

BUAT Research News

From the Desk of Hon'ble Vice Chancellor



Patron

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Vice Chancellor

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It gives me great pleasure to present this first edition of the University Research Newsletter, showcasing our strength of research in terms of infrastructure and facilities. Research remains the cornerstone of progress in agriculture, enabling us to address emerging challenges related to food security, climate change, natural resource management and sustainable rural development. Our university is committed to fostering a dynamic research ecosystem that promotes excellence, interdisciplinary collaboration and technology-driven solutions for the farming community. The studies and innovations highlighted in this newsletter reflect our continuous efforts to develop resilient crop varieties, sustainable production systems, advanced post-harvest technologies and farmer-oriented practices that contribute to national agricultural growth. I am proud of the dedication and perseverance demonstrated by our scientists, academicians and young researchers in generating impactful research despite evolving global and environmental challenges. Their work not only strengthens the academic reputation of the university but also plays a crucial role in improving the livelihoods of farmers and ensuring sustainable agricultural development in Bundelkhand. I encourage our research community to continue pursuing innovative, need-based and socially relevant research with scientific integrity and commitment. Greater collaboration with industry, policymakers, entrepreneurs and farming communities will further enhance the practical impact of our research endeavors. I congratulate the editorial team for taking initiatives regarding publication of newsletter and appreciate the contributors for sharing their dedication. I am confident that this initiative will inspire knowledge exchange, collaboration and future innovations in agricultural sciences.

A handwritten signature in blue ink, which appears to read 'S.V.S. Raju'.

Prof. S.V.S. Raju
Vice Chancellor

Directorate of Research

Banda University of Agriculture and Technology, Banda

Banda University of Agriculture and Technology, Banda has been established as a full-fledged State University, having unique honour of being the “First Agricultural University of Bundelkhand Region”. The University is committed to work towards development of agriculture and allied sectors in the Uttar Pradesh on the whole and Bundelkhand region in particular. The Directorate of Research is working on the mandate of planning, execution, monitoring, co- ordination, evaluation and impact assessment of research programmes across the faculties to cater the research need of region. Directorate is continuously encouraging and supporting the faculties to strengthen the research & development programmes by approaching various funding agencies. To fulfill the mandate, university has signed Memorandum of Understanding (MoUs) with various ICAR, national and international institutions. Presently, University is running various AICRP centers, national, international, infrastructure developmental, SADP and dozens of private funded projects in the university to address the technical and practical problems of agriculture and allied sectors. The University is committed to the cause of Bundelkhand Agriculture through demand-driven and location-specific research programmes in the light of dynamism of socio-economic and agro-ecological conditions, management perceptions, the National-International trade scenarios and Government policies.

Mandates:

- To generate innovative agriculture technology to make Indian Agriculture globally competitive.
- To apply all possible sources of scientific interventions to the solution of the technical and practical problems of agriculture.
- To boost up basic research to accelerate the progress of agriculture with the inputs of fundamental knowledge.
- To solve the specific agriculture related problems, being faced by farming community.
- To formulate specific package of practices for optimization of farmers’ income of different holding sizes viz. large, medium, small and marginal.

Thrust Areas:

- To conduct research in the field of agriculture, horticulture, forestry, community science, agriculture engineering, veterinary and in any new area depending on requirement of the region’s rainfed agriculture.
- To manage sustainability of production and productivity by preserving natural resources and technological interventions.

REGIONAL RESEARCH STATIONS



Forestry Research Centre Mawai (Banda)

- Total area 53.00 acres.
- Aims to conduct strategic research on forestry and agro-forestry systems for Bundelkhand region alongwith production of planting materials of tree species.



Pulses Research Station Belatal (Mahoba)

- Total area of 26.2 acres.
- Aims to conduct strategic research on pulses and popularize improved technologies of technologies on pulses through quality seeds production.



Dryland Agriculture Research Centre Bharari (Jhansi)

- Total area of 187.3 acres.
- Aims to conduct strategic research on dryland agriculture for Bundelkhand region of U.P. along with production of seeds and popularization of technologies



Millets Research Station Gursarai (Jhansi)

- Total Area 63.59 acres.
- Aims to develop technologies on millets, seed production and dissemination of technologies on millets in this region.
- Voluntary centre of AICRP on Millets has also been implemented at MRS, Gursarai.



Oilseeds Research Station Mauranipur(Jhansi)

- Total area of 24.2 acres.
- Aims to develop and popularization of technologies in sesame and linseed along with seed production.
- AICRPs on Linseed and Sesame are running at this centre.



RESEARCH FACILITIES

Central Lab Facility

The Central Laboratory Facility is centralized instrumentation facility with modern high throughput instruments easily accessible to all the students and faculties of BUAT, Banda. The majority of students are using this facility to conduct their PG research in the different areas of agriculture and allied sciences. The facility consists of Analytical Facility, Food Technology Laboratory and Molecular Biology Laboratory. Additionally, the facility is widely being used by faculty members to conduct practical and training programmes.



Molecular Plant Breeding Lab

Molecular Plant Breeding Laboratory was established in Department of Genetics and Plant Breeding, Banda University of Agriculture and Technology, Banda to take a lead in frontier areas of molecular plant breeding. This lab was set up under the project "Centre of Excellence on Dryland Agriculture" sponsored by Govt. of Uttar Pradesh during 2019-20. The objectives of this lab are to impart the practical knowledge about fundamental and applied molecular techniques to students, to train them in frontier areas of molecular plant breeding and to develop new and modern techniques in the inter-disciplinary areas of crop improvement.

Post Harvest Management Facility

A state-of-art Post Harvest Management Facility (funded by *Rashtriya Krishi Vikas Yojana*, GoI) was established in the year 2023 at Department of Post Harvest Technology, College of Horticulture. The aim of this facility is to provide a platform to the researchers and scientists for advance research in area of horticulture particularly post harvest technology and food science and technology and train the students in area of food processing in order to encourage entrepreneurial skills among them.



RESEARCH FACILITIES

Centre for Excellence in Dryland Agriculture

Different research facilities viz. fruit orchards for dryland fruits, research farms, solar irrigation system, poly houses, net houses etc. have been created under the project “Center of Excellence in Dryland Agriculture (CEDA)” funded by Govt. of Uttar Pradesh. Under the project two advance laboratories have been established and total of 5 ha land area has been developed for research in agriculture and allied sciences.



Hi-Tech Nursery

University created all the modern facilities for the protected cultivation of high value fruits, vegetables and flower crops. The facility includes automated Green House facility, naturally ventilated polyhouses and other structures. The facility is primarily being used for nursery production and student research.



Breed Improvement Unit

Our University has taken initiatives for breed upgradation and conservation of pride of Bundelkhard the Kenkatha breed of cow. It is a local breed from Bundelkhand and have capacity to adopt at higher temperature. But due to low productivity farmers not prefer to keep them. Likewise, university is also going to take initiatives for breed upgradation of Jalauni sheep and Bundelkhandi goat due to its high productivity even at high temperature



RESEARCH FACILITIES

Regional Field Gene Bank

The University has taken an imperative initiative of establishment of Regional Field Gene bank to conserve the Tree & Woody Plant Resources of Vindhya region at BUAT, campus. The gene bank aims to conserve the indigenous tree and woody plant biodiversity of Vindhya range, develop a practical understanding of the Plant Genetic Resources among stakeholders and the interface between genebanks and breeders and to develop regimes concerning access to and exchange of Tree genetic resources as per National and International Policies. Presently, it is extended over an area of 35 acre. The Regional Field Gene Bank is comprised of Arboretum, Bambusetum and germplasm of *Santalum album* (Chandan), *Madhuca longifolia* (Mahua), *Butea monosperma* (Palas) etc.



Organic Testing laboratory

The Organic Testing Laboratory has been established at College of Agriculture, Banda University of Agriculture and Technology (BUAT), Banda under the Bundelkhand Package of the Government of Uttar Pradesh. The facility is equipped with high-end and advanced analytical instruments (UHPLC, AAS, XRD, FTIR) for testing organic produce, soil and organic inputs, residue detection and compliance with organic standards. The laboratory aims to emerge as a regional center of excellence for organic testing and certification, strengthening farmer-scientist linkages, supporting large-scale adoption of organic farming, facilitating export-quality certification, and contributing to sustainable agricultural development and increased farmer income in the Bundelkhand region.

Integrated Farming System

The University has developed and recommended a location-specific 1.0 ha Integrated Farming System model for the semi-arid Bundelkhand region comprising fishery, cropping system, indigenous cattle, vegetables, fruit orchard, fodder production, organic recycling and nursery. Based on three years of evaluation, the model generated an average annual net return of ₹3.82 lakh (including family labour), a Benefit-Cost Ratio (B:C) of 1.18, and created about 672 family labour workdays per year, ensuring year-round employment, enhanced resource-use efficiency and climate-resilient livelihood security for small and marginal farmers of Bundelkhand.



OUR CROP VARIETIES



**BUAT
ALSI-3**



Key Features

- **Average Yield: 10-11 q/ha**
- **Duration: 125-130 days**
- **Oil Content: 40%**
- **Recommended for: UP**
- **Ecology: Rainfed**
- **Moderately Reistant to bud fly, rust**

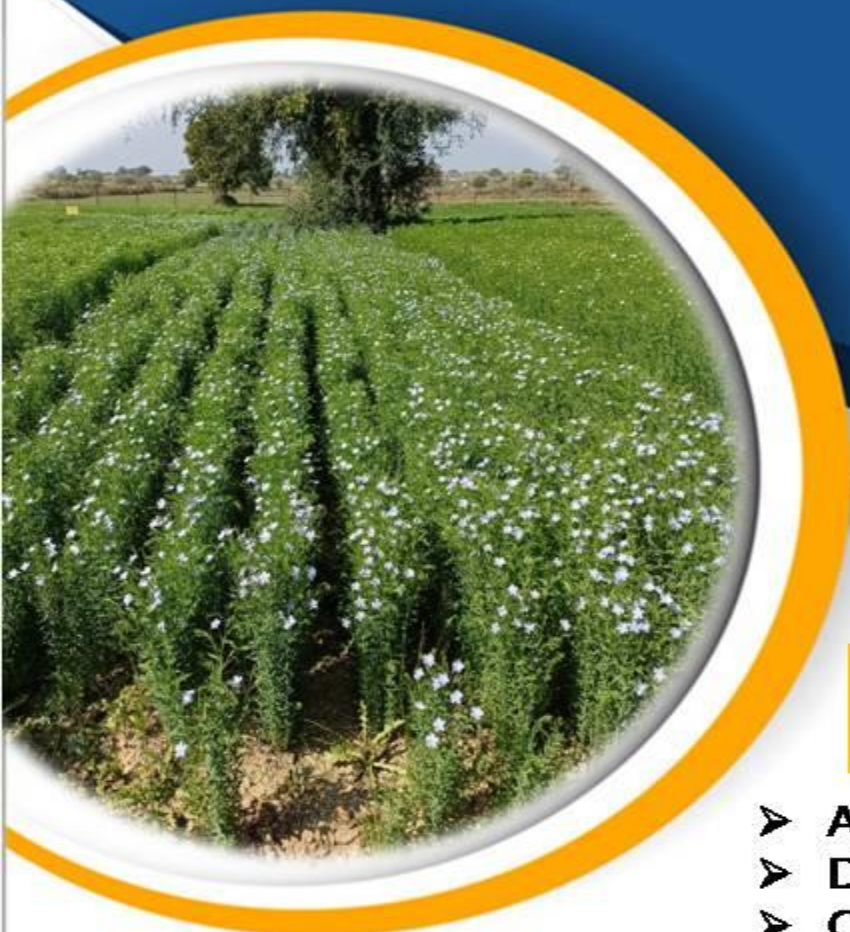
**Notification number
S.O.4388(E) dated Oct 08, 2024**

Developed by

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Banda University of Agriculture & Technology
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OUR CROP VARIETIES



**BUAT
ALSI-4**



**Notification number
S.O. 500E dated Jan 29, 2021**

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Key Features

- **Average Yield:** 17-18 q/ha
- **Duration:** 130-135 days
- **Oil Content:** 38%
- **Recommended for:** MP, Rajasthan, Maharashtra, Odisha, Chhatisgarh, Karnataka, Bundelkhand
- **Ecology:** Irrigated
- **Resistant to Bud fly, Rust**



OUR CROP VARIETIES



**BUAT
ALSI-5**



Key Features

- **Average Yield:** 14-15 q/ha
- **Duration:** 155-158 days
- **Oil Content:** 40%
- **Recommended for:** HP , Jammu, Punjab
- **Ecology:** Irrigated
- **Reistant to Rust**

**Notification number
S.O.1560(E) dated March 26, 2024**

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OUR CROP VARIETIES



**BUAT
TIL-1**



Key Features

- **Average Yield: 8-8.5 q/ha**
- **Duration: 80-85 days**
- **Oil Content: 40%**
- **Recommended for: UP**
- **Ecology: Rainfed**
- **Reistant to CLS, AB, Stem Rot, Capsule Borer**

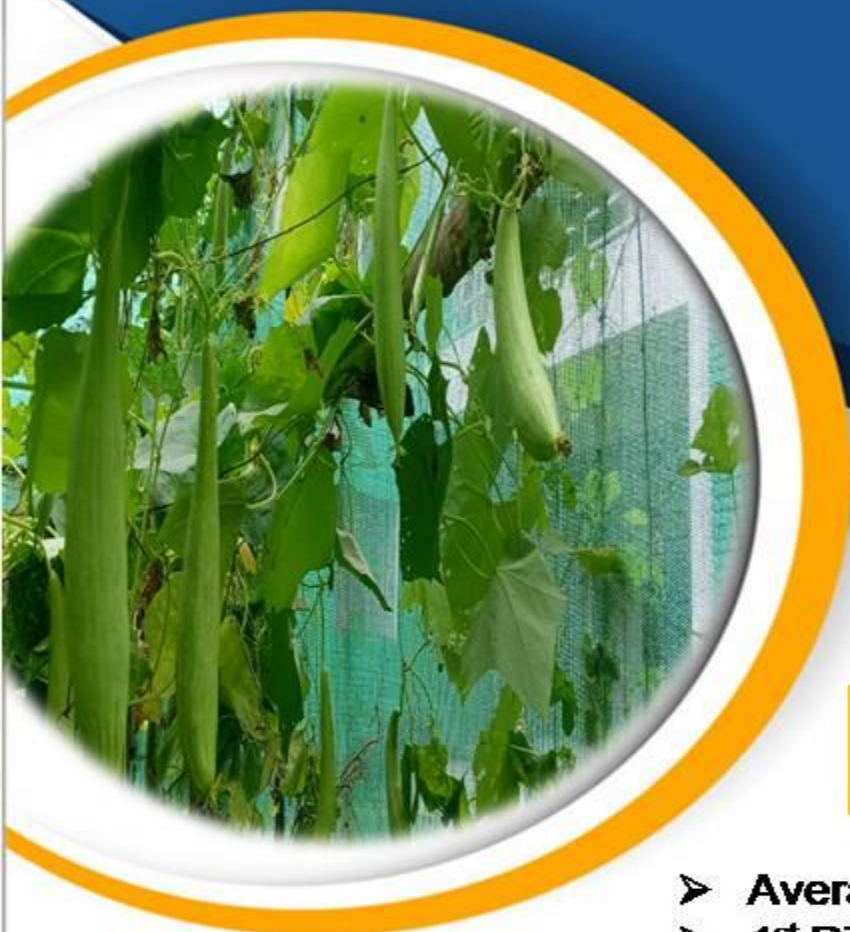
**Notification number
S.O.8(E) dated Dec 24, 2021**

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OUR CROP VARIETIES



**Ken
Swadist**



Key Features

- **Average Yield:** 25 q/ha
- **1st Picking:** 45-50 days
- **Fruit length:** 35 cm
- **Recommended for:** UP
- **Tolerant to drought and high temperature**
- **Quality:** Aromatic

**Notification number
S.O. No. 1362 (E) dated 12th
March, 2024**

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