

Happy
Diwali



Festival of Lights

IJIRA

NEWSLETTER

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In this Issue

- **New Technologies**
- **Upgradation of Soil/Geo-Textiles Laboratory in IJIRA-NERC**
- **Skill Initiatives**
- **Testing/ Consultation Services**
- **Events**
- **International Conference**

Editorial Board

- **Dr. Pradip Chakrabarti**
- **Soumita Chowdhury**
- **Partha Sanyal**
- **Ipsita Roy**
- **Apsara Nath**
- **Jitesh Kayal**
- **Kuntal Chakraborty**

From the Desk of the Director

- ❖ In continuation to IJIRA's focus on introducing automation and instrumentation in jute industry, various teething problems during commercial installation of novel pneumatic based roll former are being resolved before finding out effectiveness of technology at industry level.
- ❖ A commercial roller drafting machine has been installed in an industry to establish its smooth production capability. Various initial teething problems have finally been resolved and the machine has been handed over to production department for continuous operation.
- ❖ Under mentoring of HMOT, technology development for enzymatic scouring and bleaching of raw, crude and thick bamboo fiber is under development stage. The developed process will soon be tested at pilot scale level to find out quality of fiber so produced.
- ❖ The process for cottonization and whitening of jute fiber has been standardized. This technology has potential for export too.
- ❖ Three teasers for International Conference have been circulated to all stakeholders.
- ❖ Up-graded soil testing laboratory has been established in IJIRA-NERC. Training of staff is under progress to make geotextile testing operational as per NABL standards.
- ❖ A demo centre for slope stabilization using different natural fiber based Erosion Control Blankets (ECBs) has been planned on NH-40 to showcase effectiveness of different types of natural fiber based erosion control blankets.
- ❖ IJIRA's chemical testing laboratory is now fully equipped to service jute industry of India and Bangladesh to certify Food Grade Jute bags to be exported to European Countries as per new European norms. IJIRA now is the only certifying R&D laboratory for Food Grade Jute bags in south-east Asia.

Dr. A. K. Sharma
Director, IJIRA

Technology No. 1:

TECHNOLOGY FOR WHITENING OF JUTE FIBER FOR LIFE STYLE PRODUCTS

A pilot scale process (180 Kg) for softening, scouring and bleaching of jute fiber has been standardized. Nearly 80kg of white softened jute fiber has been successfully hackled with 30% short fiber generation. 10 Kg of hackled fiber was converted into first drawing sliver.

Different parameters for IJIRA's bleached jute fiber are tested and compared with raw jute fiber. The results are tabulated below.

Test Report of Raw Jute and Bleached Jute Fiber

Parameters	Raw Jute	Bleached Jute
1. Avg. Diameter (in Micron)	70.77	93.75
2. Avg. Fineness (in Denier)	29.86	24.36
Range of Fineness (in Denier)	26.14-32.82	21.41-26.37
3. Avg. Fiber Length (in mm)	204	154.6
Range of Fiber Length (in mm)	68-583	67-375
CV %	45.36	45.85
4. Avg. Single fiber Strength (in gf)	160.32	115.06
CV %	52.36	50.91
5. Avg. Elongation (in %)	2.98	3.27
CV %	19.34	16.03



Un-treated and Treated Jute Fiber

*Technology No. 2:***TECHNOLOGY DEVELOPMENT FOR GENERATING LONG NATURAL BAMBOO FIBER THROUGH ECO-FRIENDLY PROCESS**

Under supervision of HMoT, a preliminary work was initiated to get long natural bamboo fiber from the Bamboo culm. The thick crude gummy bamboo fiber with varying denier was obtained from the rural sources (who are using traditional methods to get this crude fiber) and was subjected to combined enzymatic, chemical and scouring processes to remove unwanted materials along with gum. The resulting fiber was harsh and was bleached to get white thick fibers of varying deniers at the laboratory stage. Analysis of these fibers indicated that the fiber was strong, long and has 7% elongation. The scaling up the process is under progress.



Un-treated and Treated Bamboo Fiber

Technology No. 3:

COMMERCIAL ROLLER DRAFTING MACHINE HANDED OVER FOR PRODUCTION

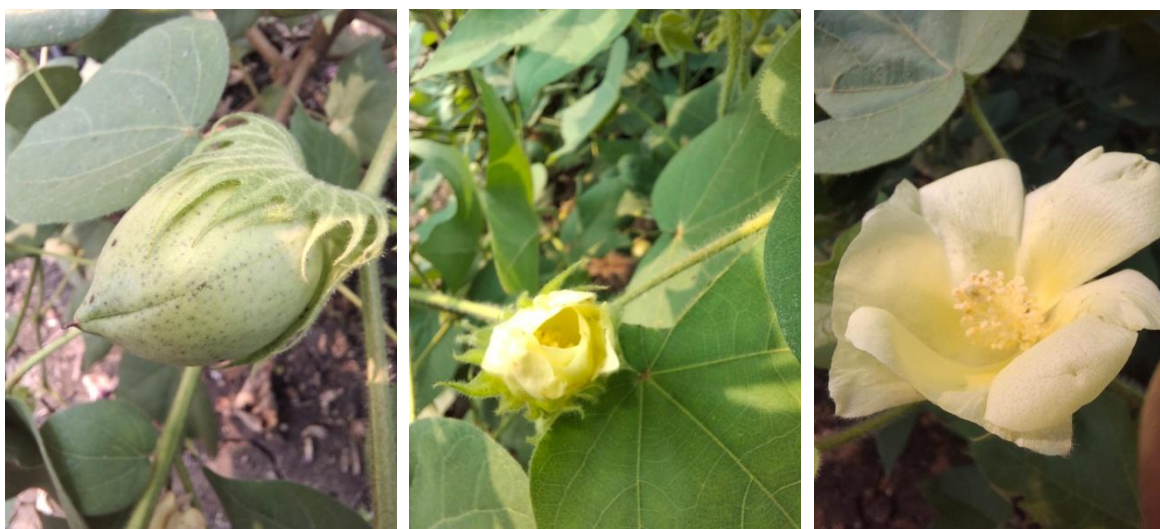
NRDC recognized IJIRA's effort of developing a new concept for jute processing and encouraged IJIRA to develop commercial machine based on its prototype. A commercial machine with four delivery was got manufactured and installed in a mill to confirm usefulness of machine for regular production. All teething problems have been sorted out and the machine has been handed over to the production department for production of Jute Sliver for spinning. Preliminary data shows that the productivity has increased 2 and half times with smooth spinning of the sliver.



*Technology No. 4:***ECONOMICALLY VIABLE AGROMULCH AT THE COST OF PLASTIC MULCH TO ENHANCE FARMERS' INCOME THROUGH IMPROVED CROP YIELD**

Pre-plantation field preparation for Brocoli cultivation including field perimeter designation, field clearance, application of weedcrite and manure have been completed for organic agromulch trial at Sargachi, West Bengal.

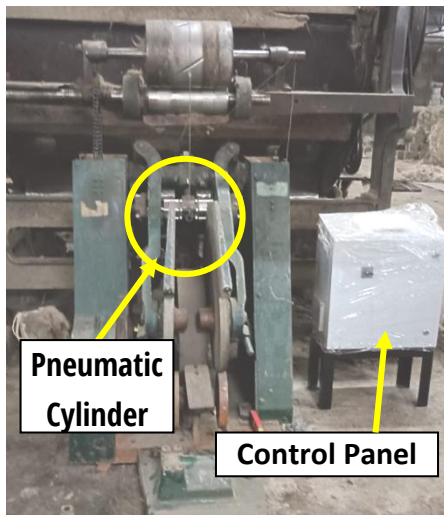
In continuation to last month report, the trial on cotton crop cultivation is continuing (DAP 105 days) using IJIRA's developed, low cost organic agromulch *vis-a-vis* cotton stalk mulch, polymulch along with control as testing bed in almost 1 acre of land at ICAR-CICR, Nagpur. Most of the cotton plants have started blooming. Comparative data collection will start soon.



Technology No. 5:

PNEUMATIC CONTROLLED ROLL FORMER AT CARDING MACHINE

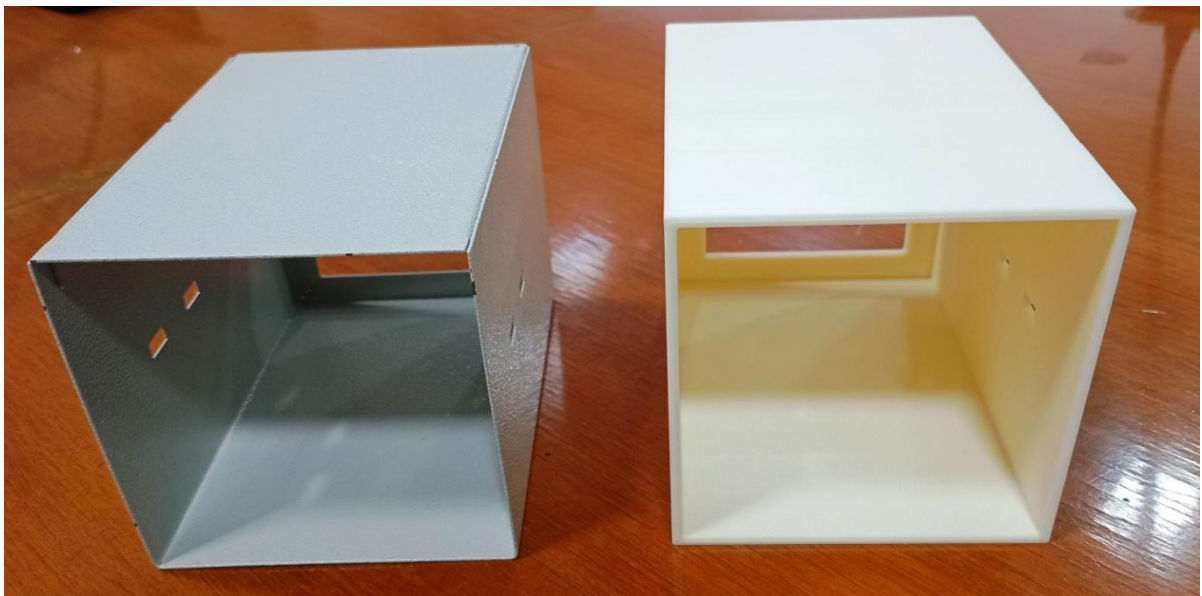
In continuation to IJIRA's focus of introducing automation & instrumentation in jute industry, a novel pneumatic based roll former along with sliver weight and moisture sensing devices was developed and installed in a jute mill in order to eliminate irregular compactness of rolls, oil contamination and online measurement of sliver weight. As reported last month, the teething problems are being resolved in order to find out the effectiveness of the technology at industry level.



Technology No. 6:

DESIGN AND DEVELOPMENT OF 3D PRINTED OUTER COVER OF DIGITAL MOISTURE METER

An assignment has been given to Webel-Fujisoft-Vara, Centre of Excellence, Industry 4.0, West Bengal, in order to make Digital Moisture Meter light weight, cost effective and having better aesthetic look. The initial designed outer cover made through 3D printing has been found to be 67% lighter than existing model. The weight of outer case of existing model is 334 gm.



Existing Metal Cover (334 gm)

New 3D Printed ABS plastic Cover (126 gm)

UPGRADATION OF SOIL/GEO TEXTILES LABORATORY IN IJIRA-NERC, GUWAHATI

In order to make soil/geotextile testing facility more effective for North-East region, soil testing equipments from Kolkata have been shifted to Guwahati as per IJIRA's Council directive. The laboratory is being put in operation through training of the staff for running these equipments as per SOP and NABL requirements.



An illustration of machines shifted from IJIRA-Kolkata to IJIRA-NERC

SKILL INITIATIVES

Presented curricula on,

- (i) *Junior Technical Supervisor for Geotextile and its Application in Civil Engineering* for Target group-1, and
 - (ii) *Technician for Natural Fiber based Geotextile and its Application* for Target group-2
- courses in the 1st meeting of Skill Development Committee (SDC) of National Technical Textiles Mission (NTTM), MoT, held on 15th October, 2024 at Udyog Bhawan, New Delhi.

Another presentation for 3 new curricula were given in 40th Meetings of the NSQC of NCVET. The details of curricula are given below,

- (iii) *Jute Manufacturing Technician with Elective 1 – Jute Yarn and Elective 2 – Jute Fabric*
- (iv) *Jute Machine Maintenance Technician with Elective 1 – Spinning Machinery and Elective 2 – Weaving Machinery*
- (v) *Quality Control Technician (Jute Production)*

Both committees have approved the aforesaid 05 courses.

TESTING / CONSULTANCY SERVICES

Performance of service department in the month of October 2024 –

	Physical Testing	Chemical Testing
Sample tested	7	55
Moisture Meter calibrated	34	-
FGJP Lot inspected & tested	-	04

	Inspection	Consultancy
No. of bales of B. Twill bags	81402	-
Consultancy to Mills	-	2

EVENTS

- ❖ A Non-disclosure Agreement has been signed between IJIRA and Webel Fujisoft Vara, Centre of Excellence in industry 4.0 to work on 3D printing technology
- ❖ 6 kg Samples each of nanocellulose, jute stick powder, wood powder and bamboo fiber are being given to Webel Fujisoft Vara, WB for initial study on 3D printing as a proof of concept.
- ❖ The Director, Dr. Pradip Chakrabarti and Shri Debi Prasad Gon have attended Skill development committee meeting of NTTM, Ministry of Textiles, Govt. of India.
- ❖ The Director attended TRA review meeting in NITRA, Ghaizabad.
- ❖ The Director attended two meetings with Joint Secretary (TTI), MD (NTTM) and JMD (NTTM), MoT or finalization of program of International Conference.
- ❖ The Director attended a meeting with the Joint Secretary to draft a letter for inviting speakers as well as, State Govt. departments in North-East states to send their representatives to participate in the upcoming International Conference.
- ❖ The Director held a meeting with CEO of Tier-1 companies on the subject of upcoming International Conference.
- ❖ Dr. Pradip Chakrabarti held a meeting with CEO of AB Composites on the subject of International Conference.
- ❖ The Director will be giving a presentation in forthcoming International Conference organized by **spe** (USA). The theme of the conference is **PLASTICS IN SUSTAINABILITY: BIOPOLYMERS AND BIOCOSCOMPOSITES** being held on November 4-6, 2024.
- ❖ The Director has been requested to deliver a talk on Sustainability in the upcoming conference in IIT, Delhi organized by the Textile Institute NISTI.
- ❖ IJIRA's two papers have been presented in 62nd Joint Technology Conference held in NITRA, Gaziabad. These papers were presented by Shri Partha Sanyal, Shri Biswarup Nandi and Shri Joyjit Mukherjee.
- ❖ Dr. Pradip Chakraborty and Ms. Ipsita Roy have met the Jute Commissioner to finalize meeting with the representatives of European Cocoa Association w.r.t. new European Norms for export of jute bags. They also invited the Jute Commissioner for the upcoming International conference. They have also met Secretary, NJB in his office and invited him for the International conference

1st & 2nd December, 2024

International Conference on
“NbS for Sustainability & Climate Change”

Taj Vivanta, Guwahati, Assam

For Booth Reservation, Exhibit & other information please visit
<https://ijira.org.in/international-conference/>



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Prepare to elevate your business to new heights!

The conference has one full session on geotextiles for north east region of India and is gold mine for B2B marketing, offering unmatched opportunities to showcase your brand and network and scoop up leads who are genuinely interested in what you offer.

Reserve your booth at this International Conference and position your brand at the forefront of innovation



Dr. Arindam Dey
 Associate Professor, IIT,
 Guwahati, Assam, India

Slope protection and Erosion control for clean water



Ms. Nido. Pubiyang
 Soil Conservation Officer,
 Directorate of Soil & Water
 Consrv. Dept. , GoAP, India

Application of Jute Geo-Textiles(JGT) for erosion control and slope stabilization at arable and non-arable land in Arunachal Pradesh



Mr. Jay Kumar Sharma
 CE, JICA, Uttarakhand, India

Landslide Treatment Activities by UFRMP using Natural Fiber based Solution & its future scope in Uttarakhand hilly areas.



Mr. Amit Jaiswal
 CE, Bridge Line, NF Railway,
 Guwahati, Assam, India

Scope of Slope Protection in North-Eastern Region Using Natural Fiber based Solution for Railways



**Dr. Lakshman Rao &
 Ms. Shreya Pravin**
 Consultant, India

Sustainable slope Stabilization: The role of Natural Fibres in Erosion Management

Don't miss this chance to expand your market reach and drive business growth. Limited premium booth spaces available - secure yours today

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