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Narendra Mohan
Director

Sugar Season 2017-18 has commenced with sugar production in the country soared 26% year-on-year or an increase of 21.35 lakh tonnes to 103.3 lakh tonnes between October and December 2017 on the back of good out

Wishing you a very happy and prosperous New Year 2018.

➤ SEMINARS / WORKSHOPS / CONFRENCES ORGANISED / ATTENDED:

1. Prof. Narendra Mohan, Director, attended 23rd Asia International Sugar Conference at Jakarta, Indonesia from 31st Oct. to 2nd Nov. 2017 along with Shri Brajesh Singh, Technical Officer (Instrumentation).

Prof. Narendra Mohan, Director also presented a paper during the conference on “Diversification for Sustainability of the Sugar Industry”.

put in key growing states of Uttar Pradesh and Maharashtra.

Utttar Pradesh again being comfortable with sugar recoveries although factories in the eastern part not doing so well. Considering a demand growth @2%, the sugar consumption in the country is expected to be approx. 250 lakh tonnes and thus the closing stocks shall be about 40 Lakh tonnes. However, the recent downward trend in the prices of sugar is a matter of concern for the sugar industry as a whole, while the factories in Uttar Pradesh suffering more on account of rock bottom prices of molasses.

With reports of India talking to neighboring countries viz. Bangladesh and Sri Lanka to seek lower import duties for its sugar exports to prevent a glut next season is a ray of hope for the sustainability of the sugar industry.



2. One day workshop on "Upcoming technologies for effluent treatment in sugar industry" was organized at NSI, Kanpur on 24th October 2017. Shri D K Saxena, Chief Executive Officer, HPCL Biofuels graced the occasion as "Guest of Honour". Lively discussions were held on the technologies for treatment of spray pond overflow and condensate polishing units.



3. Prof. Narendra Mohan, Director, Director attended a short course on "Enhancing Nutrient Use Efficiency through Next Generation Fertilizers in Field Crops" on 21st November 2017 at IIPR, Kanpur as Chief Guest.

➤ RESEARCH:

The Institute during the period took up R&D work on the following:

1. Mushroom cultivation from different lignocellulosic substrates- To explore possibilities of utilization of bagasse as substrate for mushroom cultivation, studies have been taken up which shall be extended further using other lignocellulosic substrates. Sets with different combinations of lignocellulosic substrates were prepared viz. Bagasse, Bagacillo, Wheat straw for the production of *Pleurotus sp.* Standardization of the techniques has been done. Initial analysis of raw material completed and the sample analysis is in progress.

2. Isolation and purification of yeast strains from saccharine materials and their performance for fermentative production of alcohol-The yeast strain isolated from spoiled sugar cane juice produced best results when diluted molasses was fermented by this strain with a fermentation value of 91.7% and ethanol yield of 218 liter/ton assessed. The yeast isolated from rotten grapes also produced good results. Three selected strains were tested for their efficiency on molasses medium. The same were repeated to validate the results. All the sets (ranging from 13-20% sugar content) were repeated for the assurance of fermentation efficiency.



3. Bio-CNG from Press Mud- With an aim to utilize the press mud for production of Bio-CNG, different combinations of press mud, farm, yard manure and spent wash were tried on laboratory scale.

Overall gas formation patterns in ten selected treatments were studied with the help of gas analyzer. Physico-chemical analysis of the slurry of combinations giving better results is in progress. Analysis of bio-manure residue obtained after the production of biogas for inorganic constituents, organic nitrogen and phosphorus has been completed. Further, pilot plant scale trials shall be taken up in the Experimental Sugar Factory of the Institute during the ensuing crushing season.



4. Studies on clarification of cane juice with bagasse derived bio-char- The study has been taken up with an aim to utilize the bagasse fly ash in combination with bio char to check its clarification efficiency on cane juice and other sugar liquors. In order to implement the bagasse fly ash as an adsorbent to clarify the sugarcane juice, the analysis of input parameters such as pol, brix, purity, conductivity ash, colour, turbidity, starch and dextran of sugarcane juice to be treated is under process for exploring further possible use. The proximate analysis [Moisture (%), Volatiles (%), Ash (%) and Fixed carbon (%)] of



bagasse fly ash received from three sugar factories has been carried out.

5. Studies on synthesis of glycosidic surfactants using by-product resources of sugar industry- Studies have been taken up further so as to enhance the yield of bagasse derived polypentosides based surfactant along with reducing the purification steps involved thereof.



An experiment has been performed on 10 gm scale to synthesize the glycosidic surfactant. The purification and characterization of the product is under evaluation. Patent application on this topic has been filed. Experiments to synthesize bagasse derived glycosidic surfactant towards validating the method by procuring bagasse from various sugar factories were performed. The isolation

and characterization of the product is under process.

6. Improvement in sugar quality by clarification of intermediate boiling house products-Experiments were carried out on laboratory scale with B & C-Double Cured Sugar melt using different doses of phosphoric acid and hydrogen peroxide. Centrifugation of melt was also carried out to remove suspended impurities & significant removal of colour and turbidity was achieved.



Further experiments were also carried out on laboratory scale in a commercial sugar factory during the current crushing season and the results are encouraging.

7. Studies on Production/isolation of C5-Sugar Alcohol/Sugar using by-product resources of sugar industry-An up to date literature survey on the topic and procurement of the required chemicals/materials is under process. The study is aimed basically at deriving a low calorie sweetener from bagasse.

9. Settling test using Lamella Clarifier - The literature survey has been done and a Laboratory model for the experiment is under construction for the actual assessment of mud removal & quality parameters of clear juice. Lab trials on this new design of clarifier will be

carried out during the present crushing season.

➤ **RESEARCH PAPERS / POSTER PRESENTED / PUBLISHED / SENT FOR PUBLICATION:**

1. **“Diversification for Sustainability of the Sugar Industry”** by Narendra Mohan presented during the 23rd Asia International Conference held on 2nd November, 2017 at Jakarta, Indonesia.

2. **“Sugarcane bagasse as surrogate for production of surfactants (Bio-Detergent)”** by Narendra Mohan, V.P. Srivastava & Anuska Agarwal sent for publication in 6th IAPSIT International Sugar Conference to be held in March, 2018 at Thailand.

3. **“Implementation of Quality based Sugarcane Payment Scheme in India-A need of hour”** by Narendra Mohan & Priyanka Singh sent for publication in 6th IAPSIT International Sugar Conference to be held in March, 2018 at Thailand.

4. **“Green Energy for the Indian sugar Industry: A Sustainable Energy Future”** by Narendra Mohan, D. Swain & A.K. Kanaujia sent for publication in 6th IAPSIT International Sugar Conference to be held in March, 2018 at Thailand.

➤ **NSI SIGNED MOU WITH INTEGRAL UNIVERSITY, LUCKNOW:**

NSI & Integral University, Lucknow signed a MOU on conducting research work for award of PhD in various disciplines. The two organizations also felicitated progressive farmers on the occasion of "Farmers day", 23rd December, 2017.



➤ **NSI SIGNED MOU WITH CSA UNIVERSITY OF AGRICULTURE & TECHNOLOGY:**

Director, NSI and Vice Chancellor of CSA University of Agriculture & Technology principally agreed for collaborative work on improving soil health and production of bio-fertilizers. NSI & CSA University of Agriculture and Technology, Kanpur also signed a MOU on conducting research work for award of PhD in various disciplines.



➤ **DISTINGUISHED VISITORS:**

1. Shri Anurag Goyal, an alumnus of the institute now working with ISGEC visited the institute and took keen interest in the institute activities, particularly, on production of Bio-CNG from press mud.
2. Shri K.J. Sharma, General Manager (Technical), Tikaula Sugar Mills Ltd., Distt-Muzaffarnagar, U.P.

3. Shri R.K. Singh, Chief General Manager, Simbhaoli Sugars, Distt-Panchsheel Nagar, U.P.

4. Shri Mahmud Ali, Managing Director, Sasa Musa Sugar Works (P) Ltd., Distt-Gopalganj, Bihar.

5. Dr. Ummed Singh, Senior Scientist (Agronomy), ICAR- Indian Institute of Pulses Research, Kanpur, U.P.

6. Shri Deepak Jindal, CEO, Jhanil Healthcare Pvt. Ltd., Sunam, Punjab.

7. Shri M.K. Kulshrestha, General Manager (Technical), U.P. Co-operative Sugar Factories Fed. Ltd., Lucknow, U.P.

➤ **RECORD CAMPUS PLACEMENTS:**

Record 191 placements were recorded through on and off campus interviews. All prominent sugar groups picked up students of various courses. M/s ISGEC, Uttam, DSCL, Dalmia, Balrampur, Wave, Dhampur, KM Sugar, Birla and SEDL were the prime takers.



➤ **FAIRWELL OF FINAL YEAR STUDENTS:**

Junior Students organized farewell party to the seniors. Scintillating dance, singing and mimics programme organized by the students on their own.



➤ **AIMING AT SUGARCANE FARMERS:**

As its commitment towards increasing sugarcane productivity by educating the farmers, three brochures in simple Hindi on "Pest", "Disease" and "Ratoon" Management published by the institute.



➤ **CONSULTANCY:**

During October-December, 2017 consultancy services were provided to the following:

1.	M/s Nanglamal Sugar Complex, Distillery Unit of Mawana Sugar Ltd., Distt-Meerut, U.P.
2.	M/s Rajasthan State Ganganagar Sugar Mills Ltd., Distt- Shri Ganganagar, Rajasthan.
3.	M/s The Karnal Co-op. Sugar Mills Ltd., Karnal, Haryana.
4.	M/s Triveni Engineering & Industries Ltd., Distillery unit, Distt- Muzaffarnagar

5.	M/s K. M Sugar Mills Ltd., Distillery unit Motinagar, Distt- Faizabad, U.P.
6.	M/s DSM Sugar Mills Ltd., Unit-Mansoorpur, Distt- Muzaffarnagar, U.P.
7.	M/s Venus Sugar Ltd., Chandausi, Moradabad, U.P.
8.	M/s Tembo Sugars Ltd., Kenya.
9.	M/s U.P. Co-op. Sugar Factories Federation Ltd., Lucknow, U.P.
10.	M/s U.P. State Sugar Corporation Ltd., Unit-Munderwa, Lunknow, U.P.
11.	M/s U.P. State Sugar Corporation Ltd., Unit-Pipraich, Lunknow, U.P.
12.	M/s Jubilant Life Sciences Bhartiagram, Gajraula, Amroha, U.P.
13.	M/s Coromandal Sugar Ltd., Makkaualli, Mandaya, Karnataka.
14.	M/s Simbhaoli Sugar Ltd., Simbhaoli, Distt-Ghaziabad, U.P.
15.	M/s Simbhaoli Sugar Ltd., Simbhaoli Distillery, Distt-Ghaziabad, U.P.
16.	M/s Simbhaoli Sugars Ltd., unit-Brijnathpur Sugar, U.P.
17.	M/s Simbhaoli Sugar Ltd., unit-Brijnathpur Distillery, Distt-Ghaziabad, U.P.
18.	M/s Daurala Sugar Works, Daurala, Distt-Meerut.
19.	M/s Kesar Enterprises Ltd., Baheri, Distt-Bareilly, U.P.
20.	M/s Oswal Overseas Ltd., Nawabganj, Bareilly, U.P.

➤ **NABL ACCREDITATION OF NSI ANALYTICAL LABORATORY:**

Second and final audit of the NSI Analytical Laboratory was successfully carried out. The

laboratory is expected to receive the certification in this regard shortly.



The NSI Analytical Laboratory has been equipped with most advanced and sophisticated instruments to facilitate analysis of sugar and other sugar house products as per ICUMSA prescribed and other standard protocols.

➤ ANALYTICAL SERVICES:

Analytical services were rendered to following:

1. Shree Ganesh Khand Udyog Sahkari Mandali Ltd., Bharuch, Gujarat.
2. JSR Insurance Surveyors & Loss Assessors, JVTS Garden, New Delhi.
3. Akbarpur Chini Mills, Mijhaura, Distt- Ambedkarnagar, U.P.

➤ PREPARATION & SALE OF SUGAR STANDARD GRADES:

To facilitate grading and marketing of Plantation White Sugar, Bureau of Sugar Standards issued 1355 Sugar Standard Grades to 243 Sugar factories during the period

October-December 2017 for the present crushing sugar season 2017-18.



➤ SAMVIDHAN DIWAS:

“Samvidhan Diwas” was celebrated on 27th November, 2017 at the institute. Prof. D. Swain, Prof. Sugar Engineering administered the oath to the staff and students of the Institute.

➤ एकता दिवस:

संस्थान में दिनांक 31-10-2017 को अधिकारियों, कर्मचारियों एवं छात्रों को सरदार बल्लभ भाई पटेल के जन्मतिथि के उपलक्ष्य में एकता एवं अखण्डता की शपथ दिलाई गई।



➤ सतर्कता जागरूकता सप्ताह:

संस्थान में दिनांक 30.10.2017 से 04.11.2017 तक “सतर्कता जागरूकता सप्ताह-2017” का आयोजन किया गया तथा दिनांक 30.10.2017 को संस्थानकर्मियों को

जागरुकता की शपथ दिलाई गई। इस सप्ताह के दौरान संस्थानकर्मियों एवं छात्रों के लिये निबंध एवं व्याख्यान प्रतियोगितायें आयोजित की गईं।



➤ ISO SURVEILLANCE AUDIT:

Surveillance audit of the Institute for ISO 9001:2018 certification was conducted from 20th to 21st December, 2017 by QSI, (India) Pvt. Ltd. Jaipur and certificate has been issued.



➤ हिंदीकार्यशाला:

सरकारी कामकाज में राजभाषा के रूप में हिन्दी के प्रति जागरुकता लाने तथा उसके उत्तरोत्तर विकास हेतु संस्थान में 27 दिसम्बर, 2017 को हिन्दी कार्यशाला का आयोजन किया गया, जिसमें संस्थान निदेशक ने सभी विभागाध्यक्षों को निर्देशित किया कि सभी अपने अधीनस्थ कर्मचारियों को हिन्दी में कार्य करने को प्रेरित करें जिससे कि राजभाषा विभाग के निर्देश का पालन सुनिश्चित किया जा सके।



➤ SWACHHTA PAKHWADA:

Swachhta Pakhwada was organized at the institute from 15th September to 2nd October 2017. Various events were organized to create awareness about swachhta viz. nukkad natak, painting competition, seminar, blood donation camp and cleanliness drive in the institute and in local primary school. Swachhta Shapath was also administered on "Swachhta. Biochemistry Department was awarded for being the most clean section.

