



ILRI Newsletter

1 / 98

JAN-JUN 1998

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From the Director's Desk

CONGRATULATIONS

The Director and the Staff members of Indian Lac Research Institute, Ranchi heartily congratulate Dr. Anwar Alam on his selection and joining as Deputy Director General (Engg.), ICAR.

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Versatility and non-toxic nature of lac resin has an edge over synthetic resins and has potential for wide variety of applications. But this potential has remained largely untapped due to perhaps, our overdependence on export of semi-refined lac. The unforeseen demand from overseas is detrimental to healthy growth of lac trade and cultivation and pushes us into vicious cycle of demand, supply and price fluctuation.

One of the better ways to come out of this cycle is to maintain a balance between internal consumption and export of lac by devising means to boost its domestic demand to an optimum level for growth and sustainability of the commodity.

Indian Lac Research Institute organised a two-days symposium on "Strategies for Promotion of Lac Consumption" which provided a platform for interaction to all those concerned with development of lac. Many fruitful recommendations emerged from the deliberations during the symposium.

Complementing with this activity, a "Kisan Mela" was organised in January by the Institute for the first time to make the farmers of the region aware about the latest in the field of lac cultivation, which generated an enthusiastic response among the farmers. We intend to make this an annual feature.

(S.C. Agarwal)

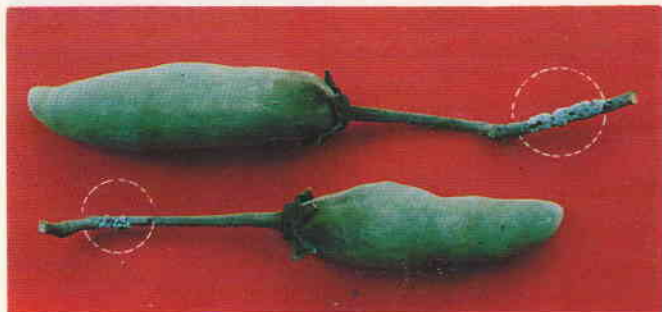
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RESEARCH HIGHLIGHTS

Adansonia digitata - a new host of lac insect

Adansonia digitata (Fam., Bombacaceae) - an exotic plant species of African origin has been recorded as a host of lac insect at Ranchi (Bihar). On critical examination, the lac insect thriving on this host has been identified as *Kerria fici*. Lac insect colonies developing on peduncle of fruits of this host matured during October, thus following a *rangeeni* cycle. This plant species is of great economic significance for timber, edible fruits and medicinal uses. It is occasionally cultivated in some parts of U.P., Bihar, Maharashtra and Tamilnadu.



Insect sex pheromone components from aleuritic acid

Insect sex pheromones are effectively used in pest management. A simple method has been evolved for the synthesis of (Z)-9-hexadecen-1-ol and its acetate. Both components are present in the sex pheromone of *Heliothis subflexa* while the latter is present in those of *Mamestra brassicae*, *Pseudaletia unipuncta* and *Naranga aenescens*.

Settlement and mortality studies of lac insect stocks

Performance of different lac insect stocks (*Kerria* spp.)

collected from different localities and host plant species was compared with respect to density of settlement and percent initial mortality of nymphs on *Flemingia macrophylla* - a promising bushy lac host. The mean density of settlement varied between 57 to 175 nymphs per square centimeter of the shoot surface whereas, the percent mortality varied between 12.94 to 42.40. No correlation was found between the two traits. The genetic co-efficient of variance and heritability (in broad sense) for mean density of settlement was estimated to be 16.33% and 85% and for percent mortality, the respective values were 18.27% and 31.86% suggesting independent genetic control of the two productivity linked biological attributes of these insects.

Lac based wood varnish : Technology assessment

Melfolac formulation based on dewaxed lac and butylated melamine resin was evaluated vis-a-vis marketed wood varnishes. It was found that Melfolac possesses better shelf life, gloss and drying characteristics. Heat and water resistance were at par to those of commercial products.

Research completed

The project "Improvement in the method of preparation of lac dye and aleuritic acid" has been concluded this year. The major achievements of the project are :

- ★ The method of preparation of lac dye from the waste water effluents, has been standardised for preparation of pure lac dye on lab-scale with an average yield of 0.25% on the weight of sticklac, having 90% dye content and 0.8% solubility in water at 30±5°C.
- ★ In the method of recovery of aleuritic acid from seedlac (Fresh & old) & *kiri* - a by-product of lac industry, all the conditions of hydrolysis, decomposition and crystallization, have been optimised. This has resulted in 20% and 11% average recovery of aleuritic acid from seedlac and *kiri* respectively.
- ★ The conditions of recovery of aleuritic acid directly from sticklac, have been standardised with approximately 12% yield.

An efficient and indigenous device for lac pest management

Exploiting size gradient and phototactic nature of adult insects, a simple device has been developed to separate predators, beneficial and inimical parasitoids of lac insect. The usedup broodlac or sticklac harbouring these insects is kept inside a container with a separating unit fitted on, which can sort out beneficial parasitoids into a separate chamber from the emerging mixed population. These beneficial insects can be released in the field to augment their natural population to act as biological control agents of predators.

The device consists of (i) a cylindrical opaque plastic pipe fitted with a wire net on one side and open at the other end (ii) another cylindrical opaque plastic tube (Chamber 1) of slightly smaller diameter which fits snugly into the first tube and is fitted with a fine wire net on one end and open at the other (iii) a small transparent plastic container which fits into the Chamber I. The three components act as a unit which is fitted on one side of the locally available canister for keeping usedup broodlac/sticklac. Total cost of the device is less than Rs. 50. The size of container can be altered depending on the quantity of the lac. Accordingly more than one unit can be fitted into a large container.



TRANSFER OF TECHNOLOGY

Training programmes on lac culture and product/process demonstrations conducted during the period

Sponsored by	Duration	No. of participants	Target Group
KVK, RK Mission, Ranchi	One Day	145	Farmers
INDALCO, Silli (Ranchi)	One Day	31	Farmers
Action for Food Production (Ranchi)	One Day	18	Farmers
KRIBHCO, Purulia (WB)	One Day	15	Farmers
Palamau Sarvodaya Mandal	One Day	2	Social Workers
Xavier Institute of Social Service, Ranchi	One Day	76	Students
Forest Department (MP)	One Day	48	Forest rangers
New Hope Leprosy Trust, Muniguda (Orissa)	One Week	9	Farmers and field workers
Xavier Institute of Social Service, Ranchi	Two Months (Summer placement)	4	Students

Product/Process demonstration	No. of persons	Name of Person/Industry
Aleuritic Acid	2	* M/s Barendra Nath Sreemany, Calcutta * M/s Sami Chemicals and Extract Ltd., Bangalore
Dewaxed Bleached Lac	3	* M/s Barendra Nath Sreemany, Calcutta * M/s Shri Ganpati Traders, Dhamtari, M.P. * M/s Miss Marcel, Calcutta
Testing & Analysis of Lac	3	* M/s Barendra Nath Sreemany, Calcutta * M/s Tajna Shellac Factory, Khunti (Ranchi) * M/s Tajna River Industries Pvt. Ltd., Khunti (Ranchi)

ILRI organises Kisan Mela



A one-day Kisan Mela was organised by the institute on 17th January, 98. Chief guest Dr. MA Mohsin, VC, Birsa Agricultural University, Ranchi inaugurated the mela and Swamy Shashankanand of Divyayan Krishi Vigyan Kendra chaired the function.

About 400 farmers especially lac cultivators including farm women of neighbouring villages attended the mela. A *Kisan Goshthi* was also organised for the benefit of the farmers wherein queries relating to lac cultivation were attended to.

Various organisations i.e., ILRI, KRIBHCO, IFFCO, Central Tasar Research and Training Institute, Central Horticultural Experiment Station, Divyayan KVK and some business establishments put up impressive stalls depicting different aspects of Lac cultivation, Agriculture, Horticulture, Fish farming, Home Science and Animal Husbandry. The Kisan Mela generated an enthusiastic response among the farmers.

National Symposium at ILRI

A two-day National Symposium on, "Strategies for Promotion of Lac Consumption" was organised by the Institute on 14-15 May, 98 to commemorate India's Golden Jubilee year of Independence. Sri Rajiv Kumar, IAS, MD, Ranchi Industrial Area Development Authority inaugurated the symposium and Dr. RP Kachru, ADG(PE), ICAR presided over the function. Welcome address was delivered by Dr. SC Agarwal, Director, ILRI and Dr. KK Kumar, Convenor and Head, TOT Division proposed vote of thanks.



About 100 delegates representing lac industry, R&D organisations, GOs and extension workers from all over the country attended the symposium.



A compendium consisting of abstracts of papers presented and research highlights of the last decade of ILRI was published. A book, "Proceedings of the symposium on Bioresources of Chotanagpur and Their Industrial Significance" and seven folders on lac based product technologies and the training programme of the Institute were released on the occasion.

Radio / TV Talks

"Lakh Keet Palan mein Samekit Nashi Jeev Prabandh" by Dr. K Krishan Sharma was telecast on 23.2.98 by DDK, Ranchi.

"Samaya-Samaya par Lakh Utpadakon ko Dee Jane Wali Sarkari Suvidhayen" by Dr. SK Saha was broadcast on 28.2.98 by AIR, Ranchi.

"Lakh Utpadan ke Vagyanik Tareeke Apnayen aur Adhik Upaj Prapt Karen" by Mr. R Ramani was broadcast on 28.03.98 by AIR, Ranchi.

"Lah Keet Palan ke Adhunik Tareeke Avam Unke Labh" by Dr. A. Bhattacharya was broadcast on 21.06.98 by AIR, Ranchi

Lac Exposure Programme

The Institute Museum entertained 240 visitors. Different aspects of lac culture, processing and applications of lac depicted in the museum were explained to them.

Twelve batches consisting of 305 farmers sponsored by different NGOs who visited the Institute were shown around the Plantation and the Museum to motivate them to adopt scientific methods of lac cultivation.

Samples of lac and related materials were supplied to six different organisation/individuals on request.

Participation in Kisan Melas and Exhibitions

The institute participated in various exhibitions/Kisan melas by putting up stalls on different aspects of lac culture, processing and uses of lac at:

- * Industrial seminar at Jagdalpur, M.P. on 5 & 6.1.98.
- * Kisan mela organised by INDALCO, Chota Muri on 7.2.98.
- * Exhibition organised by Canara Bank, Kamre Branch on 25.2.98.
- * Kisan mela organised by RK Mission Ashram at Getalsud on 3 & 4.3.98.

Literature Published

The following books/folders were published :

- * "Palas tatha Ber par Lakh ki Sammilit Kheti ki Unnat Vidhi".
- * "Aiye Seekhen - Unnat Vidhi se Lakh ki Kheti".
- * Proceedings of the symposium on Bioresources of Chotanagpur and Their Industrial Significance.
- * High Thermal-resistant baking-type modified shellac insulating varnish.
- * Air drying-type anti-tracking modified shellac insulating varnish.
- * Aleuritic acid - a fine chemical from lac.
- * Isoambrettolide from aleuritic acid.
- * ILRI - Training Prospectus. (in Hindi also)

Quality Control Laboratory

The Quality Control laboratory of the Institute principally caters to the requirements of the industries as well as exporters of lac. It provides testing facilities as per standards laid down by BIS on payment basis. During the period 66 samples of shellac/seedlac/bleachedlac/lac dye were received from different Govt. Organisations/Industries and in all 140 tests were carried out.

Seminars attended / Visits

A team of experts along with Dr. SC Agarwal, Director ILRI, visited RFRS, Dharamjaigarh to evaluate the working conditions and also KVK, Bilaspur affiliated with Indira Gandhi Agricultural University, Raipur to explore the possibility of shifting the RFRS, Dharamjaigarh to other potential area. The itinerary included a visit to an NGO-AGRAGAMI in Kalahandi, Orissa. A demonstration of pruning technique of *kusum* trees was given to the staff of the NGO.

Dr. SC Agarwal presented a paper in an Industrial seminar held at Jagdalpur (M.P.) on 5-6th January, 98. Some entrepreneurs evinced interest in establishing lac processing industries with the aid of Govt. of M.P.

Dr. A Bhattacharya and Dr. KK Sharma attended a seminar on "Entomology in 21st Century" and presented papers, held at Udaipur (Rajasthan) on 30.4.98 to 2.5.98.

Institute Seminar

Lac insect as a major source of honey-dew (in Hindi) by Dr. KK Sharma on 23.5.98

EVENTS

Training-cum-Demonstration Center on lac at Balrampur (Purulia, W.B.)

An MoU was signed on 12.02.98 at Purulia (W.B.) between Dr. SC Agarwal, Director, ILRI and Mr. Arijit Kumar Guha, Joint Director of Industries, Directorate of Cottage and Small Scale Industries, Government of West Bengal for establishing a Training-cum-demonstration center on lac at Balrampur

(Purulia). The Berada broodlac farm consisting of 4,600 *palas* trees was handed over to ILRI the same day. During the brief function Mr. S.S. Paine, G.M., District Industry Center, Purulia and Dr. TK Das, LDO, Purulia were also present from West Bengal Government while, Mr. R Ramani and Dr. A Bhattacharya, Senior Scientists represented ILRI. The Institute has been provided with a free office accommodation within the premises of West Bengal Lac Artisan Co-operative Society Limited, Balarampur.

**Staff Research Council (SRC) Meeting**

The SRC meeting held on 17-18 March, 98 was chaired by Dr. SC Agarwal, Director and attended by all the scientists of the Institute. The SRC discussed the progress of research projects carried out during 1997-98. It also considered and recommended eight new project proposals for placing before the Research Advisory Committee for approval, under project based budgeting.

Research Advisory Committee (RAC) Meeting

The 4th meeting of RAC was held on 26-27 March, 98 to finalize the research programme for 98-99. The meeting was chaired by Dr. AV Rama Rao and was attended by Dr. RP Kachru, ADG (PE), ICAR; Dr. SC Agarwal, Director, ILRI; Mr. RL Sharma (Tajna Shellac Factory, Khunti) and Dr. SK Saha, Pr. Sc. and Head, Division of LP&PD. Out of the eight new proposals considered by the RAC, seven were approved. The committee finalized the core programme of the Institute for the next five years. QRT report of the Institute was also discussed.

Institute Joint Staff Council (IJSC)

As per order of the Council IJSC was reconstituted with the following members:

Director, ILRI, Ranchi - Chairman

Official side / Nominated members

Dr. KK Kumar, Head, TOT Division - Member

Dr. DN Goswami, Sr. Sc. - Member

Dr. BP Singh, Sr. Sc. - Member

Dr. KK Sharma, Sc. (Sr. Sc.) - Member-Secretary

Administrative Officer - Member

Finance & Accounts Officer - Member

Staff side / Elected members

Mr. ML Ravidas - Member (Technical)

Mr. RP Srivastava - Member (-do-)

Mr. BN Gope - Member (Administration)

Mr. BK Rajak - Member (-do-)

Mr. Marcus Kujur - Member (Supporting)

Mr. Dhiraj Prasad Singh - Member (-do-)

Participation in East Zone Sports Meet

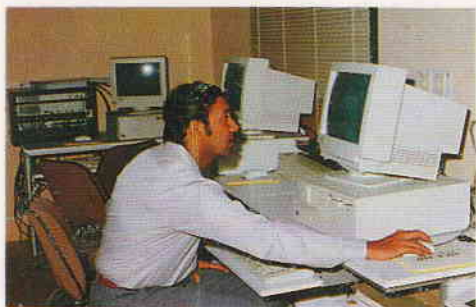
The ILRI participated in East Zone Sports Meet held at IISR, Lucknow during 15.12.97 to 19.12.97. Mr. RC Mandap SSG-I won 2nd position in the 400 meters race event. Dr. KK Kumar Pr. Sc. & Head, TOT Division was Chief-de-Mission and Mr. KK Prasad, Technical Officer accompanied as Team Manager.



INFRASTRUCTURE DEVELOPMENT

Local Area Networking has been completed and made functional connecting all the major Divisions and Sections of the Institute.

The publicity wing of the Transfer of Technology Division has been equipped with Gestetner Copyprinter 5385 for production of multiple copies of publicity and other materials of superior quality at a cheaper rate. The equipment is provided with six colour options and a computer interface for copying directly documents (upto A-3 size) composed on a computer.



ILRI library

The Library has been restructured into separately located Book, Journal, Electronic and Miscellaneous sections. Book Section holds about 8000 books on various subjects. The Journal Section stocks 15000 back volumes in addition to 85 currently subscribed periodicals. 26 new books/magazines/reports have been acquired during the period.

Miscellaneous library services include Photocopying, Lamination and Sale/Distribution of Institute publications. A CD-ROM player has also been installed.

HRD

Dr. Niranjan Prasad, Scientist of T.O.T. Division successfully completed 61st Foundation Course for Agricultural Research Service (FOCARS) conducted at National Academy of Agricultural Research Management, Hyderabad from October 3, 1997 to January 29, 1998

PERSONALIA

Appointments

Sri SK Pandey, Sc. (Mech. Engg.) w.e.f. 07.01.98

Sri Sadho Mahli, Casual Worker (Temp. Status) w.e.f. 24.01.98

Promotions

Sri SKM Tripathi, T-8 to T-9 w.e.f. 01.01.95

Sri M Islam, T-5 to T-6 w.e.f. 01.07.95

Sri R Prasad, T-5 to T-6 w.e.f. 01.07.95

Retirements

Sri AH Naqvi, Sr. Sc. on 31.01.98

Dr. A Pandey, Sr. Sc. on 31.01.98

Sri Md. Ali Ansari, T-II-3 on 31.01.98

Sri RC Maurya, T-5 on 31.03.98

Sri KC Jain, T-I-3 on 30.06.98

Transferred to other Institutes

Sri D Dhingra, Sc. to CIPHET, Ludhiana on 24.01.98

Mrs. S Chopra, Sc. to CIPHET, Ludhiana on 24.01.98

Sri NK Sharma, T-7 to IARI, New Delhi on 23.03.98

Transferred from other Institute

Sri G Singh, Sr. Sc. from CARI, A&N Islands w.e.f. 20.03.98

MISCELLANEOUS

Sri Govind Sharma, Regional Officer, NRDC from Regional Interaction Office, IIT, Kharagpur visited the Institute on 9.2.98 and interacted with scientists on the development and exploitation of technical know-how, inventions, patents etc. He briefed that the NRDC works as an interface between laboratory and industry. Some projects of mutual interest were discussed.

Distinguished visitors

Dr. RP Kumar, AIIMS, New Delhi

Prof. Amitabh Chatterjee, Head, Deptt. of Lib. & Information Sc., Jadhavpur University, Calcutta.

Mr. DK Mauavalau, IAS, MD, TRIFED, New Delhi.

Mrs. Olive Tigga, Distt. Agriculture Officer, Ranchi.

Mr. Surya Narain Sharma, LRO, DAO, Ranchi.

Dr. SC Joshi, ADG (Media) ICFRE, Dehradun.

Mr. Anil K Sahu, Dy. Chief Conservator of Forests, Balaghat, MP.

Mr. Rajiv Kumar, IAS, MD, RIADA, Ranchi.

Dr. BC Mitra, Director, NIRJAFT (ICAR), Calcutta.

Dr. HD Kulkarni, Dy. Chief Manager (PR), ITC, Secunderabad.

From abroad

Mr. Timmyt Tom Kottles, NY, USA.

Dr. R Steinhoff, Idaho, USA.

Mr. Johan Marshall, Idaho, USA.

Mr. Chauks R Hatch, Idaho, USA.

Mr. Chalos W Meketta, Idaho, USA.

Obituary

The Director and the staff of the institute deeply condole the demise of the following colleagues :

Dr. BC Srivastava, Sr. Sc. on 23.03.98

Sri Fatemus Khalkho, Dispensary Attendant on 08.02.98

Sri Tuisa Munda, Pump Operator on 01.03.98

Sri Jharia Pahan, Beldar on 03.06.98