



IJIRA NEWSLETTER

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From the Desk of the Director



IJIRA Newsletter, a bi-yearly publication of our institution, was last published in 2003. It was interrupted during the troubled years that followed. As the turmoil gets over and a new Sun shines on IJIRA, we are happy to bring out the volume 4, Issue No -1 from January 2010. We hope that our 'Newsletter' henceforth will continue without any more stoppage and will highlight all current events and activities of the Association at regular intervals.

Current trends in Jute research acquire a multi-disciplinary characteristic and an accelerating momentum. Jute is now not just a major textile fibre, but also a raw material for non-textile products. In this backdrop Indian Jute Industries' Research Association now focuses on regaining its lost glory as a premier R&D Institute on Jute and allied fibres. R&D core team of IJIRA now consists of senior scientists and a group of newly joined young scientists. It is a matter of pride that IJIRA starting with six JTM research projects with effect from 2008, now has eleven projects at hand and many more in the pipeline.

Col. Amitava Poddar
Acting Director

R&D Activities

JTM MMIV Projects in Progress :

- **JTM Project No.1** – To find alternative to Conventional Jute Batching Oil for improving spin-ability and to produce Non-toxic and Hydrocarbon free Jute products.
- **JTM Project No. 4** - Manufacture of Jute Double Layer Braided Cloth by Appropriate Design Incorporation in Braiding Machine.
- **JTM Project No. 7** - Development of Light Fast, Dyed and Finished Jute Products.
- **JTM Project No. 19** -Development of technology for manufacturing of Ramie based Products.
- **JTM Project No. 20** - Development of Jute/Bamboo Composites for Application in Rural Areas.
- **JTM Project No. 23** - Development of Cold Sizing Technology of Jute Yarns.

New R & D Projects Allotted by Ministry of Textiles:

- Development of Aroma Based Home Textiles.
- Multifunctional Ceramic-based Nano-finishing of Outdoor Textiles by Sol-gel Method.
- Development of Low Cost Jute Bags for Food-grains.

IJSG Approved Projects:

- Development of Low Cost Nets by Netting Technology.
- Development of Rapid Test method for Determination of Unsaponifiables of Food Grade Jute Products.

Projects Under Consideration by the Ministry of Textiles:

- Development of Geo-textiles for Asphalt Overlay Application.
- Development of Fire Resistant Jute Composite Material for use in Flush Door Fabrication.

Projects Forwarded to JMDC:

- Development of Low Cost Dense Jute Non-Woven Fabric.
- Development of Jute-Bamboo Composites for Application in Rural Areas (Part-I) as Addendum to Development of Jute Bamboo-Composites Using Modified Cheaper Matrix Resin.
- Development of new cost effective eco-friendly lubricant on indigenously available vegetable oils (alternative to JBO/RBO)..
- Development of Cheaper Jute Batching Oil (Palm Oil) for Eco-friendly Processing of Jute and Allied Fibres.

Projects Proposal for IJIRA PSC/NERC:

To restructure IJIRA PSC/NERC, Guwahati with modern machineries and equipment, proposals have been sent to Textile Commissioner, Mumbai on:

- Development of Embroidery Training Facilities.
- Development of Garment Manufacturing Training Centre.
- Proposal for Augmenting Infrastructure at IJIRA-PSC, Guwahati for improving Training.

A Glimpse into IJIRA Updates

Workshop Conducted on IJIRA Technology

The project jointly undertaken by IJIRA with collaboration of Milltex Engineers (P), Coimbatore Ltd. has been completed and submitted to IJSG. A Seminar organized by IJSG, Dhaka on 12 August 2009 was represented by Col. Amitava Poddar (Acting Director) accompanied by Senior Scientists Dr. S.K. Chakrabarti, Mr. P.K. Chowdhury and Mr. Somen Das.

Jute Geo-Textiles

In the field of Jute Geo-textiles, a JMDC sponsored project, as per status report submitted to JMDC on 05 January 2010, the consumption jute geo-textile covering from April 2009 to December 2009 is recorded to be 32,13,712 Sq. M.

Food Grade Jute Products

During December 2009, 15 mills were inspected, 33 samples have been drawn and quantity inspected was 449.9 MT.

IJIRA PSC/ NERC Guwahati

IJIRA PSC/ NERC, Guwahati, has undertaken activities pertaining to modernization of handlooms in the North-East Region.

ERP Implementation

Implementation of SAP ERP is under progress since 2009.

Inspections by IJIRA Scientists

As per JMDC instructions Scientists of IJIRA carry out to inspection to the Jute Mills from time to time.

Foreign Visitors at IJIRA

IJIRA is keen to foreign collaboration to expand on the potentials of jute technology, product diversification and its industrial applications:

- **Mr Gajananan Bhat**, PhD, FTI (Professor of Material Sciences & Engineering, University of Tennessee) paid on 11 January 2010 to discuss on “Non-woven Research Especially Using Natural Fibers for Developing Sustaining Materials”.
- **Dr Russel Saunder**, Canadian Researcher visited IJIRA on 12 January 2010 to inspect the research facilities of IJIRA and had a discussion on “Potential of replacing E-Glass Reinforcement with Natural Fibers and its Application Areas”.

Annual Report 2008-2009

IJIRA Annual Report covering all activities for the year 2008-2009 has been sent to all members.

IJIRA Staff Manual

New staff manual as per the present day requirement, revising the old one new Staff manual has been prepared. This manual was approved by the Members of the Management of Council during the 176th Meeting of the Council of Management.

Library Modernization

The Association has undertaken Library Modernization Programme. Libsys Library Management Software has been installed for Library Automation as a part of it. The Catalogue of the Library will be made available on the internet. Subscription to online resources e.g. online journals, online databases have also been initiated.

Facilities Available at Pilot Plant

1. Preparation of

- a) Yarn of Various Counts
- b) Sliver from Carding /Drawing
- c) Spool/cop of various counts
- d) Beaming /warping from jute yarn.
- e) Weaving
- f) Ply Yarn of Various Counts
- g) Bleaching & Dyeing of Yarn/Fabric
- h) Stitching of Various Quality on Jute Fabric
- i) Lock Stitch
- j) Herakle Stitch
- k) Hemming Stitch

2. 3-D / 2-D Drawings of Model of Machineries and their parts using CADD System

IJIRA developed a ‘Moisture Meter’ with the system of Thermo-ionic valve in the year 1962, which has been modified to ‘Transistorized’ version with spike or flat (with circular area of contact) electrode which is standardised by The Bureau of as IS 9119. IJMA has been requested to circulate the information to Mills.

Testing Facilities at IJIRA

Chemical

1. TKP (Tamarind Kernel Powder)
2. Copper Content in Jute Samples
3. JBO Analysis
4. Hydrogen Peroxide Strength
5. Unsap Matter Content of Food Grade Jute Products
6. RBO Analysis
7. Emulsifier
8. Emulsion Stability
9. Oil content in yarn/fabric:
 - a) Elemental analysis of Jute (Micro & Macro elements)
 - b) Fibre identification in blends
 - c) Viscosity of Size paste
10. Colour Fastness to:
 - a) Light
 - b) Washing
 - c) Rubbing
 - d) Perspiration
11. Group Analysis of dyestuff
12. Water – Repellence Test
13. Fire Retardant Test

Biological

1. Mildew Test of Jute Samples
2. Rot-Proof Test
3. Microbial Load on Jute Products
4. Water Analysis
5. Damage Count of Jute Products

Composite Laboratory

1. Flexural Strength & Modulus
2. Tensile Strength & Modulus
3. Impact Strength
4. Water absorption % for 2 and 24 hrs
5. Boiling water absorption %
6. Thickness Swelling % for 2 and 24 hrs
7. Density
8. Brabender Plastic-order for study of melt blend Rheology

Physical Testing

1. Sliver:

- a) Mass per unit length
- b) Fibre Length
- c) Fibre Fineness
- d) Fibre Length Distribution
- e) Irregularity (Weight CV %)

2. Fibre:

- a) Length
- b) Fineness
- c) Bundle Tenacity
- d) Brightness
- e) Flexural Rigidity

3. Yarn:

- a) Count
- b) Strength
- c) Elongation
- d) Twist
- e) Abrasion Resistance

4. Fabric:

- a) Construction
- b) Strength
- c) Thickness
- d) Ballistic Work of Rupture (B.W.R)
- e) Abrasion Resistance
- f) Flexural Rigidity (stiffness)
- g) Fibre Shedding (on abrasion)
- h) Crease Recovery
- i) Water Permeability

5. Bag:

- a) Weight
- b) Dimension
- c) Seam strength
- d) Drop test.

6. Card/Gill Pin: Impact strength (shear)

7. Moisture Regain % Calibration and

8. Certification of Transistorized Moisture Meter

Geo-Textiles

1. Mass per unit area
2. Ends x Picks /dm
3. Thickness
4. Width
5. Apparent Opening Size (AOS)
6. Grab Tensile Strength
7. Wide Width Tensile Strength
8. Bursting Strength
9. Water Permeability
10. Index Puncture
11. Cone drop puncture
12. Copper Content
13. Bitumen Content
14. Trapezoidal Tear Strength