



# INDIAN JUTE INDUSTRIES' RESEARCH ASSOCIATION

## 2<sup>nd</sup> Review Meeting on Approved R&D Projects of IJIRA

- Agenda** : To review the activities of the R & D projects approved by the Ministry of Textiles, Govt. of India
- Venue** : Conference Hall, IJMA
- Date** : 13<sup>th</sup> June, 2016

The second review meeting on progress of six R&D projects of IJIRA, jointly sponsored by the Ministry of Textiles, Govt. of India and Indian Jute Industry, was held at IJMA on 13<sup>th</sup> June, 2016. The meeting was chaired by Shri D C Baheti, Chairman, IJIRA and attended by:-

1. Shri A K Lohia, Vice Chairman, IJIRA
2. Shri Ragavendra Gupta, Dy. Chairman, IJMA
3. Shri S K Agarwal, MD, Kamarhatty Co. Ltd.
4. Shri R K Roy, Technical Consultant, Office of the Jute Commissioner
5. Dr. U S Sarma, Director, IJIRA
6. Dr. Md. S. Rahman, Deputy Director, IJIRA
7. Dr. S K Chakrabarti, Deputy Director, IJIRA
8. Dr. Mahuya Ghosh, Scientist
9. Dr. Sandip Bose, Scientist
10. Shri Palash Paul, Scientist
11. Shri Debkumar Biswas, Scientist
12. Shri Partha Sanyal, Scientist
13. Ms. Ipsita Roy, Research Associate
14. Dr. Soumya Mukherjee, Research Associate

At the outset Dr. U S Sarma welcomed all the dignitaries and outlined the project activities at IJIRA. He mentioned that in this review meeting presentations will be given on the progress of the work done so far on the R&D projects by respective PIs along with proposed activities for the next three months.

Accordingly, a brief presentation on the general activities carried out by IJIRA was made by Shri Palash Paul. In his presentation he highlighted on the project-wise approved budget, CAPEX component and fund received from the Ministry of Textiles. He also mentioned that a separate bank account is opened for these R&D projects.

Out of 13 project based manpower requirement (for seven R&D projects, including Sanitary Napkin project sponsored by the National Jute Board), so far recruitment of 7 manpower is completed.

Similarly, out of 31 instruments/equipments required for these R&D projects, purchase and/or process for purchase of 23 instruments/equipments are completed. The list of items purchased was also shown during the presentation.



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At the end of this presentation, respective PIs of six R&D projects of IJIRA presented the current status of the research activities. At the end of each presentation, the committee members gave their suggestions. The salient issues discussed in the meeting are given below –

### **1. Development of Standards for Use of Jute Geotextiles (JGTS) in Rural Roads – Dr. Mahuya Ghosh**

Dr. Mahuya Ghosh, Scientist, IJIRA and PI of the project, during her presentation, mentioned that a soil testing laboratory has been set-up at IJIRA and gave details of purchases of a few types of soil testing equipments by IJIRA. She had also mentioned that set-up for simulation testing facility of JGT performance is being done. Collection and characterization of three types of soils; black cotton soil, local soil and lateritic red soil is completed. Visit was paid by her to Gloster Ltd. where she has provided the concept and design for preparation of leno- based jute woven grid on shuttle-less loom. Two different types of jute blended fabrics from Jute-PP tape core-sheath yarns and Jute-PP filament bi-component yarns are produced as an activity under these project.

After the presentation, following suggestions were received –

- Shri D C Baheti suggested that initially IJIRA should try to develop 100% jute based geotextiles to meet all the required specification. If 100% jute based geotextiles do not serve the purpose then only jute blended geotextiles may be tried. He also mentioned that efforts should be made to develop single construction fabric for all soil conditions. Regarding leno fabric preparation, he suggested that IJIRA may purchase a laboratory scale shuttleless loom for the same for quicker development of different trial fabrics
- Shri A K Lohia mentioned that the JGT construction should be judiciously designed to ensure manufacturing of the same by most of the jute mills with the existing facilities.
- Shri Raghavendra Gupta mentioned that after completion of this project, the study should specify the benefit of use of JGT either in terms of reduction in pavement thickness with similar life, as of control, or increase in life of road constructed with JGT or reduction in cost per kilometre of Road constructed and the conventional pavement thickness.
- Shri R K Roy also agreed to the issue raised by Shri Raghavendra Gupta and mentioned that the issue may be discussed during PAMC meeting.

### **2. Design and Development of 50 kg Capacity Cost Effective Jute Bags in the light of Threshold Physical Parameters and Mechanical Properties – Shri Palash Paul**

During the presentation made by Shri Palash Paul, Scientist, IJIRA and PI of the project, he mentioned that the project team has implemented most of the suggestions given in the first review meeting by the committee members. He mentioned that two major component of the project; establishment of yarn and fabric strength relation and determination of optimum porosity for foodgrain are completed. Determination of economic bag dimension is underway. He told that in the



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next three months sample bags will be prepared and final bag specification will be worked out in consultation with IJMA.

After the presentation, following suggestions were made –

- Shri A K Lohia mentioned that IJIRA should specify the grain size (food grain) for which the bags are being developed.
- Shri D C Baheti suggested that while determining the bag dimension, utilization of maximum reed width of looms should be considered.
- Regarding assessment of reusability of jute bags, Shri A K Lohia mentioned that few filled bags may be kept in stacked condition and their performance may be assessed after regular intervals.
- Shri D C Baheti mentioned that in addition to laboratory trials on reusability of jute bags, abrasion resistance behaviour of the bags may also be assessed.

### **3. Jute-Thermoplastic Composites for Green Product Development – Dr. S. Rahman**

Shri Debkumar Biswas, Scientist, IJIRA presented the activities carried out so far under this project. He also mentioned that a patent has already been filed for the products developed under pre-project activity. He mentioned that jute caddies with less thread waste is a desirable material for Jute-Thermoplastic composites, and accordingly IJIRA has identified five jute mills for supply of jute caddies. He also mentioned that fabrication of a mould is under process at CIPET, Haldia.

After the presentation, Shri D C Baheti suggested that IJIRA may examine the cost effectiveness of using long jute for the purpose.

### **4. Biochemical Softening of Hard Root Cuttings of Jute for Better Utilization – Dr. S K Chakrabarti**

Dr. S K Chakrabarti, Dy. Director, IJIRA and PI mentioned that systematic available literatures survey is going on for this project parallel to standardization of biochemical formulation for softening hard roots for jute. He mentioned that pilot scale trials have been carried out at IJIRA and mill trial is going on at Hukumchand Jute Mills with satisfactory performance. He added that instead of in 3 mills, as decided earlier, trials will be taken in 5 jute mills. He also mentioned that the quantification of batch cost reduction by using this biochemical formulation will also be carried out.

After the presentation, following suggestions were received –

- Shri S K Agarwal suggested that trials of efficacy of the formulation should be carried out on Assam TD 5 and Daisee TD 6 variety root cuttings and also for mesta grades.



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- Shri D C Baheti mentioned that quantification of batch cost reduction is required for such biochemical intervention in root softening.

### **5. Faster Retting of Jute Plant through Biochemical Intervention – Dr. S K Chakrabarti**

Dr. S K Chakrabarti, Dy. Director, IJIRA and PI of the project presented the various activities carried out so far under this project which includes systematic literature review and enrichment of microbial consortium at IJIRA Microbiological Laboratory. He also mentioned that IJIRA will shortly conduct pre-retting awareness program among the farmers. In addition to Jute I-CARE program with IJIRA-SUBHRA in three districts i.e. Hooghly, Nadia and Murshidabad, Dr. S K Chakrabarti mentioned that retting program with IJIRA-SUBHRA will be undertaken in North 24 Pgs. District also this year involving 150 – 200 farmers altogether with an aim to expand it in next year covering districts of North Bengal as well. He also requested the jute mills to participate in this project.

After the presentation, Shri D C Baheti had shown interest and mentioned that he would be happy to provide at least 25 farmers for their organic raw jute fields for trials with IJIRA-SUBHRA and suggested Dr. S K Chakrabarti to discuss the matter with Shri I J Sharma of Gloster Ltd.

### **6. Utilization of Jute Sticks and Jute Waste for Extraction of Value Added Chemicals for Industrial Uses – Dr. Sandip Bose**

Dr. Sandip Bose, Scientist, IJIRA and PI of the project mentioned that as per the suggestion received in the first review meeting, two different process routes for achieving value added chemicals from jute stick and jute fibre waste have been finalized. He also mentioned that apart from the process of procuring equipments, efforts are also been made for hydrolysis experiments which is the first step to disintegrate the chemical bonding in the biomass.

After the presentation, following suggestion was received –

- Shri A K Lohia queried about the use of jute dust for Boiler the purpose. Dr. Sandip Bose mentioned that boiler jute dust can not be used for extraction of value added chemicals as there is very few residual fibres present in the dust. It was clarified that the essential raw material for the purpose would be fibre biomass. The process would consist of extraction of lignin in the form of lignosulphonate and from the residual hollow cellulose; bio-fuel in the form of ethanol would be produced after hydrolysis and fermentation.

The committee had decided that the review meeting will be held on quarterly basis.

The meeting was concluded with a Vote of Thanks to the Chair.