



### SEMINARS:

An All India Seminar on “Use of B Heavy Molasses or Alternative Feed Stocks for Maximizing Ethanol Production” was organized jointly by NSI-STAI on 21<sup>st</sup> January 2015 at India Habitat Centre, New Delhi.

During the seminar, technical aspects and economics of using B heavy molasses & other feed stocks e.g. Sweet Sorghum, Cassava, Cellulosic wastes & intermediate other sugar house process liquors was discussed.



### TRAINING PROGRAMME:

(i) Three days training programme on “Sugar Manufacturing & Quality Control” was organized at National Sugar Institute from 20<sup>th</sup> to 22<sup>nd</sup> January 2015 for the Food Technologist from M/s Tropilite Food Pvt. Ltd., Gwalior M.P. The participants were imparted theoretical as well as practical training on quality parameters management & analysis during production of raw, refined & plantation white sugar.



(ii) On the request of M/s EID Parry Group, a two weeks accredited training programme was organized by the Institute at M/s Silk Road Sugar Mills, Kakinada, Telangana for the technical personnel of the factory. During the programme, theoretical concepts of various unit operations e.g. raw sugar handling, melting, clarification, de-colorization, crystallization & bagging etc carried out in sugar refinery were elaborated to the participants.

### **SKILL DEVELOPMENT PROGRAMME:**

A programme on “**Holistic Development & Role of Education**” was organized was organized for faculty & students of the Institute on 24.03 2015. On this occasion, Prof.(Dr.) A.P.S. Bhaduria briefed the participants on importance of “communications” & “interaction” for effective teaching.



### **PROJECT WORK:**

M/s Indian Sugar Exim Corporation Ltd., New Delhi has signed a collaborative research project entitled “A Study on Methodologies for Conversion of Surplus Condensate in to Suitable Water Resource in Sugar Factories to Achieve Zero Fresh Water Requirements”. During the period data with respect to fresh water usage, effluent generation, treatment and hot/ cold water management was collected from sugar factories situated in Uttar Pradesh, Maharashtra, Karnataka and Uttarakhand. Samples of various streams of hot and cold water collected have also been analyzed for various parameters.



### **ACADEMICS:**

Regular Classes of ANSI (Sugar Tech.) First year & Diploma in Industrial Fermentation & Alcohol Technology were conducted during the period.

In plant training of ANSI (Sugar Tech.) and ANSI (Sugar Engg.) students continued in commercial factories.

Educational tour of Diploma in Industrial Fermentation & Alcohol Technology course was conducted in the month of February, 2015. Planning for conducting Educational Tour of the ANSI (Sugar Tec.) students during April, 2015 was finalized.

Entrance Examination Notice published in March, 2015 for admission to various courses for the academic session starting from July 2015.

For revision of syllabus for various courses, views from Sugar related organization and other eminent experts have been invited so as incorporate them in the syllabus effective from academic session 2015-16.

### CONSULTANCY SERVICES:

During January to March, 2015 consultancy services were provided to the following factories and organizations:

1. M/s K M Sugar Mills Ltd. Masodha, Faizabad, U. P.
2. M/s Lokmangal Agro Industries Ltd., Solapur, Maharashtra.
3. M/s S. Nijalingappa Sugar Institute, Belgavi, Karnataka
4. M/s Punjab Coop Sugar Federation Ltd., unit-Morinda, Punjab.
5. M/s Punjab Coop Sugar Federation Ltd., unit-Nakodar, Punjab.
6. M/s Punjab Coop Sugar Federation Ltd., unit-Ajnala, Punjab.
7. M/s Punjab Coop Sugar Federation Ltd., unit-Batala, Punjab.
8. M/s Punjab Coop Sugar Federation Ltd., unit-Gurdaspur, Punjab.

9. M/s Kisan Coop Sugar Factory Ltd., Sarsawa, Saharanpur, U.P.
10. M/s Sharawasti Kisan Sahakari Chini Mills Ltd., Nanpara, Bahraich, U.P.
11. M/s Orient Green Power Company Pvt. Ltd., Rajasthan.
12. M/s Gobind Sugar Mills, Aira, U.P.
13. M/s Maharashtra Vidhyut Nigam, Nagpur, Maharashtra.
14. M/s Baramati Agro Ltd., Baramati, Maharashtra.
15. M/s Shiv Sugar & Agro Product, Belgaum, Karnataka.
16. M/s U.P. Cooperative Sugar Factories Federation Ltd., Unit-Sathiaon, Azamgarh
17. M/s Gem Sugar Ltd., Kundargi, Prilagi Taluk, Bagalkot, Karnataka.
18. M/s Jawahar S.S.K. Ltd., Kolhapur, Maharashtra.
19. M/s Dalmia Bharat Sugar, Jawaharpur, Sitapur, U.P.
20. M/s Kanoria Sugar & Genral Mfg. Co. Ltd., Captainganj, Kushinagar. UP
21. M/s The Haryana Coop. Sugar Mills Ltd., Kath Mandi, Rohtak, Haryana.
22. M/s The Haryana Coop Sugar Mills Ltd., Panipat, Haryana.
23. M/s Uttarakhand Sugars, Uttarakhand.

### RESEARCH :

Research on following topics continued and on many problems laboratory/factory scale trails were also conducted successfully.

1. **Dying of bagasse using flue gas from boiler furnace:** Based on the studies made & data collected a paper has been sent for publication describing importance of bagasse drying in chancing power generation.
2. **Cane and/ Bagasse Diffusion process for extraction of juice to assess possibilities of**

**replacing conventional milling process:**

Study of different type of Diffuses in working at present in the country has been made. A paper shall be published in the Seminar being organized by NSI & SNSI in April, 2015 at Belgaum (Karnataka).

3. **Development of Sensor for determining Staleness of cane:** Studies at various locations of Uttar Pradesh & Maharashtra completed, compilations & analysis of data in progress.
4. **Process options for producing Sulphur-less sugar for technical/ commercial viability.:** After carrying out Lab scale experiments at M/s Lokmangal Agro Industrial Ltd., Solhapur, Maharashtra, further Lab trials were made with the juices available in Northern India so as to ascertain efficiency of envisaged Carbo-phosphotation process.
5. **Gasification of bagasse:** Preliminary work has been carried out and now trials on pilot scale shall be taken up in collaboration with M/s Ankur Scientific Energy Technologies Pvt. Ltd., Vadodara, Gujarat. Bagasse required for the experiments has been procured and detailed analysis is in progress.
6. **Production of Alcohol from Cassava:** Research work has been taken up in collaboration with S Nijlingappa Sugar Institute, Belagavi, Karnataka. Samples of Cassava Chips & flour have been received from Central Tuber Research Institute, Kerala. Enzymes have also been procured for M/s Catalyst, Noida. Experiments on Conversion of Cassava starch to fermentable Sugars have been initiated.
7. **Use of enzymes for increasing fermentability of molasses:** Initial Studies indicate use of enzymes may result in increase

in yield of alcohol by 1-3 liters per ton of alcohol. Cost economics also being worked out.

8. **Optimization of various factors affecting longevity of Sugarcane Juice preservation period:** Experiments with Sugarcane Juice of cane variety Colk 94184 have been taken up using various preservatives e.g. ascorbic acid, sodium meta- bi- sulphite etc .at ambient and cold storage conditions .More preservatives shall be used in future studies.

**RESEARCH PAPER PUBLISHED/  
PRESENTED/SENT FOR PUBLICATIONS:**

During the period following papers were presented/published/sent for publication:

1. **“Production of Ethanol in India Challenges & Opportunities”** by Narendra Mohan presented at All India Seminar organized by NSI-STAI at New Delhi on 21<sup>st</sup> January, 2015.
2. **“Alternate Feedstock for Alcohol Production”** by Santosh Kumar and Seema Paroha presented at All India Seminar organized by NSI-STAI at New Delhi on 21<sup>st</sup> January, 2015.
3. **“Scenario of Automation in Sugar Industry-Milling and Processing”** by Brajesh Singh, Virendra Kumar and M. K. Banerjee published in Indian Sugar Journal in January, 2015.
4. **“Recent Developments in White Sugar Solution Colorimetry”** by Sudhanshu Mohan published in Indian Sugar Journal in January 2015.
5. **“Role of Bagasse Drying in Controlling Uttar Pradesh Power Crisis”** by D. Swain sent for publication in the journal “Energy Next”.

## PREPARATION & SALE OF SUGAR STANDARDS:

An Expert Committee meeting was held on 16<sup>th</sup> January, 2015 at the Institute to approve the Sugar Standards Grades for the crushing season 2014-2015 under the Chairmanship of Director, National Sugar Institute.

The meeting was attended by the Managing Director, National Federation of Co-operative Sugar Factories, Secretary, U.P. Sugar Mills Association, President, The Sugar Technologist Association of India, Deputy Director (Sugar Technology), M/o Consumer Affairs, Food & Public Distribution, and representative from Indian Toxicology Research Institute, Lucknow. The committee approved seven nos. sugar grades for the sugar season 2014-15.

Bureau of Sugar Standards (BSS) issued 1277 sugar samples to 210 various sugar factories up to 31<sup>st</sup> March, 2015.



## VIDEO CONFERENCING:

Institute participated in the video conferencing on 19 January, 2015 through which Hon'ble President of India addressed the Vice Chancellors, and Directors of various Universities and Technical Institution. It was attended by the faculty member & students of the Institute.



## MEETINGS:

1. Director, attended a meeting with the Joint Secretary (Works) at New Delhi on 01.01.2015 to review the progress of work taken up under Plan at NSI, Kanpur during Financial Year 2014-15.
2. Director attended the meeting with the officers of ISEC, ISMA and NFCSF New Delhi, on 29.01.2015, to discuss the projects under taken by the Institute.
3. Director attended meetings with Principle Secretary (Sugar) U.P. and Managing

Director, UP Cooperative Sugar Factories Federation Ltd. to advice on setting up a new 3500 TCD sugar mill at Sathiaon (Azamgarh).

4. Director, participated in the meetings of Sugar Development fund convened on 01.03.2015 of Standing Committee.
5. Chief Design Engineer participated in the meeting convened by CPCB in connection with limiting discharge from Sugar factories to the extent of 40 liters/ton of cane on 20.03.2015 at New Delhi.

### **EXPERIMENTAL SUGAR FACTORY:**



This is unique feature of the Institute that 100 TCD sugar factory is in the institute for providing first hand technical training to the 1<sup>st</sup> year students of Sugar Technology & Sugar Engineering Courses and carrying out pilot scale trials.



The Experimental Sugar Factory started crushing from 2<sup>nd</sup> February 2015 and closed on 12<sup>th</sup> March, 2015. During Crushing Season 2014-15, 4136 Qtls. of Sugar Cane crushed by the ESF producing 133 bags of sugar. Trials of some new equipments/ processes viz. Short Retention Time Clarifier and Process for Production of Sulphur Less Sugar were also carried out.

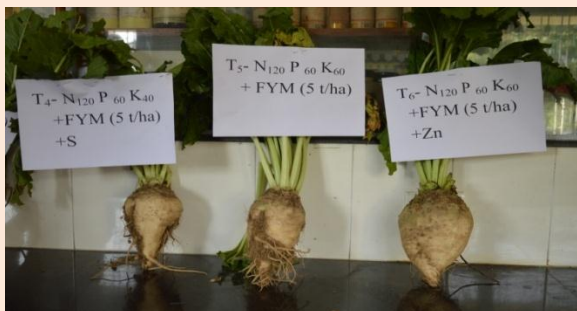


### **FARM :**

Harvesting of Sugarcane, Gram & Rai carried out during the period. Seed of a new sugarcane variety CO 0238 was procured from UP Council of Sugarcane Research, Shajahanpur for its cultivation at institute farm. Experiments have also been taken up on use of potash & its role in increasing yield of sugarcane crop.



Cultivation of sugar beet & further work on studies of its morphological characteristics was also taken up.



### REPUBLIC DAY:

National Sugar Institute celebrated 66<sup>th</sup> Republic day at the Institute on 26<sup>th</sup> January 2015. On this occasion, Shri Narendra Mohan, Director hoisted the National Flag and took the salute.



He called upon the staff and Institute to work hard with positive attitude, so that, the Institute may extend better teaching/ training to the students and also render effective technical consultancy to services to the sugar and allied industry.



He also distributed “Swacchta Awards” on this occasion. The first & second prize was awarded to Biochemistry Division & Establishment Section respectively.



### MISCELLANEOUS:

- 1- Aadhar Enabled Biometric Attendance System (AEBAS) installed at the institute.
- 2- A Computer Laboratory/Language Laboratory Library is being set up at the institute with 36 nos. computers and other required facility.

- 3- To facilitate smooth working and to increase area under cultivation, two nos. tractors with trolleys were procured.
- 4- Construction of a New Hostel having 36 rooms was expedited during the period.
- 5- Computer facilities were extended in the girls hostel.

### HINDI KARYASHALA

To promote use of Rajbhasha in day to day official work “Hindi Karyashala” was organized on 23<sup>rd</sup> March, 2015 at institute. Information with respect to recent guidelines regarding use of Rajbhasha was also provided to the participants.



The Karyashala was attended by the technical and ministerial staff of the institute.

### HOLI MILAN :

Old Boy’s Association of the institute organized Holi Milan at the Institute on 12<sup>th</sup> March, 2015 in association with NSI Officer’s & Technical Staff Welfare Association.



### ADMISSION NOTICE:

Admission notice inviting applications for admission to various courses conducted by the institute during the academic year 2015-16 has already been issued. From the academic session 2015-16, the institute has introduced a four months duration course “Certificate Course in Sugarcane Productivity & Maturity Management”. The last date for submitting the off line/on line applications is 8<sup>th</sup> May 2015.

For details log on to our website <http://nsi.gov.in>