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# BARI Annual Report 2023-24

## Bangladesh Agricultural Research Institute


মোহাম্মদ রাসেল
বৈজ্ঞানিক কর্মকর্তা (পরিসংখ্যান)
কৃষি পরিসংখ্যান এবং আইসিটি বিভাগ
বিএআরআই, গাজীপুর-১৭০১

নূর মোহাম্মদ (BARI0653)
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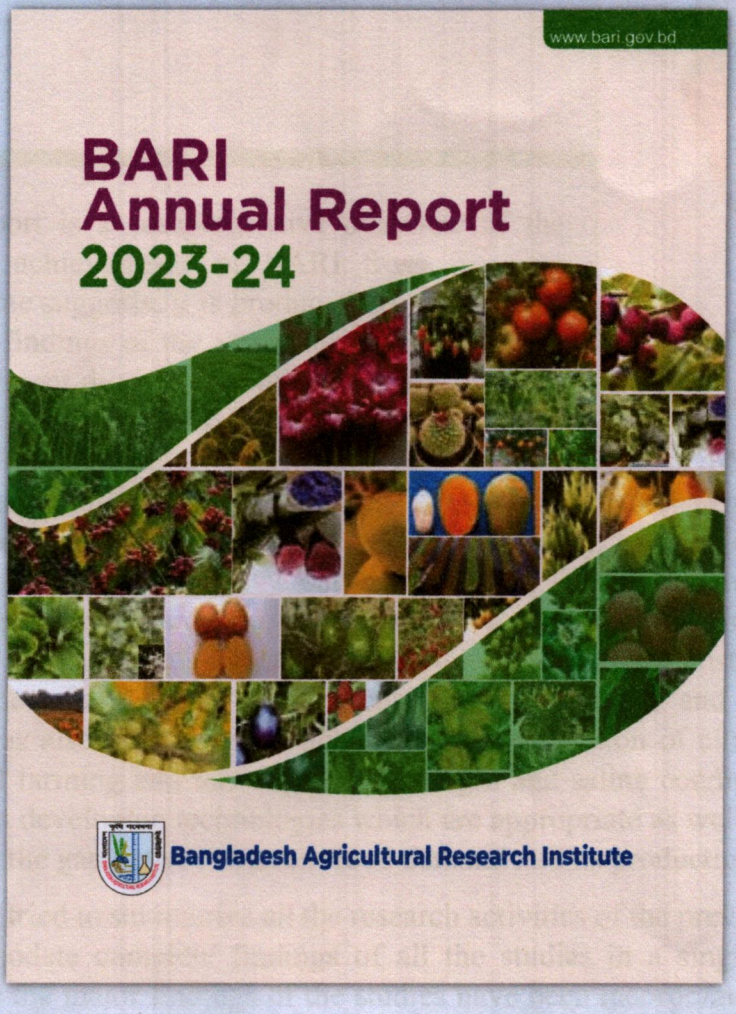


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Dr. Abu Hena Sorwar Jahan
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Md. Hasan Hafizur Rahman

১০/১২/২৪
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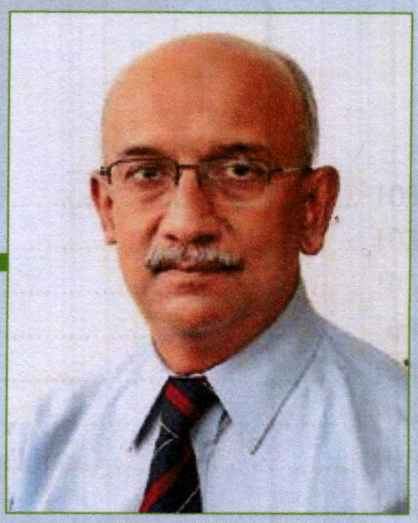
# Foreword



This annual report is a comprehensive overview of the activities and achievements of BARI from the year 2023-24. As the name suggests, it is produced on yearly basis and includes major findings of the experiments conducted by the scientists of different disciplines working in various Crop Research Centers and Research Divisions of BARI during the preceding year. The major research areas include variety development of different crops, such as tubers (potato, sweet potato, aroids, etc.), oilseeds (mustard, rapeseed, groundnut, sunflower, etc.), horticultural crops (fruits, vegetables and ornamentals), spices (onion, garlic, chili, turmeric, ginger etc.) and cereals (barley, oat, millets, etc.). The areas of research also include improvement of cropping systems, crop, soil, water and irrigation management, plant nutrition, disease and insect management, plant biotechnological research, postharvest processing, production economics, development of low-cost farm machinery, and farm management. Besides, attention has also been given to adaptation and mitigation of climate change related issues, char and hill farming and farming under drought and saline conditions. Our scientists have also engaged in developing technologies which are appropriate as well as sustainable with a view to narrowing the gap between current food demand and its production in the country.

Although this report tried to summarize all the research activities of the previous year, it is really difficult to accommodate complete findings of all the studies in a single volume. So, like previous years, only the major findings of the studies have been incorporated in abstract forms allowing the readers to get an overview of the studies in brief. Detailed information of any particular study may be obtained from the respective Centers' or Divisions' reports.

I express my heartfelt thanks and appreciate the efforts of scientists, editors, and associates who have worked hard to bring this report out on time. I hope this report will be useful to scientists, teachers, students, policymakers and other stakeholders who are engaged in agricultural research and development for food and nutrition security of the country.

**Dr. Md. Abdullah Yousuf Akhond**
Director General, BARI

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# TUBER CROPS

# 01

Tuber crops viz. potato, sweet potato, aroids, yam and cassava are essential food crops. Tuber Crops Research Centre (TCRC), BARI deals with these crops. The main research thrust of TCRC is on variety development considering high yield, short duration, biotic-abiotic stress tolerant, good keeping and processing quality. Breeding, biotechnology, disease & pest management, soil & nutrient management, organic culture, postharvest processing are the major concern groups to improve tuber crops. Achievements during 2023-2024 on varietal improvement, biotechnology approaches, disease management, insect management, production technology, soil, water and nutrient management, postharvest technology, organic culture and technology transfer have been given below:

## Varietal Improvement

### Potato

**Hybridization for high yielding (early bulking and early maturity, etc.) Potato variety development**

S. Naznin, M.A. Kawochar, T. Jahan, A.T.M.T. Islam, M. Rahman, M.S. Hosasin, M. M. Islam, and M.M. Rahman

Hybridization was done at Debiganj and Gazipur using 64 and 52 advanced lines/varieties, respectively under 16 hours extended photoperiod to create variability, and to select superior genotypes in the subsequent generations. For early bulking and early mature variety development targeted parents were BARI Alu-86, BARI Alu-79, BARI Alu-85 (Seven four seven), BARI Alu-75 (Montecarlo) and BARI Alu-52 (Labadia) etc. For improving natural storage capacity targeted parents were BARI Alu-48, BARI Alu-100 (Ottawa) and BARI Alu-67 (Gorgina) etc. Different high yielding varieties were used for high yielding variety development. We found several successful crosses by using those varieties as male and female parent and collected seeds from crosses for developing early bulking, early mature, longer natural storage capacity and high yielding varieties at both the locations. Those seeds will be sown next year for F1 seedling production for subsequent variety development process.

**Production of potato seedling tubers from $F_1$ seed ($F_1C_0$)**

M. Rahman, M. A. Halim, A.T.M. T. Islam, M. A. Kawochar, S. Naznin, T. Jahan, A.K. Das and M.M. Rahman

Hybrid true seeds which were produced in 2022-23 at Gazipur and Debiganj were sown at Breeder Seed Production Centre, BSPC, Debiganj, Panchagarh during this season 2023-24. After harvesting of all plantlets, 76 single plants and 128 single tubers of 263 crosses were selected for high yielding table potato. In total 123kg seedling tubers were stored for next year.

**Field evaluation of $F_1$ potato seedling tubers ($F_1C_1$)**

M. Rahman, A.T.M. T. Islam, M. A. Kawochar, S. Naznin, T. Jahan, M.A. Halim, A.K. Das and M.M. Rahman

Last year's collected seedling tubers were planted individually in the field. During the selection process all potato clones are examined critically. Each material ($F_1C_0$) was planted separately. In single plant generations ($F_1C_1$) 143 potato clones weighing 105 kg were selected and stored at BSPC, Debiganj for further evaluation.

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**Information on Right to Information: RTI of BARI**

| **Designated Officer** | |
|---|---|
| Officer's name | : Dr. Syed Md. Abdullah Shiblee<br>ড. সৈয়দ মুহাম্মদ আবদুল্লাহ শিবলী |
| Designation | : Chief Scientific Officer |
| Phone | : 49270129 |
| Mobile | : 01670051341 |
| Email | : cso.asict@bari.gov.bd |
| Website | : www.bari.gov.bd |
| Office | : ASICT Division, Bangladesh Agricultural Research Institute (BARI). Gazipur-1701 |

| **Designated Officer (Alternative)** | |
|---|---|
| Officer's name | : Nur Mohammad<br>নূর মোহাম্মদ |
| Designation | : Senior Scientific Officer |
| Phone | : 4970041-8 (Ext. 5662) |
| Mobile | : 01717354341 |
| Email | : nurbari2011@gmail.com |
| Website | : www.bari.gov.bd |
| Office | : ASICT Division, Bangladesh Agricultural Research Institute (BARI). Gazipur-1701 |

| **Designated Officer (Appeal)** | |
|---|---|
| Officer's name | : Dr. Mohammad Emdad Ullah Mian<br>ড. মোহাম্মদ এমদাদ উল্লাহ মিয়ান |
| Designation | : Secretary |
| Phone | : 55100100 |
| Mobile | : 01315187804 |
| Email | : secretary@moa.gov.bd |
| Website | : www.moa.gov.bd |
| Office | : Building # 04, Ministry of Agriculture, Bangladesh Secretariat, Dhaka |

**Table. Citizen's access to information in 2023-24**

| SN | Name of the Authority | No. of application received as of the format of Right to Information Act, 2009 | N0. of application which has solved through providing information | No. of decisions for not providing requested information and the reason for that decision | No. of appeals against the decision of the officer in charge | No. settlement appeals | No. of disciplinary action taken by the authorities against the officer in charge | Amount received as the value of information as per rule 8 of Right (Regulation of Information) to Information Act, 2009 | Details of different activities taken by the authorities |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | Bangladesh Agricultural Research Institute, Gazipur | 05 | 05 | - | - | - | - | - | - |

** BARI has provided answers to all 735 questions received through the website and mobile apps.

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