

CRIJAF BULLETIN

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DIRECTOR'S MESSAGE

Greetings !

This edition of the CRIJAF Bulletin, showcases the dynamic research, outreach, and institutional activities at ICAR-CRIJAF. The institute has seen impactful strides in sustainable fibre innovation, from enhanced bioethanol production using kenaf, to eco-friendly pulp from jute and kenaf, to advanced composting techniques using cellulolytic *Bacillus* strains. The identification of JRO 2024 (Tossa jute) for central release and the release of AMV-11 (Roselle) for commercial cultivation mark significant milestones.

We were privileged to host the Hon'ble Union Minister of Textiles and the Hon'ble Minister of State for Ports, Shipping & Waterways, reaffirming our national relevance. Our collaborative efforts through the National Symposium on Coastal Agriculture, international conferences, and stakeholder meeting are aligning research with real-world applications. ICAR-CRIJAF remains deeply committed to farmer empowerment through initiatives such as Viksit Krishi Sankalp Abhiyan, skill development for rural women, and entrepreneurship training in jute and allied fibres.

As we celebrated the 73rd Foundation Day with great enthusiasm, we also reaffirmed our vision of Atmanirbhar Bharat through inclusive innovation and community linkage. I thank our dedicated scientists, partners, and stakeholders for their continued support.



(Gouranga Kar)
Director, ICAR-CRIJAF



RESEARCH NOTES

Enhanced Bioethanol Production from Kenaf (*Hibiscus cannabinus* L.)

Kenaf, a high-biomass carbon neutral fibre crop, enriched with cellulose in its secondary cell wall is a sustainable and eco-friendly lignocellulose biomass (LCB) for bioenergy production. However, due to its inherent biomass recalcitrance, cellulose crystallinity and degree of polymerization, designing efficient strategies for its effective pretreatment and efficient saccharification are critical for commercial bioethanol production. Pretreatment of kenaf cv. MT-150 with NaOH (2.5 %) for 2 h resulted in high delignification (66.9 %) outperforming other alkali [KOH, Ca(OH)₂, Na₂CO₃] and acid (HCl and H₂SO₄) pretreatments. Follow-up enzymatic pretreatment with laccase and 1-hydroxybenzotriazole (HBT) improved delignification efficiency up to 75.2 %. Scanning electron micrographs revealed disruption and pore formation in pretreated cell wall. Cellulose crystallinity increased by 14 % due to delignification and hemicellulose removal. Using additive-mediated enzymatic saccharification as a novel strategy, the process could achieve 92.6 % saccharification efficiency. The sequential alkali-laccase-HBT pretreatment and additive-mediated saccharification led to release of 38.2 g/l ethanol on fermentation, suggesting that the integrated protocols developed in this study have potential for scale-up as a sustainable environment-friendly alternative to harsher chemical pretreatment methods for bioethanol production from fiber crops.

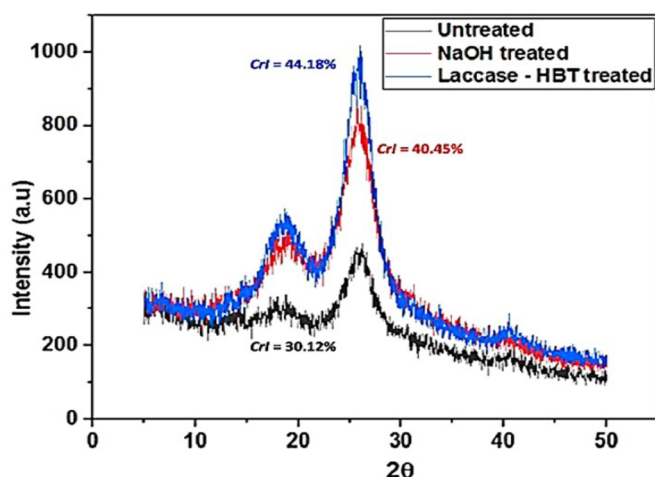


Fig. 1. XRD showing the cellulose crystallinity of untreated, 2.5 % NaOH pretreated and alkali-laccase-HBT kenaf biomass

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Genomic Characterization of Cellulolytic *Bacillus* Species for Leaf Litter Degradation and Compost Production

This study focused on isolating and identifying *Bacillus* species with strong cellulolytic activity to improve leaf litter decomposition. Three bacterial strains, B1S, B1M, and B1D were isolated from composted leaf litter and characterized through morphological, biochemical, and enzymatic analyses. B1S, identified as *Bacillus stercoris*, exhibited the highest total cellulase (0.818 ± 0.026 fpu/ml) and endoglucanase (25.674 ± 2.085 CMCase/ mL) activities. B1D showed the highest β -glucosidase activity (3.561 ± 0.088 IU/mL). Optimal cellulase activity for B1S occurred at pH 5.0 and 37 °C. Inoculating compost piles with a mix of these strains significantly reduced composting time from 100 to 50 days, with a cellulose degradation rate of 45.18%.

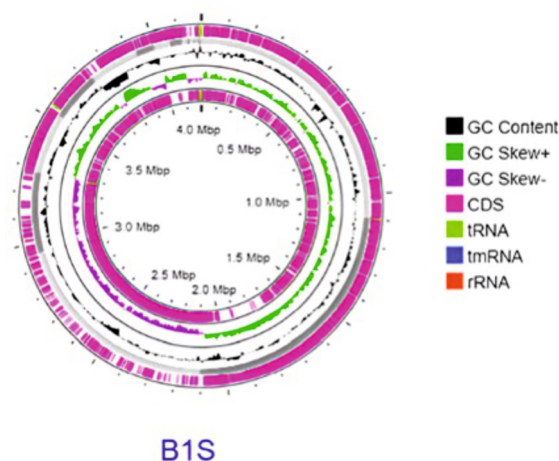


Fig. 2. The circular genome of B1S Bacteria produced using Proksee Genome Analysis Server (<https://proksee.ca/>)

The study included whole genome sequencing of B1S (~ 4.2 Mb, 4184 coding sequences), revealing genes encoding key carbohydrate-active enzymes (glycoside hydrolases, carbohydrate-binding modules, auxiliary activity enzymes) confirming its lignocellulolytic capacity. Taxonomic analysis using TYGS and genome-wide phylogeny validated its identity as *Bacillus stercoris*. Functional annotations through RAST, KEGG, and COG databases indicated enrichment in genes related to carbohydrate and amino acid metabolism, quorum sensing, and environmental adaptation. These findings demonstrate the potential of *Bacillus stercoris* as a valuable microbial tool for sustainable composting and underscore the importance of genome-based approaches in microbial functional & taxonomic studies.

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Eco-friendly Paper Pulp Production from Jute and Kenaf Biomass

The rising global emphasis on sustainable textiles and eco-friendly packaging has significantly accelerated the demand for renewable biomass sources. In this context, jute and kenaf have emerged as viable alternatives to traditional wood-based resources due to their rapid growth cycle (4 months) and high biomass yield (15–20 tonnes/ha). Notably, both jute and kenaf bast fibres possess a high cellulose content (60–72%) and low lignin content (11–15%) and silica (0.04%), which facilitates energy-efficient pulping with reduced chemical usage offering up to 30–40% lower energy consumption and 25–35% less chemical input compared to conventional wood pulping.

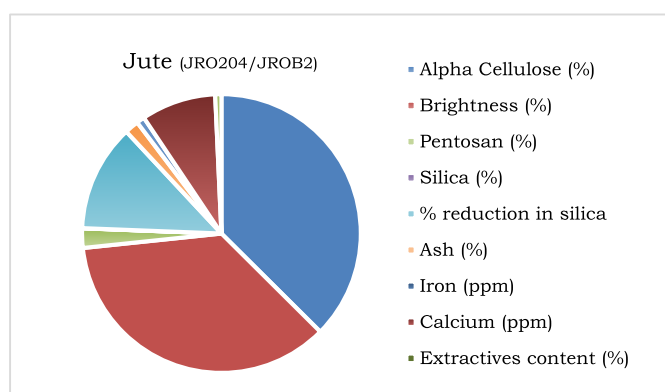


Fig. 3. Chemical composition of jute biomass

To capitalize on this potential, a research initiative titled 'High-Quality Viscose Fibres and Eco-Friendly Paper Pulp Production from Jute and Kenaf Biomass' has been launched in collaboration with the Central Pulp and Paper Research Institute (CPPRI), UP. The project's objectives include (i) Biomass characterization of jute and kenaf at their optimal phenological stages to determine ideal harvesting periods for pulp yield and fibre strength; (ii) Protocol standardization for producing premium-grade paper pulp with minimal environmental impact; and (iii) Evaluation of pulp blending effects, assessing the mechanical strength, brightness, and durability of final paper and viscose fibre products. Preliminary studies suggest that jute and kenaf-based pulp can outperform conventional hardwood pulp in terms of tensile strength (up to 50–60 N·m/g) and burst factor, positioning them as ideal materials for high-quality writing, printing, and specialty papers. Moreover, the adoption of these fibres aligns with India's National Bio-Energy and Circular Economy Missions.

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Augmenting the Protection Against Insect Pests of Jute in Jute Production System

The on-farm field experiment was conducted in Belleshnakarpur village of North 24 Parganas at 3 locations. The prevalent cropping systems among the farmers are jute-vegetables/potato-onion, jute-rice-lentil/mustard, and jute-vegetables-lentil/mustard. Most of the farmers grow JRO 204, JRO 524, CO 58 and JROBA 3 varieties of jute. Except for seed treatment with carbendazim for stem rot, most of the farmers do not adopt any plant protection measures. The crops, like tomato, onion, okra, and other weeds, act as alternate hosts for the insect pest of jute. The sulphur content of the soil of the experimental area varied from 3.79 to 5.09 PPM. The pre-sowing soil pH of the soil was 6.18 to 6.44.



Fig. 4. Protected and insect infested crop of jute

The performance of the moderately mite-resistant varieties JROBA 3 and JRO 204 integrated with sulphur application in soil (@ 40 kg/ha) and need based application of foliar insecticides was evaluated under an on-farm jute production system. The infestation of indigo caterpillar (ICP) in the initial stage of crop establishment varied from 7 larvae/m² in JROB 3 to 13.66 larvae/m² in JRO 204. The treatment of Sulphur in soil and foliar spray of Chlorantraniliprole (18.5% SC) @ 0.4 ml/L suppressed the pest infestation to 8.42 larvae/m² compared to 11.80/m² in the control. Irrespective of the varieties, the damage grade of ICP was significantly less in JROBA 3, whereas the sulphur treatment showed a lower level of damage grade compared to the control. The effect of varieties and sulphur treatment was prominent on plant growth characteristics, both on plant height and basal diameter. These parameters were significantly highest in the variety JROBA3 treated with sulphur @ 40 kg/ha.

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AMV-11: HYV of Roselle Released and Notified for Commercial Cultivation

The high-yielding roselle (*Hibiscus sabdariffa* L.), also known as HS mesta, variety AMV 11 has been officially released and notified for commercial cultivation by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties (CSCSN&RV), as per the Gazette of India (No. S.O. 2128E, dated 13th May, 2025). Developed by the ARS, Amadalavalasa centre under the All India Network Project on Jute and Allied Fibres. AMV 11 was bred through the pedigree method using a cross between AHS 161 × JRR-02, followed by rigorous selection for superior fibre yield, quality, and resistance to biotic stresses.



Fig. 5. AMV-11 variety of roselle (AHS 161 × JRR-02)

This variety, also referred to as AHS-333, was extensively evaluated in six mesta-growing states from 2020 to 2023. It recorded an average fibre yield of 29 q/ha, with a potential yield reaching up to 40 q/ha. AMV 11 is a red-stemmed variety with fewer bristles, maturing for fibre at 140 days after sowing (DAS) and for seed at 180 DAS. It produces fibre with improved quality, characterized by lesser root content, better tensile strength, and comparable fineness to standard check varieties. Moreover, AMV 11 exhibits enhanced tolerance to foot and stem rot, as well as to major insect pests such as aphids and whiteflies, when compared to check varieties SH 4288 and AMV 5. Given its adaptability and performance, AMV 11 is well-suited to replace or supplement the popular varieties AMV 5 and AMV 7 in the midland and highland rainfed agro-ecosystems of Andhra Pradesh, Odisha, Tamil Nadu, Maharashtra, and Bihar.

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JRO 2024: A Tossa Jute Variety Identified for Central Release

The high-yielding tossa jute variety JRO 2024 (*Corchorus olitorius* L.), developed for early-March sowing, was identified for central release by the Variety Identification Committee during the 36th Annual Workshop of the All India Network Project on Jute and Allied Fibres, held at ICAR-CRIJAF, Barrackpore, on 17th March 2025. The meeting was chaired by the Deputy Director General (Crop Science), ICAR. JRO 2024, also known as JRONS-1, was developed through pureline selection from the widely cultivated variety JRO 524. The breeding objectives focused on resistance to premature flowering, high fibre yield, and improved tolerance to insect pests and diseases.



Fig. 6. JRO2024 variety of tossa jute (JRONS-1)

Its strong resistance to early flowering makes it highly suitable for early sowing from the first week of March, across both rainfed and irrigated agro-ecosystems in West Bengal, Assam, Bihar, Odisha, and Maharashtra. Between 2021 and 2024, JRO 2024 was extensively evaluated in multi-location yield trials across five major jute-growing states. It recorded an average fibre yield of 31.81 q/ha, with a potential yield of up to 37.4 q/ha. The variety is especially suitable for jute-mung, jute-paddy, and intercropping systems, and its strong resistance to premature flowering. In addition, JRO 2024 showed 25–40% greater tolerance to root rot and insect pests such as yellow mite and semilooper compared to the check variety JRO 524. It is comparable in fibre quality to both JRO 524 and JRO 204, with a fibre crop maturity of 120 days, and 130–150 days for seed crop.

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INM on Growth and Fibre Yield of Flax in Lower Indo-Gangetic Plains

A field experiment was conducted at ICAR-CRIJAF Research Farm during 2023-24 to develop an integrated nutrient management (INM) schedule for fibre flax to enhance the fibre yield and also to substitute the chemical N dose through organic sources like FYM and biofertilizer (*Azotobacter*). The experiment comprised 7 treatments: T1: control; T2: 50% NPK; T3: 50% NPK + FYM @ 5 t/ha; T4: 50% NPK + FYM @ 5 t/ha + *Azotobacter*; T5: 50% NPK + FYM @ 10 t/ha; T6: 50% NPK + FYM @ 10 t/ha + *Azotobacter*; and T7: 100% NPK, respectively. The experimental data revealed that the fibre yield of flax recorded (16.96 q/ha) with 100% NPK (inorganic) was statistically at par with the fibre yield recorded (15.42 – 17.44 q/ha) with the INM treatments (50% inorganic NPK + FYM @ 5 – 10 t/ha + *Azotobacter*). An almost similar trend was observed in the case of plant height, while the variation in basal diameter due to fertilizer application was found to be non-significant. All the INM treatments recorded 32.9 – 43.9% higher plant height and 85.5 – 109.9% higher fibre yield over the control treatment (85 cm & 8.31 q/ha) (Fig.).

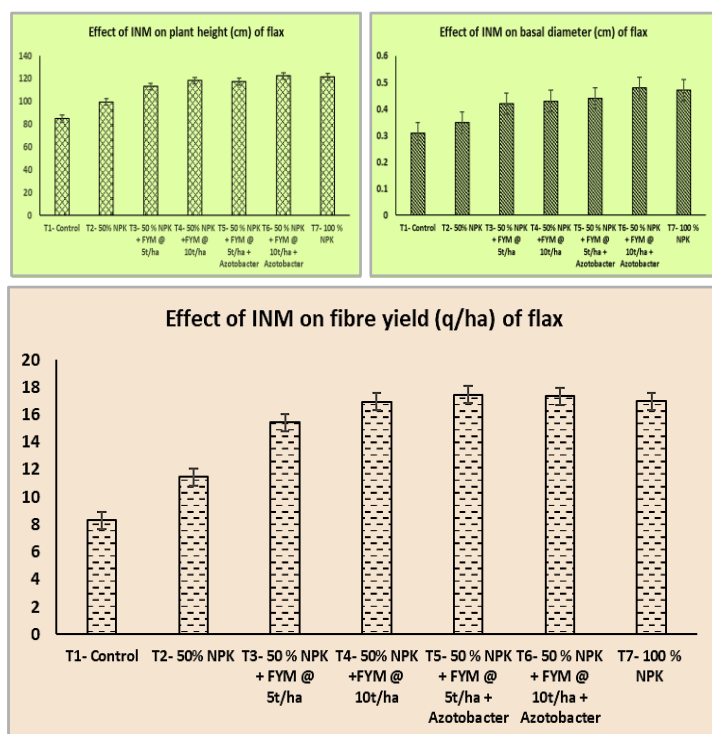


Fig. 7. Growth and fibre yield of flax under integrated nutrient management practices

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Functional Diversity of Jute Retting Water Samples by using Biolog Eco-plates

The structure of the bacterial community in jute retting water was analyzed using samples collected from five major jute-growing districts of West Bengal, India both before the start of retting and during its middle stage. Microorganisms in pre-retting water exhibited a distinct lag phase lasting up to 24 hours, followed by a rapid growth phase up to 48 hours. Although the metabolic activity declined after 48 hours, microbial growth continued up to 120 hours across all samples. Interestingly, the Average Well Color Development (AWCD) analysis revealed contrasting trends across locations. Pre-retting water samples from North 24 Parganas, Murshidabad, and South Dinajpur showed significantly higher AWCD values compared to samples collected during retting. Conversely, in Hooghly and Nadia, water samples collected during retting exhibited higher AWCD than those collected before retting (Fig. 8A).

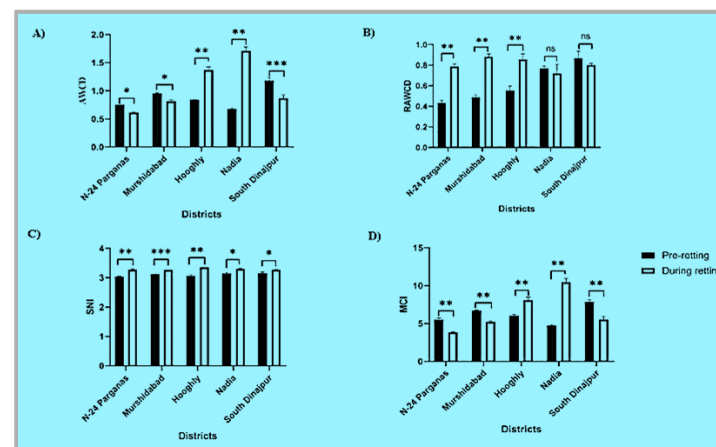


Fig. 8. A) Average well color development (AWCD) B) Rate of average well color development change (RAWCD) C) Shannon Index g and D) McIntosh Index (MCI)

Diversity indices further supported these findings. The Shannon-Weaver index (Fig. 8C) showed significant differences between pre- and mid-retting samples, while the McIntosh index (Fig. 8D) was notably higher in pre-retting samples from North 24 Parganas, Murshidabad, and South Dinajpur, indicating a richer and more balanced microbial community. Additionally, there was a marked difference in substrate utilization patterns. Bacterial communities present during retting more frequently utilized 18 out of the 31 carbon sources compared to those in pre-retting water over a 72-hour growth period, suggesting a shift in microbial metabolism and community function during the retting process.

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NEWS & EVENTS

Hon'ble Textile Minister, Sri Giriraj Singh Ji visited ICAR-CRIJAF

ICAR-CRIJAF organized a Jute Growers' Industries and Stakeholders Meet on 2nd January 2025, graced by Hon'ble Union Minister of Textiles, Shri Giriraj Singh, as the Chief Guest. The minister toured the institute's museum, technology hall, research labs, biotechnology unit, and research fields and interacted intensively with stakeholders, SHGs, and scientists. He praised ICAR-CRIJAF's role in varietal development, skill-building, and jute-based livelihood generation, especially highlighting the success of 'Lakhpatri Didis'. Shri Singh emphasized promoting the jute-rice-flax cropping system and diversifying jute use for bio-ethanol, bio-CNG, paper pulp, and more. He also launched four documentary videos, a book on jute research, and witnessed product displays by SHGs. Two MoUs were signed with Shaktigarh Textiles for a pilot project on biofuel from jute biomass, and with Jayshree Textiles and OG Hemp to scale up flax cultivation. Over 400 participants, including farmers, SHG members, industries, and media, attended. The minister lauded the institute's impactful contribution to jute sector advancement.



Visit of Shri Giriraj Singh, Hon'ble Union Minister of Textiles during 2-3 January 2025 in ICAR-CRIJAF

Kisan Samman Samaroh

Kisan Samman Samaroh to mark the release of the 19th installment of the PM-Kisan Samman Nidhi by Hon'ble Prime Minister Shri Narendra Modi was organised on which was watched live by over 262 farmers and farm women. Shri Shantanu Thakur, Hon'ble Minister of State for Ports, Shipping & Waterways, Govt. of India was present on this occasion. In his address, he emphasized the global potential of indigenous natural fibres and the need to scale up jute-based cultivation, processing, and marketing using ICAR-CRIJAF's technologies and training programs. Six progressive farmers and SHG women were felicitated. Dr. Gouranga Kar, Director, highlighted the institute's contributions for developing over 100 high-yielding varieties. Dr. Pradip Dey, Director, ICAR-ATARI, underlined the PM-Kisan scheme's role in helping small and marginal farmers access timely inputs and adopt new technologies.



Visit of Shri Shantanu Thakur, Hon'ble Minister of State during 26 February 2025 in ICAR-CRIJAF

ICAR Sports Tournament for Eastern Zone 2024 (TEZ-2024)

The ICAR-CRIJAF sports contingent participated in the ICAR Sports Tournament for Eastern Zone 2024 (TEZ-2024) organized at ICAR-IVRI, Bareilly, during 6-9 May, 2025. The participants showed great skill and sportsmanship in various track & field events (race, long jump, high jump, relay race, discus throw, cycle race) and indoor games (table tennis, badminton, carrom). The team bagged 6 gold, 7 silver and 3 bronze medals in various events.



Staff of ICAR-CRIJAF with Gold, Silver and Bronze medals during TEZ-2024 Sports tournament (6-9 May 2025)

SEMINAR/WORKSHOP/MEETINGS ORGANIZED

14th National Symposium on Coastal Agriculture (NSCA 2025)

The 14th National Symposium on Coastal Agriculture (NSCA), Harnessing Fragile Coastal Ecosystems for Food and Environmental Security, was organized at ICAR-CRIJAF from 28 February to 3 March, 2025. The symposium was organized by the Indian Society of Coastal Agricultural Research, West Bengal in collaboration with ICAR-CSSRI, Karnal; ICAR-CRIJAF, Barrackpore; and ICAR-CIFRI, Barrackpore. The symposium had the Dr. J.S.P. Yadav Memorial Lecture, the Dr. H.S. Sen Memorial Lecture, Plenum Lectures, the ISCAR Best Paper Presentation, a farmer conclave, technical sessions, and poster sessions along with exhibition stalls by various institutes and SHGs/FPCs. More than 250 scientists, researchers, academicians, students, farmers, and entrepreneurs attended the symposium.



Inauguration of 14th National Symposium on Coastal Agriculture (NSCA) at ICAR-CRIJAF

International Conference in collaboration with Brainware University

The International Conference on "Agri Next: Future Trends in Agriculture," held from February 10-12, 2025, in Barasat, Kolkata, in collaboration with ICAR-CRIJAF. The conference featured 11 technical sessions, fostering discussions on modern agricultural tools, biotechnology, agri-tourism, and marketing strategies. The distinguished guests included Dr. AK Patra, Vice-Chancellor, BCKV as the Chief Guest, alongside Dr. Gouranga Kar, Director, ICAR-CRIJAF, and Dr. Pradip Dey, Director, ICAR-ATARI as Guests of Honours. By fostering collaboration and sharing innovative ideas, the conference aimed to drive positive change in agriculture for a more sustainable future.



International Conference at Brainware University, Barasat (Kolkata) in collaboration with ICAR-CRIJAF

The Jute Industries-Stakeholders Meet

The Jute-Industries-Stakeholder Meet was organized on 2nd January 2025 at the Lecture Hall of ICAR-CRIJAF, Barrackpore. The director presented a comprehensive briefing on bast and allied fibres, delving into their unique properties, cultivation practices, and potential for expanded utilization. Following this, the Indian Jute Mills Association (IJMA) unveiled a roadmap aimed at upscaling the cultivation and utilization of these versatile fibres. The plan outlined strategies for increasing the area under cultivation, improving agronomic practices, and promoting the adoption of advanced processing technologies. A key initiative called OG Hemp was also introduced, with the goal of reducing India's dependence on imported flax fibres and fabrics by boosting domestic production and processing capabilities. The Hon'ble Union Minister of Textiles, Sri Giriraj Singh Ji, expressed strong support for these efforts, advocating for the adoption of a jute-rice-flax cropping system that would optimize land use and provide farmers with additional income streams. The minister also called upon the industry to play a proactive role in supporting the expansion of flax cultivation, investing in state-of-the-art fibre processing facilities, and exploring new markets for these sustainable and eco-friendly products, both domestically and internationally.



Jute Industries-Stakeholders Meet 2025 at ICAR-CRIJAF during visit of Hon'ble Union Minister of Textiles

The Tripartite MoU Signing Ceremony with Jute Industries of West Bengal

The Tripartite MoU Signing Ceremony for collaborative research, industrial trials, product development, and commercialization of bast fibre based blended yarn and products from ramie, flax, and sisal fibre was organised at the Indian Jute Industries' Research Association (IJIRA), Kolkata, on 25 April, 2025. The program was attended by Shri Giriraj Singh, Hon'ble Minister of Textile, Govt. of India, along with other dignitaries and representatives from various jute industries. The collaborative work will be carried out with Gloster Ltd. (Kolkata), Dalhousie Jute Company (Kolkata), Birla Jute Mills (South 24 Parganas), Ludlow jute & Specialities Ltd. (Kolkata), R.D.B. Textiles Ltd. (Kolkata), Kamarhatty Company Ltd., and Ambica Jute Mills (Howrah).



Tripartite MoU Signing Ceremony with Jute Industries of West Bengal in presence of Hon'ble Union Minister of Textiles

CELEBRATIONS

The 78th Republic Day

ICAR-CRIJAF celebrated the 76th Republic Day on 26 January 2025 at its campus. The event commenced with the hoisting of the national flag by Dr. Gouranga Kar, director of the institute followed by the singing of the national anthem. The director paid homage to the great leaders and freedom fighters whose sacrifices paved the way for India's independence and the establishment of the Republic. The celebration reflected a deep sense of national pride among the staff, students, and workers of the institute.

73rd Foundation Day

ICAR-CRIJAF celebrated its 73rd Foundation Day on 10th February 2025, featuring a Scientist-Farmers/SHGs interaction program. The event was graced by Chief Guest Dr. Ashok Kumar Patra, Vice Chancellor of BCKV, and Guests of Honour Dr. D.B. Shakywar (Director, ICAR-NINFET) and Dr. P. Dey (Director, ICAR-ATARI). Dr. Patra lauded the institute's

efforts in reviving jute as the "golden fibre." Dr. Shakywar emphasized collaboration for jute sector development, while Dr. Dey highlighted enhanced visibility through institutional partnerships. Director Dr. Gouranga Kar recalled CRIJAF's milestones and its holistic approach across research, training, and socio-economic empowerment. He noted that women trained at the institute have become 'lakhpati didis.' The event honoured scientists, progressive farmers, and SHG members. Over 250 participants, including staff, farmers, students, and media, attended the celebration.



Celebration of 73rd Foundation Day of ICAR-CRIJAF on 10th February 2025

7th Scientific Advisory Committee Meeting of KVK, North 24 Parganas

7th Scientific Advisory Committee (SAC) Meeting of KVK (North 24 Parganas, Additional) was convened on 26th June 2024 under the chairmanship of Dr. Gouranga Kar, Director, ICAR-CRIJAF, to provide strategic guidance and finalization of the Action Plan 2025. The meeting began with a welcome address by Dr. A.K. Singh, Principal Scientist and Headquarter In-charge of KVK. After the introduction of members and invitees, Dr. Tanmay Samajdar presented the Action Taken Report of the 6th SAC meeting. This was followed by presentations from Dr. D. Borkotoky, SMS (Animal Sci.), on the KVK's progress during 2024, and Dr. Aravind T., SMS (Plant Protection), who presented the proposed Action Plan for 2025. All the members of the SAC and heads of ICAR-CRIJAF were present in the meeting.

11th International Yoga Day

The 11th International Yoga Day was celebrated at ICAR-CRIJAF, Barrackpore, on 21st June 2025. About 100 staff members, including scientists, technical officers, administrative staff, skilled workers, supporting staff, and labourers, participated in the event.

FARMERS LINKAGES

Viksit Krishi Sankalp Abhayan across Four Districts of West Bengal

The Viksit Krishi Sankalp Abhiyan, launched by Union Minister for Agriculture & Farmers Welfare and Rural Development Shivraj Singh Chouhan, is a transformative campaign aimed at enhancing Indian agriculture. Focusing on the critical connection between research institutions and farming communities, the initiative strives to implement innovative farming practices. In West Bengal, the ICAR-Central Research Institute for Jute and Allied Fibres (CRIJAF) played a significant role by organizing the campaign in four districts: North 24 Parganas, Bardhaman, Bankura, and Coochbehar, engaging on-field scientists alongside the Specialists from the Krishi Vigyan Kendras. During a comprehensive 15-day programming schedule, spanning from May 29 to June 12, 2025, the initiative successfully attracted around 1,54,000 farmers, farm women, and rural youth. These individuals came from more than 1,100 villages across these four districts, representing approximately 50 blocks. Participants actively engaged in enriching discussions that fostered a collaborative learning environment, greatly benefiting the local farming community. The program not only enhanced farmers' skills but also encouraged the learning of innovative techniques, which may lead to improved agricultural productivity and enhanced rural livelihoods. The strong turnout highlights the significant potential for agricultural transformation in the area, with ICAR-CRIJAF at the forefront, empowering farmers through advanced research, modern practices, and sustainable solutions aimed at boosting productivity and overall well-being.



Director flagging on occasion of Viksit Krishi Sankalp Abhayan across Four districts of West Bengal

Awareness Program on Conservation of Crop Varieties, PPV&FR Act, BDA/NBA

An awareness program was organized by ICAR-CRIJAF in collaboration with KVK, North 24 Parganas (Additional), on 'Conservation of Crop Varieties, PPV&FR Act, BDA/NBA' at KVK, North 24 Parganas (Additional), on 21 March 2025. The objective of the program was to sensitize the farmers about the protection of their rights in the areas of farm innovations, breeding, and protection of varieties, including PPV&FR Act, BDA/NBA, and conservation of varieties. A total of 50 farmers from nearby villages participated in the program.



Participants of awareness program on Conservation of Crop Varieties

Skill Development on Making of Jute Bags for Rural Women of Sundarban

A fifteen-day advanced skill development program on the making of jute bags was organized by ICAR-CRIJAF, in association with the Kultali Milon Tirtha Society for rural women of Sundarban. The training was conducted at the newly inaugurated Sundarban Skill Development Centre from 31 January to 14 February, 2025, under the SCSP Program. A total of 30 SC women nominated by the Kultali Milon Tirtha Society from different villages of the Basanti Block of the Sundarban region participated in this training program. The training aimed to empower the rural women techno-socio-economically so that they could contribute to their family income by making and selling jute bags through the formation of groups.



Participants of skill development program on making of jute bags

Entrepreneurship Development in Fisheries and Aquaculture

A five-day on-campus training program on “Entrepreneurship Development in Fisheries and Aquaculture” was organized from 2 to 8 January, 2025, under the SCSP scheme. The training covered various aspects of fisheries and aquaculture, including the basics of aquaculture, current trends, and aquaculture practices in West Bengal. Sessions were conducted on pre-stocking and post-stocking management, feed formulation, integrated farming practices, breeding and seed production of important finfishes, ornamental fish aquaculture, and disease management. A total of 15 SC participants from Sandelerbill village of North 24 Parganas participated.



Participants of entrepreneurship development in aquaculture

Basic Skill Development Training on Making of Jute Bouquet and Handicrafts

A ten-day basic skill development training on ‘Making of Jute Bouquet and Handicrafts’ was organized for rural women of Amdanga block, North 24 Parganas during 9-18 June 2025 under the SCSP scheme. A similar program under the TSP scheme was also organized from 23 June to 2 July 2025. A total of 30 SC & ST women and rural youth participated in this training. The trainees were given both theoretical and practical knowledge by the trainer in making different decorative items like flower bouquets, bird sceneries, Lord Ganesha, and Maa Durga.



Participants of basic skill development program on making of jute bouquet and handicrafts

Training Organized under Jute-ICARE

A series of five training programs focused on “Improved Production Technology for Quality Jute Fibre Production.” Was organized from April 23 to May 6, 2025 at ICAR-CRIJAF, Barrackpore. These sessions, each lasting two days, were designed for 115 Block Supervisors and Master Trainers from the states of West Bengal, Bihar, Assam, Odisha, and Jharkhand, who are actively involved in the JUTE-ICARE programs. The program aimed to enhance their skills and knowledge in jute cultivation practices, promoting better quality production and ultimately benefiting local farmers and the jute industry.

राजभाषा कार्यान्वयन

भाकृअनुप-केन्द्रीय पटसन एवं समवर्गीय रेशा अनुसंधान संस्थान, बैरकपुर में राजभाषा नियमों एवं अधिनियमों के अंतर्गत संस्थान में राजभाषा हिन्दी के कार्यान्वयन हेतु अनेकों सहायीय कार्य किए जा रहे हैं। कार्यालय में राजभाषा अधिनियम की धारा 3(3) को बड़ी गंभीरता से लिया जाता है तथा इसके अंतर्गत आने वाले दस्तावेजों को द्विभाषी (हिन्दी-अंग्रेजी) रूप में जारी करने का कार्य किया जा रहा है। संस्थान, राजभाषा विभाग गृह मंत्रालय, भारत सरकार द्वारा जारी वार्षिक प्रतिवेदन के अनुरूप लक्ष्यों को पूरा करने के प्रति संकल्पित है। संस्थान में क्रमशः दिनांक 24 मार्च, 2025 तथा दिनांक 17 जून, 2025 को संस्थान के अधिकारियों / कर्मचारियों के कार्यालयीन कार्यों में हिन्दी को उत्तरोत्तर बढ़ावा देने के उद्देश्य से एक दिवसीय हिन्दी कार्यशालाओं का आयोजन किया गया। इसके अलावा राजभाषा कार्यान्वयन समिति की दो बैठकों का भी आयोजन क्रमशः दिनांक 10 मार्च 2025 तथा 18 जून 2025 को किया गया।



हिन्दी कार्यशाला में डॉ. गौरांग कर, निदेशक, संस्थान के अधिकारियों एवं कर्मचारियों को सम्बोधित करते हुए

राजभाषा विभाग गृह मंत्रालय, भारत सरकार द्वारा दिनांक 05 मार्च, 2025 को गुवाहाटी में पूर्व एवं पूर्वोत्तर क्षेत्रों का संयुक्त राजभाषा सम्मेलन समारोह / क्षेत्रीय राजभाषा सम्मेलन में संस्थान को संघ की राजभाषा नीति के उत्कृष्ट कार्यान्वयन तथा राजभाषा के प्रगामी प्रयोग के लिए वर्ष 2023-24 के लिए क्षेत्रीय राजभाषा पुरस्कार (प्रथम पुरस्कार) से सम्मानित किया गया। यह प्रतिष्ठित पुरस्कार (गुवाहाटी) में क्रमशः माननीय केंद्रीय गृह राज्यमंत्री, श्री नित्यानंद राय जी एवं असम राज्य के माननीय मुख्यमंत्री श्री हिमन्त विश्वशर्मा जी के कर कमलों द्वारा प्रदान किया गया। पुरस्कार वितरण समारोह में हिन्दी कक्ष के प्रभारी तथा अन्य कर्मियों सहित संस्थान के निदेशक, डॉ. गौरांग कर भी आमंत्रित थे जिन्होंने पुरस्कार ग्रहण किया।

IMPORTANT RESEARCH PUBLICATIONS

Contents lists available at ScienceDirect

Rhizosphere

journal homepage: www.elsevier.com/locate/rhisp

Impact of integrated nutrient management on soil microbiome diversity and health in rice based cropping system: Insights from long-term agricultural practices

Subhojit Datta^{a,1}, Sonali Paul Mazumdar^{b,1,2}, Bijan Majumdar^b, N.M. Alam^c, Lipi Chattopadhyay^b, Sourav Ghosh^b, Dipnarayan Saha^b, Anit Ranjan Saha^b, Gouranga Kar^d

^a Biotechnology Unit, Division of Crop Improvement, ICAR – Central Research Institute for Jute and Allied Fibres, Barrackpore, West Bengal, 700 121, India
^b Division of Crop Production, ICAR – Central Research Institute for Jute and Allied Fibres, Barrackpore, West Bengal, 700 121, India
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^d ICAR – Central Research Institute for Jute and Allied Fibres, Barrackpore, West Bengal, 700 121, India

National Academy Science Letters
<https://doi.org/10.1007/s40009-024-01601-2>

SHORT COMMUNICATION

Endophytic *Beauveria Bassiana* Isolates Induce Salinity Tolerance in Jute Plant (*Corchorus Capsularis*) by up-regulated Volatile Chemical Gene GDSL/KAT3

Chinmay Biswas¹ · Piyali Dey¹ · Thiribhuvan R¹ · Veegala Ramesh Babu¹ · N. M. Alam¹

Contents lists available at ScienceDirect

Biomass and Bioenergy

journal homepage: www.elsevier.com/locate/biombio

Enhanced bioethanol production from sequential alkali-laccase-hydroxybenzotriazole pretreatment and additive-mediated saccharification in kenaf (*Hibiscus cannabinus* L.)

Laxmi Sharma^{a,1}, Pratik Satya^a, Binita Dev, Tinku Goswami, Nurnabi Meherul Alam^a, Suman Roy¹, Arvind Kumar Singh, Surendra Kumar Pandey, Bijan Majumdar, A.K. Lavanya, Gouranga Kar

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International Journal of Tropical Insect Science
<https://doi.org/10.1007/s42690-025-01527-2>

ORIGINAL RESEARCH ARTICLE

Screening for resistance in wild jute germplasms of jute *Corchorus* spp. against jute semilooper, *Anomis sabulifera* (Lepidoptera: Noctuidae)

Veegala Ramesh Babu¹ · Thiribhuvan R² · Nishant Kumar Chourasia² · Subrata Satpathy¹ · Nurnabi Meherul Alam³ · Gouranga Kar¹

AWARDS & RECOGNITIONS



संघ की राजभाषा निति के उत्कृष्ट कार्यान्वयन तथा राजभाषा के प्रगामी प्रयोग के लिए क्षेत्रीय राजभाषा पुरस्कार (प्रथम) प्राप्त करते हुए संस्थान के निदेशक डॉ. जी. कर

REGISTRATION /COMMERCIALIZATION

Commercialization

Technology/ seed variety	Name of the Licensee(s)	Date of Licensing
CRIJAF Jute Seeder	Bengal Biotech and Research Medinipur, West Bengal-721131	2 Jan 2025
	Next 2 Nature Ulubari, Guwahati, Assam-781007	
CRIJAF Jute variety (JROBA-3)	Balaji Seeds Crop Sciences Pvt. Ltd. Hyderabad, Telangana	21 April 2025
	Invicta Agritech India Pvt. Ltd. Secunderabad. Telagana- 500014	22 May 2025

Royalty Earned

Rs. 40,98,857/- has been received as royalty payment of various commercialized technologies from authorized manufacturer and sellers.

DISTINGUISHED VISITORS

1. Shri Giriraj Singh Hon'ble Union Minister of Textiles, Govt. of India	1-2 January 2025
2. Shri Shantanu Thakur Hon'ble Minister of State (Port, Shipping, Waterways)	24 February 2025
3. Dr. Ashok Kumar Patra Vice Chancellor BCKV, Kalyani, W.B.	10 February 2025
4. Dr. V. K. Singh Director, ICAR-CRIDA	17 January 2025
5. Dr. T. R. Sharma DDG, Crop Science	23 January 2025
6. Dr. R. K. Yadav Director, ICAR-CSSRI	February 2025
7. Dr. P. K. Ghosh Former Director, ICAR-NIBSM	1 March 2025
8. Padmini Singla, IAS Joint Secretary, Ministry of Textile, GoI	26 April 2025
9. Lalit Kumar Gupta Chairman and MD, Cotton Corporation of India Ltd.	26 April 2025
10. Dr. Major Singh Member (PS), ASRB, New Delhi	28 April 2025

PERSONNEL

Promotion

Name	Designation	Promoted to	Date of promotion
Dr. S. Ghosh	Scientist	Scientist (Level -11)	4.1.2023
Dr. D. Dutta	Scientist	Scientist (Level -11)	7.1.2024
Dr. V. R. Babu	Sr. Scientist	Scientist (Level -13 A)	15.9.2023
Shri S. Dey	Pr. Assistant	Private Secy (Level – 8)	1.1.2025
Smt. N. Mandal	Pr. Assistant	Private Secy (Level – 8)	1.1.2025

Transfer

Name	Designation	Transferred to
Md. S. Mukhtar	Sr. Tech. Officer	ICAR-NBSSLUP, Kolkata
Shri A. Barua	Upper Div. Clerk	ICAR-IVRI Mukteswar as A&FAO
Shri S. Patra	Technician	Resigned

New Joining

Name	Designation	Date
Dr. T. Adak	Sr. Scientist	30.1.2025 (from ICAR-CISH)
Dr. S. Patra	Sr. Scientist	29.4.2025 (from ICAR-RCNEHR)
Shri S. Pramanick	Technician	30.1.2025
Shri P. Sagar	Technician	3.2.2025
Shri A. Kumar	Technician	3.2.2025
Smt. R. Majumdar	Assistant	4.3.2025

Superannuation

Name	Designation	Date
Shri S. B. Rajbansi	Skilled Supporting Staff	31.3.2025
Shri Lochindra	Skilled Supporting Staff	31.5.2025

EDITORIAL

Jute & Allied Fibres for Regenerative Agriculture

Jute and allied fibres play a significant role in regenerative agriculture in India by contributing to soil health, carbon sequestration, and sustainable farming practices. These natural fibres, including jute, mesta, sunnhemp, and others, offer a variety of ecosystem services and can be utilized in multiple ways to enhance agricultural sustainability.

Enhancing Soil Health and System Productivity

Long-term trials in eastern India show that jute-based cropping systems, such as jute-rice-mustard rotations, deliver higher system productivity compared to traditional rice-rice systems. Jute contributes substantial organic matter accruing about 15 tonnes of fresh leaves per hectare, which adds roughly 53 kg N, 58 kg K, and significant biomass back to the soil annually thus improving microbial activity, aeration, water-holding capacity, and overall fertility.

Carbon Sequestration & Ecosystem Services

Jute sequesters approximately 15 tonnes CO₂ per hectare every crop cycle (about 120 days), while generating 11 tonnes of oxygen, making it a net carbon sink. India's annual jute cultivation can enhance carbon offset value. Beyond sequestration, jute and allied fibres (e.g., mesta, flax, ramie, sisal, sunnhemp) provide ecosystem benefits such as biodegradable alternatives to plastics, relaxation on forest pressure for pulp, and mitigation of greenhouse gases.

Diversification with Allied Fibres and Intercropping

The ICAR-CRIJAF has conducted numerous trials demonstrating intercropping of allied fibres into diversified systems. These systems enhance soil nitrogen, reduce fertilizer dependency, and increase profitability without compromising ecosystem functions key tenets of regenerative agriculture.

Green Manure and Crop Rotation

Jute and mesta crops can be used as green manure, adding nutrients and organic matter to the soil. They can also be incorporated into crop rotation systems to improve soil health and productivity.

Varietal and Technological Innovations Supporting Sustainability

ICAR-CRIJAF have released over 100 improved varieties of jute and allied fibre crops, featuring early maturity, higher N-responsiveness, disease resistance, and finer fibre quality. Notably, finer tossa jute varieties, and white jute types are 10–25% finer than prior cultivars supporting both better soil assimilation and market value for value-added applications. Advancements such as microbial retting, line sowing drills, precision nutrient management, and drone monitoring are boosting both yield and sustainability of jute cultivation across West Bengal, Assam, Bihar, and Odisha.

Socio-economic Impact and Empowerment

Jute cultivation supports more than 5 million livelihoods across India, especially in West Bengal, Bihar, Assam, and Odisha, with women playing crucial roles in spinning, weaving, processing, and cooperative value chains. By integrating jute into regenerative systems, smallholder farmers can realize higher net returns, improved fibre grades, and better marketability, all while reducing reliance on chemical inputs and improving health and local ecosystems.

These practices establish jute and allied fibre systems not just as economic crops but as vehicles for ecological regeneration, climate resilience, and sustainable rural livelihoods across India.



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Published by:

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