
BR20 (Nizami)	B. Aus	120	115	3.5	1986
BR21 (Niamat)	Aus	100	110	3.0	1986
BR22 (Kiron)	T. Aman	125	150	5.0	1988
BR23 (Dishari)	T. Aman	120	150	5.5	1988
BR24 (Rahmat)	B. Aus	105	105	3.5	1992
BR25 (Naya Pajam)	T. Aman	138	135	4.5	1992
BR26 (Sraboni)	Aus	115	115	4.0	1993
BIRRI dhan27	B. Aus	140	115	4.0	1994
BIRRI dhan28	Boro	90	140	5.0	1994
BIRRI dhan29	Boro	95	160	7.5	1994
BIRRI dhan30	T. Aman	120	145	5.0	1994
BIRRI dhan31	T. Aman	115	140	5.0	1994
BIRRI dhan32	T. Aman	120	130	5.0	1994
BIRRI dhan33	T. Aman	100	118	4.5	1997
BIRRI dhan34	T. Aman	117	135	3.5	1997
BIRRI dhan35	Boro	105	155	5.0	1998
BIRRI dhan36	Boro	90	140	5.0	1998
BIRRI dhan37	T. Aman	125	140	3.5	1998
BIRRI dhan38	T. Aman	125	140	3.5	1998
BIRRI dhan39	T. Aman	106	122	4.5	1999
BIRRI dhan40	T. Aman	110	145	4.5	2001
BIRRI dhan41	T. Aman	115	148	4.5	2001
BIRRI dhan42	Aus	100	100	3.5	2004
BIRRI dhan43	Aus	100	100	3.5	2004
BIRRI dhan44	T. Aman	130	145	5.5	2005
BIRRI dhan45	Boro	100	145	6.5	2005
BIRRI dhan46	T. Aman	105	124	4.7	2007
BIRRI dhan47	Boro	105	152	6.0	2007
BIRRI dhan48	Aus	105	110	5.5	2008
BIRRI dhan49	T. Aman	100	135	5.5	2008
BIRRI dhan50	Boro	82	155	6.0	2008
(Banglamoti)					
BIRRI dhan51	T. Aman	90	142 a	4.5	2010
			154 b	4.0	
BIRRI dhan52	T. Aman	116	145 a	5.0	2010
			155 b	4.5	

BIRRI dhan53	T. Aman	105	125	4.5	2010
BIRRI dhan54	T. Aman	115	132	4.5	2010
BIRRI hybrid dhan1	Boro	110	155	8.5	2001
BIRRI hybrid dhan2	Boro	105	145	8.0	2008
BIRRI hybrid dhan3	Boro	110	145	9.0	2009
BIRRI hybrid dhan4	T. Aman	112	118	6.5	2010

Note: a= if not submerged, b= if submerged for 14 days. \* For haor areas only.

## Recognition

BIRRI is honoured with the following prestigious national and international awards for its outstanding contribution to the science and technology.

- Bangabandhu Award in 1974
- President's Gold Medal in 1977
- Independence Day Gold Medal in 1978
- President's Gold Medal in 1980
- FAO Bronze Plaque in 1980
- President's Gold Medal in 1984
- Begum Zebunnesa and Kazi Mahbubullah Trust Gold Medal in 1986
- Dr Maniruzzaman Foundation Gold Medal in 1991
- Independence Day Gold Medal in 1992
- Independence Day Gold Medal in 1997
- Agriculturists Forum Gold Medal in 2004
- IRRI Plaque of Honour in 2005
- Senadira Rice Research Award in 2006
- Mathematics Olympiad Award in 2008
- National Environment Award in 2009

## Future Strategy

If the present population growth rate continues the demand for rice will be 25% higher than that of the present production level. BIRRI is committed to meet-up this demand to save the nation from hunger and has taken the following strategies to fulfil this commitment.

- Development of super high yielding rice varieties having 12-14 t/ha yield potential.
- Development of hybrid rice and its seed production technologies.
- Development of transgenic rice.
- Development of rice varieties for unfavourable ecosystems, viz-tolerant to cold, drought, submergence, salinity and resistant to insect-pests and diseases.
- Development of vitamin and iron-dense rice to fight against malnutrition.
- Development of export quality fine grain and aromatic rice.
- Development and refinement of crop, soil, water and pest management technologies for high yield targets.
- Development, improvement and extension of low cost appropriate farm machinery.
- Strengthening of technology transfer processes to achieve national rice production target. Strengthening of socio-economic and policy issues for poverty elimination by ensuring profits in rice cultivation for small and marginal farmers.

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## Background

Rice, as a staple food, accounts for about 92% of the total food grains produced in the country. Seventy-five percent of necessary calories and 55% of protein are met from rice in the average daily diet of the people. Rice production employs almost 44% of our labour forces providing national food security. Rice research started in this part of the sub-continent in 1910. However, the modern era of rice research and development started in the mid-sixties of the last century.

The demand for rice is increasing because of increasing population. So, to meet up the increasing food demand, an autonomous organization in the name of East Pakistan Rice Research Institute (EPRRI) was established on 1 October 1970 with 76.82 hectares of land at Joydebpur, Gazipur, 36 km north of Dhaka. After liberation in 1971, it was renamed as the Bangladesh Rice Research Institute (BIRRI) through the parliamentary act in 1973 (Act X of 1973). In order to bring dynamism in the management system, an amendment was made by a parliamentary act in 1996 (Act V of 1996).

The institute operates with 18 research divisions and nine regional stations, three support service divisions and five sections. Total manpower of the institute is 676, of which 238 are scientists. Most of them are highly trained professionals with MS and PhD degrees.

## Mandate

- Conduct research on all aspects of rice improvement and production;
- Establish research centers and substations in different regions of Bangladesh for conducting research on different problems of rice;
- Establish project areas for demonstration of new varieties of rice developed by the institute and organize training of farmers for the cultivation of these rice varieties;
- Train agricultural extension personnel and progressive farmers on modern techniques of rice production;
- Publish annual reports, monographs, bulletins and such other documents relating to research activities of the institute;
- Advise the government on rice related policy issues.

## Governance

BIRRI is an autonomous organization under the Ministry of Agriculture. A 13 member Board of Management (BOM) headed by the Director General determines and executes the policies and undertakings of the institute.

## Research Programme and Management

Eighteen research divisions at BIRRI HQ and nine regional stations across the country execute the research and technology development programme of BIRRI. Multi-disciplinary, problem orientated annual research programmes are developed and executed by involving all level of scientists. Research at BIRRI is organized in seven programme areas. Each of the area is composed of one or more research divisions called the programme performing units (PPU). The programme areas, component research divisions and regional stations are:

## Programme Area

Varietal Development

Crop-Soil-Water Management

Pest Management

Rice Farming Systems

Farm Mechanization

Socioeconomic and Policy

Technology Transfer

## Component Division/PPU

Plant Breeding, Biotechnology  
Genetic Resources and Seed  
Grain Quality and Nutrition

Agronomy, Soil Science  
Irrigation and Water Management  
Plant Physiology

Entomology, Plant Pathology

Rice Farming Systems

Farm Machinery and Postharvest  
Technology, Workshop Machinery and  
Maintenance

Agricultural Economics, Agricultural  
Statistics, Farm Management

Adaptive Research, Training

## BIRRI Regional Stations

Name	Establishment	Main research area
BIRRI RS, Barisal	1970	Tidal non-saline ecosystem
BIRRI RS, Habiganj	1970	Deep water ecosystem and Boro
BIRRI RS, Comilla	1970	Favourable ecosystem
BIRRI RS, Sonagazi	1977	Coastal ecosystem
BIRRI RS, Rajshahi	1978	Drought prone ecosystem
BIRRI RS, Bhanga	1986	Deep water ecosystem and Boro
BIRRI RS, Rangpur	1991	Cold and upland ecosystem
BIRRI RS, Kushtia	1996	Upland ecosystem of gangetic flood plain
BIRRI RS, Satkhira	1999	Saline ecosystem

Annual research programme is developed and finalized in three steps: a) Intra divisional meeting; b) Programme area meeting and c) Programme committee meeting. Annual research plans are prepared based on priority areas and implemented under the following ecosystems:

- Irrigated lowland
  - Rainfed lowland
  - Rainfed upland
  - Tidal wetlands (saline/non-saline)
  - Deepwater (floodprone)
- Transplant Boro  
Transplant Aman  
Broadcast/dibbling Aus  
Rainfed Aus and T. Aman  
Broadcast Aman

After finalization, the research programme is executed by the programme performing units at the HQ, regional stations and at the farmers' field. The concerned heads of the research divisions monitor the programme approved for the execution. In addition, Director (Research) and the Director General supervise the overall research activities of the institute. Thereafter, results of the executed programme are presented in the Annual Research Review Workshop, where all the scientists of the institute and expert members from other institutions take part as a final evaluation process.

Director Research is the chief coordinator of all research activities of the institute assisted by a Coordinator for Advanced Studies and Research (CASR).

## Major Achievement

BIRRI has so far -

- Released 57 high yielding rice varieties having two-three times higher yield potential than traditional rice. Among them 53 are inbred and four are hybrid rice (Table 1).
- Developed more than 50 improved technologies on soil, water, fertilizer and cultural practices of rice.
- Developed 31 profitable rice-based cropping patterns for different AEZs.
- Developed and improved 22 agricultural machinery.
- Identified 31 rice diseases (10 major) and 175 species of rice insect-pests (20 major), and developed control measures for the major insects and diseases.
- Preserved more than 8,000 rice germplasm in the BIRRI Gene Bank collected from home and abroad.
- Trained more than 56,000 scientists, progressive farmers and extension personnel from GOs and NGOs.
- Published 240 books, booklets, monographs, folders and extension materials for technology dissemination.
- Achieved the ability to produce about 100 tons of breeder seed per year, and supply it to different seed producing agencies for further multiplication and dissemination at the farm level.

## Impact

The impacts of BIRRI are as follows:

- During the last four decades, rice production has tripled synchronizing with the increase of population.
- In 1970, population of our country was 71.21 million that has increased to about 160 million over four decades and clean rice production has increased up to three times.
- In 1970, total rice area was 10.31 million ha and clean rice production at that time was about 10 million ton (MT). In 2009-10, total rice area in three seasons reached to about 12 million ha, mainly due to increased cropping intensity, and clean rice production reached to about 34 MT.
- At present, BIRRI varieties cover more than 80% of rice area and account for about 90% of the total annual rice production of the country.
- Return rate of one taka investment in rice research and development is Tk 38.
- A number of BIRRI developed rice varieties are cultivated in different countries of the world.

Table 1. BIRRI released rice varieties from 1970 to 2010.

Rice variety	Growing season	Plant height (cm)	Growth duration (day)	Average yield (t/ha)	Releasing year
BR1 (Chandina)	Aus	88	120	4.0	1970
	Boro	88	150	5.5	
BR2 (Mala)	Aus	120	125	4.0	1971
	Boro	120	160	5.0	
BR3 (Biplob)	Aus	100	130	4.0	1973
	T. Aman	100	145	4.0	
	Boro	95	170	6.5	
BR4 (Brisail)	T. Aman	125	145	5.0	1975
BR5 (Dulabhog)	T. Aman	120	150	3.0	1976
BR6 (IR28)	Aus	113	110	3.5	1977
	Boro	100	140	4.5	