



**July -
September
2022**

NATIONAL SUGAR INSTITUTE KANPUR – 208017 (U.P.) INDIA



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Even after producing about 35.9 million metric tonnes of sugar, Indian Sugar Industry is comfortable thanks to possible exports to the extent of 11.0 million metric tonnes. Diversion of 3.5 million metric tonnes of sugar for ethanol production also brought relief, otherwise, the situation would have been tougher.

However, as the international sugar prices may not be lucrative all the time due to more supplies of sugar in the market from Brazil & Thailand, exports shall be challenging. Thus, diversion of sugarcane juice/syrup along with B Heavy molasses shall be a viable solution. The model of diversion to be worked out as per demand and relative economics.

As the industry is doing good and lot of ethanol capacity building taking place, students of the institute have also been benefitted and we are sure to achieve 100% placement through campus only.

**Narendra Mohan
Director**

**Visit us at:
<http://www.nsi.gov.in>
Contact: nsikanpur@nic.in**

SHARKARA SHRI AWARD DISTRIBUTION:

"SHARKARSHRI" award conferred to 15 distinguished alumni of the institute by Sadhvi Niranjani Jyoti, Hon'ble Minister of State, Ministry of Consumer Affairs, Food & Public Distribution & Rural Development during the programme organized on 23rd July 2022, at the institute under aegis of "Old Boy's Association". The awards were given for their long and exemplary service to sugar and alcohol industry. Prof. Samser, Vice Chancellor, HBTU also graced the occasion.



ACCREDITED TRAINING PROGRAMME FOR NIGERIAN SUGAR CO. :

Six weeks "Accredited Training Programme" for the technical staff of M/s Sunti Golden Sugar Estate, Nigeria was

conducted. More than 30 engineers, technologists and other technical staff participated in the course on virtual mode. The Nigerian participants were imparted knowledge about latest machine and equipment used during processing for reducing steam, power and chemical consumption. Idea was also given to them about recent trends in utilization of by products for producing value added products.



ORIENTATION PROGRAMME:

Orientation Programme was organized for the new students admitted during academic session 2022-23 at National Sugar Institute, Kanpur on 24th August 2022.



Director, Education In-charge, Controller of Examination & Hostel Wardens

addressed and briefed the students about hostels rules, academic calendar and discipline to be followed.



EXECUTIVE PROGRAMME:

Secretary (Food & Public Distribution), Government of India, Shri Sudhanshu Pandey, inaugurated "**Executive Development Programme**" organized from 23rd to 25th August 2022 by National Sugar Institute, Kanpur. He called upon delegates for adopting best practices for improving farm and factory productivities to reduce cost of production and improve viability. Joint Secretary (Sugar) Government of India, Shri Subhodh Kumar Singh also addressed and stressed upon converting so called "Waste to Resource" and for utilization of by products in a better manner.



Lectures were given by eminent experts from India & abroad on important topics.

EXPERT LECTURES ORGANIZED:

Expert lectures for the benefit of students of Sugar Technology (ANSI-ST), Sugar Engineering (ANSI-SE), Diploma in Quality Control and Environment Science (DQCES) and Alcohol Technology (DIFAT) delivered by Shri G.B. Yadav, General Manager (Production), M/s Dalmia Bharat Sugars Ltd, Shri Shivesh Singh, General Manager (Corporate-Technical), M/s Balrampur Chini Mills Ltd., Shri Govind Mishra, Consultant (Alcohol Technology), Shri Shanti Kumar Pandey, Renowned Sugar Technologist, Shri H.S Shukla, Vice President, Radico Khaitan Ltd. and Shri PP Mishra, Advisor, M/s Dhampur Bio-organics Ltd. on the various technical topics during the month.



MEETING OF EXPERT COMMITTEE TO FINALIZE THE SUGAR STANDARDS:

Meeting of the “**Expert Committee for Sugar Standards**” constituted by the Bureau of Indian Standards, Ministry of Consumer Affairs, Food & Public Distribution (Government of India) was held on 23rd September 2022, at the National Sugar Institute under the Chairmanship of Shri Narendra Mohan, Director, NSI, Kanpur.

The Expert Committee finalized the sugar standards for the sugar season 2022-23 commencing from 1st October 2022. The meeting was attended by representatives from the Ministry of Consumer Affairs, Food & Public Distribution, Indian Sugar Mills Association, The Sugar Technologists Association of India and the Bureau of Sugar Standards etc.



Expert committee recommended to introduce 32 new colour series for sugar standards w.e.f. October 2023. Thus, sugar standards shall be available in L, M, S, SS in 32, 31 and 30 colour series.

RESEARCH WORK:

1. Studies on isolation of Lignin from sugar industry-based biomass and development of the process for the conversion of derived lignin and fermentable sugar to Value-added product - The experimental work related to purifying the vanillin from crude reaction mixture have been performed. Few attempts towards crystalizing vanillin from crude reaction mixture has been tried by selecting different sets of solvents and some more trials are ongoing.

2. Studies on production of chloromethyl furfural from bagasse derived cellulose in biorefinery approach- The scale up study to produce chloromethyl furfural on 20 g scale has been planned and preparation of bagasse derived starting material has been carried out and derivation of chloromethyl furfural is under process.

3. Studies on Sweet Sorghum Bagasse value addition – In order to find out the mass balance through validating the process, starting material (as available) has been prepared towards executing the experiments in pressure reactor. Separation of hemi cellulose is under way.

4. Studies on utilization of molasses for synthesis of 5-alkoxymethylfurfural ethers as promising biofuel candidates - The one experiment related to synthesis of methyl levulinate from molasses

towards improving the yield has been conducted. TLC monitoring study indicated side product formation due to charring of starting material. The study related to avoid such formation of side product is ongoing.

5. Comparative study of Five varieties of sweet sorghum for production of ethanol yield - Sowing of five sweet sorghum varieties, namely, Phule Vasundhra, CSH 22SS, SSV 84, SSV 74 and ICSSH-28 during the period. Irrigation and weeding practices were taken up during the month of September 2022 and the crop will be harvested in last week of December 2022 & than trials shall be conducted to assess ethanol production.

6. Cane juice syrup study for self-life and production of alcohol - Two Syrup samples were preserved in Bio-Chemistry division at room temperature. One collected from M/s Dalmia Bharat Sugar & Ind. Ltd., Jawaharpur unit and other from Experimental Sugar Factory of the Institute. Initially syrup collected from Jawaharpur unit was having pH-6.2, Brix around 72, and TRS 64.5 %.

Another sample collected from Experimental Sugar Factory, NSI Kanpur was initially having pH-7.0, Brix around 75, and TRS 56.9%. Every month samples were analysed but no appreciable deterioration without addition of any enzyme could be observed till seven months and about one unit drop was seen only in Jawaharpur sample after 10 months. From the experiment, it was observed that storing syrup may not be a problem if we maintain the pH above

neutral and raise the brix to 75 + before storage.

7. Comparative study on polarization by using lead, non-lead, non-lead clarificants and NIR polarimetry - Comparative study was done on polarization of sugarcane juice at 589 & 880 nm by applying different doses of Carrez reagent i.e. 0.1 ml, 0.2 ml, & 0.5 ml and also by application of lead sub acetate to the sugar cane Juice samples in conventional manner. Appreciable difference in pol reading was observed at higher doses (0.5 ml) of Carrez reagent. Further trials of Carrez reagent and non lead clarificants to be done in different sugar house intermediates.

8. Study of B Heavy molasses for different parameter which is required to be used as edible molasses - 03 nos. samples of B Heavy molasses received from Double Sulphitation plant were analysed for the parameters of Brix%, Pol%, Purity, RS%, & TRS% and their detailed study for microbial contamination is underway. More samples to be analysed after commencement of new season.

9. Use of Guljag Crystasulf for sugar cane juice clarification - Two sets of experiments were conducted in which different doses of CRYSTASULF i.e. @ 500 ppm & 1000 ppm were applied to the raw juice after heating to 70 deg.C, and juice was neutralized by addition of MOL. Then juice was subjected for heating up to 101-102 deg.C and flocculent @ 1 ppm was also applied for faster settling of juice. Analysis of juice before & after treatment was carried out for pH, Brix%, Pol%, Pty,

R.S.% etc. Due to low purity of raw juice, results were not conclusive.

10. **Preservation of syrup and B-heavy molasses storage by the use of different chemicals** - 04 nos. of B Heavy molasses samples were collected from various commercial sugar factories to set up the new sets for further study on deterioration of B Heavy molasses during storage. As per discussions held with the collaborating technology providers, two sets of B Heavy molasses were kept in an open atmosphere. However, no appreciable changes were observed during the analysis of old B Heavy samples.

RESEARCH PAPERS:

1. A research paper entitled **“An overview of B-heavy molasses diversion for boosting ethanol production”** by Narendra Mohan, Ananthalakshmi Ranganathan & Vivek Pratap Singh was presented in the Annual Convention - 2022 of The South Indian Sugarcane & Sugar Technologists' Association (SISTA).
2. A research paper entitled **“Production of Activated Bio-Char from sugar cane bagasse and its application in de-colourising sugar melt”** by Narendra Mohan, Sudhanshu Mohan & Shalini Kumari has been published in International Journal of Science and Research (IJSR), ISSN:2319-7064, SJIF (2022): 7.942.
3. A research paper entitled **“Use of exergy of condensing steam”** by Sanjay Chauhan and D. Swain was presented in the convention - 2022 of

The South Indian Sugarcane & Sugar Technologists' Association (SISTA).

4. A research paper entitled **“Indian Sugar Industry: Atmanirbhar Sugar – Ethanol Model”** by Narendra Mohan and Anoop Kumar Kanaujia was presented in the 67th Annual Convention -2022 of the Deccan Sugar Technologist's Association (DSTA).
5. A research paper entitled **“Analysis of Harmonics due to Electrical Drives at Milling Tandem”** by Vinay Kumar and D. Swain, was presented in the Annual Convention-2022 of The Deccan Sugar Technologists' Association (DSTA).
6. A paper entitled **“Comparative Study of Different Sugar Beet Varieties and Their Economic Sustainability for Ethanol Production in India”** by Dr. Seema Paroha, D Swain & Dr. Ashok Kumar, sent to 7th IAPSIT International Sugar Conference & Sugar Tech Expo /Suagarcon-2022 being organized at the Indian Institute of Sugarcane Research, Lucknow.
7. A paper entitled **“Myths about sugar consumption: facts & way forward”** by Narendra Mohan sent to 7th IAPSIT International Sugar Conference & Sugar Tech Expo/ Suagarcon-2022 being organized at the Indian Institute of Sugarcane Research, Lucknow.
8. A paper entitled **“Advent of artificial sweeteners- is it a threat to sugar consumption?”** by Sneha Agarwal & Narendra Mohan published in **“SHARKARA”** (July – September

2022), VOLUME: 54, NO. 02, ISBN: 978-93-5445-372-4.

9. A paper entitled **“Sugar Dust Explosion – Occurrence, Remedies and Prevention”** by Sanjay Chauhan & D Swain sent to 7th IAPSIT International Sugar Conference & Sugar Tech Expo/ Suagarcon-2022 being organized at the Indian Institute of Sugarcane Research, Lucknow, India.
10. A paper entitled **“Vanillin synthesis from sugarcane bagasse lignin in a bio-refinery concept”** sent to 7th IAPSIT International Sugar Conference & Sugar Tech Expo/ Suagarcon-2022 being organized at the Indian Institute of Sugarcane Research, Lucknow, India.

CONSULTANCY:

Request for consultancy services of the institute were received and as also provided to various sugar factories and ethanol units on various technical matters relating to diversion of B Heavy molasses/syrup, validation of ETP's, preparation of DPR's, validation of no increase in pollution loads in ethanol units upon enhancement in capacity etc.

Dhampur Bio Organics Unit – Asmoli, Sambhal, U.P.

Fullon Sugar Pvt. Ltd., Andheri East, Mumbai, M.H.

Dalmia Bharat Sugar & Ind. Ltd., Unit – Jawaharpur, Sitapur, U.P.

Bajaj Hindusthan Sugar Ltd., Unit – Rudhali, Basti, U.P.

The Kisan Sahkari Chini Mills Ltd., Mahmudabad, Sitapur, U.P.

Sahakar Maharshi Shankarrao Kolhe Sahakari Sakhar Karkhana Ltd., M.H.

The Kisan Sahkari Chini Mills Ltd., Badaun, U.P.

SBEC Sugar Ltd., Malakpur, Bagpat, U.P.

Kisan Sahkari Chini Mills Ltd., Nanauta, Saharanpur, U.P.

Balrampur Chini Mills Ltd., Balrampur, U.P.

Parle Biscuits Pvt. Ltd., Bahraich, U.P.

The Kisan Sahkari Chini Mills Ltd., Kaimganj, Farrukhabad, U.P.

Maa Mahamaya Sahkari Shakkar Karkhana Maryadit, Ambikapur, Chhattisgarh

Simbhaoli Sugar Mills Ltd., Unit – Simbhaoli, Ghaziabad, U.P.

Kesar Enterprises Ltd., Unit – Baheri, Bareilly, U.P.

Dalmia Bharat Sugar & Industries Ltd., Distillery Unit – Ramgarh, Sitapur, U.P.

Dalmia Bharat Sugar & Industries Ltd., Sugar Unit – Ramgarh, Sitapur, U.P.

Dhampur Sugar Mills Ltd., Chemical Division Dhampur, Bijnor, U.P.

Dalmia Bharat Sugar & Industries Ltd., Distillery Unit – Nigohi, Shahjahanpur, U.P.

Bajaj Hindusthan Sugar Ltd., Unit – Khambarkhera, Lakhimpur Kheri, U.P.

Daurala Sugar Works, Unit – Daurala, Meerut, U.P.

Magadh Sugar & Energy Ltd., Unit – New Swadeshi Sugar, Narkatiaganj, Bihar

ANALYTICAL SERVICES:

Besides analysis of sugar & sugar house products, Ethanol and effluents etc. Institute started offering testing of Ethyl Alcohol based Sanitizer in its sophisticated, most modern NABL accredited analytical laboratory and other

laboratories of the institute. Testing of bagasse for determination of GCV also taken up during the period. Analytical services were rendered to following:

Dalmia Bharat Sugar & Ind. Ltd., Unit – Nigohi, Shahjahanpur, U.P.

Magadh Sugar and Energy Ltd., (Unit - Bharat sugar Mills), Gopalganj, Bihar

UP State Corporation, Mohiuddin, Meerut, U.P.

Wave Sugar Ltd., Unit – Bijnor, U.P.

Wave Sugar Ltd., Unit – Dhanaura, U.P.

Govind Sugar Mills Ltd., Unit – Aira, Shahjahanpur, U.P.

Kisan Sahkari Chini Mills Ltd., Najibabad, Bijnor, U.P.

Kisan Sahkari Chini Mills Ltd., Tilhar, Shahjahanpur, U.P.

KSC Mills., Anoopsahar, Bulandsahar, U.P.

Lords Distillery, Sadiyabad, Gazipur, U.P.

Triveni Engineering Ind. Ltd. Unit – Deoband, Saharanpur, U.P.

Magadh Sugars & Energy Ltd., (Bharat Sugar Mills Sidhwalia), Gopalganj, Bihar

Rana Sugars Ltd., Belwara, Muradabad, U.P.

PBS Food (Sugar) Pvt. Ltd., Chandanpur, U.P.

Govind Sugar Mills Ltd., Unit – Aira, Lakhimpur Kheri, U.P.

Avadh Sugar & Energy Ltd., Unit – Seohara, Bijnor, U.P.

Dalmia Bharat Sugar & Industries Ltd., Unit – Jawaharpur, Sitapur, U.P.

Triveni Engineering & Ind. Ltd., Unit – Sabitgarh, Bulandshahr, U.P.

Rasi Nutr Foods India Pvt. Ltd., Bhavani taluk, Tamilnadu

Kisan Sahkari Chini Mills Ltd., Unit – Kaimganj, Farrukhabad, U.P.

The Kisan Sahkari Chini Mills Ltd., Unit – Sathiaon, Azamgarh, U.P.

Maa Mahamaya Sahkari Shakahar Karkhana, Jagarnathpur, Chhattisgarh

OUR OTHER ACTIVITIES:

1. Director, NSI, Kanpur visited the M/s Sahakar Maharshi Shankarrao Kolhe SSK Ltd., Kopargaon, Ahmednagar on 9th July 2022 and advised them on production of value-added products from sugar cane bagasse and on the production of specialty sugars.



2. National Sugar Institute, Kanpur got patent for developing “**Non -Ionic Surfactant from Sugarcane Bagasse**”. The surfactant having good surface activity and bio-degradable properties has applications in personal care products, cosmetics and in production of soaps and detergents.



3. National Sugar Institute, Kanpur conducted an online meeting on 16th July 2022, to help Kenya in training manpower to serve the Kenyan Sugar Industry.



Matter discussed between officials of National Sugar Institute, Kanpur and Great Lakes University, Kenya. Prof. Hazel Miseda Mumbo, Vice Chancellor, Great Lakes University sought NSI assistance for conducting training programmes for the purpose.

4. Director, National Sugar Institute, Kanpur addressed Business Meet organized by Cogeneration Association of India at Lucknow on the topic "**Sugar Factories- The Future Innovative Energy Hub**" on 16th July 2022 and suggested various models for boosting ethanol, power and Compressed Biogas production.



5. National Sugar Institute, Kanpur and ICAR-Central Tuber Crop Research Institute, Thiruvananthapuram agreed in principle to work together for production of ethanol from Cassava. Director's and experts from the two institutes had discussions on the matter through video conferencing.



6. Director, National Sugar Institute, Kanpur addressed "**Stakeholders Meet on Sugarcane & Sugar Sector @2025**" on the topic "**Sugarcane-Harnessing the Unexploited Potential**" at Indian Institute of Sugarcane Research (IISR) Lucknow on 20th July 2022.



7. Director, NSI Kanpur, visited Sugarcane Breeding Research Institute, Coimbatore and discussed issues related to productivity of sugarcane in Tamil Nadu and South Karnataka. He also discussed the need

for newer variety as replacement for Co238 in Northern India and on future of transgenic and energy sugarcane.



8. Director, National Sugar Institute, Kanpur, conferred "**Noel Deerr Gold Medal**" by Shri Sudhanshu Pandey, Secretary (Food & Public Distribution) for paper on development of innovative technology for purification of sugar factory condensate for their reuse in place of fresh water during the 80th Annual Convention of The Sugar Technologists' Association of India (STAI) held on 28th – 29th July 2022 at Dr. Shyama Prasad Mukherjee Indoor Stadium, Goa.



9. "**World Biofuel Day**" was organized at National Sugar Institute, Kanpur on 10th August 2022. Various technical aspects like bio-energy, bio-ethanol, bio-electricity, CBG and Green

Hydrogen from sugar industry were discussed in length.



आज़ादी के अमृत महोत्सव के तत्वाधान में स्वतंत्रता दिवस की पूर्व संध्या पर राष्ट्रीय शर्करा संस्थान, कानपुर में शिक्षकों, अधिकारियों एवं छात्रों द्वारा तिरंगा यात्रा निकाली गयी। छात्रों द्वारा "**भारत माता की जय**" एवं "**वन्दे मातरम्**" के गगन भेदी नारों ने सबमें जोश भर दिया।



10. राष्ट्रीय शर्करा संस्थान, कानपुर में स्वतंत्रता दिवस पूरे उत्साह के साथ मनाया गया। संस्थान द्वारा "**स्वच्छता मिशन**" के अंतर्गत लगन से कार्य करने वाले सफाई कर्मियों को पुरस्कृत किया गया। साथ ही शर्करा प्रौद्योगिकी विभाग को "**सबसे स्वच्छ विभाग**" होने की "**स्वच्छता ट्रॉफी**" प्रदान की गयी। एक सांस्कृतिक

कार्यक्रम का भी आयोजन किया गया जिसमें डॉ शालिनी वेद त्रिपाठी, सुश्री अलका मिश्रा, मुकेश श्रीवास्तव ने अपनी कविताओं से संस्थान कर्मियों एवं छात्रों में जोश भर दिया।



11. Director National Sugar Institute, Kanpur, was honored by the **"Excellence Award"** for outstanding services to the sugar industry conferred by Mr. Parshottam Rupala, (Hon'ble Union Cabinet Minister of Fisheries, Animal Husbandry and Dairying) & Mr. Kailash Choudhary, (Hon'ble Union Minister of State for Agriculture and Farmer Welfare, Govt. of India) on 18th August 2022.



12. Director National Sugar Institute, Kanpur addressed delegates on the topic of **"The Energetic Indian Sugar Industry"** during a workshop at NAS Centre, New Delhi and presented details of bioenergy potential and way forward on 19th August 2022.



13. National Sugar Institute, Kanpur and ICAR-Indian Institute of Maize Research, Ludhiana to work jointly to assess the potential of ethanol production from different maize varieties. Director, ICAR-Indian Institute of Maize Research, Ludhiana, visited NSI, Kanpur to discuss & take the matter forward.



14. Director National Sugar Institute, Kanpur, visited ICAR-Indian Institute of Millets Research, Hyderabad.

Future planning with timelines discussed for promoting production of bio-ethanol from "**Sweet Sorghum**". Details of trials conducted at the institute were also discussed.



15. Director National Sugar Institute, Kanpur, and Shri Vinay Kumar were conferred "**JP Mukharji Gold Medal**" for the best paper "Electric Drives for Cane Preparation- A Critical Review of Conventional System and Recent Developments" in the Engineering Section during the 51th Annual Convention of SISSTA at Tirupati.



16. Director National Sugar Institute, Kanpur was conferred "**National Cogeneration Award**" by Shri Nitin Gadkariji, Hon'ble Minister of Road Transport & Highways, Government of

India for contribution for converting sugar factories into "**Hub of Bio-energy**" in the presence of Shri Sharad Pawarji, Hon'ble Member of Parliament.



17. National Sugar Institute, Kanpur developed cheaper technology for producing "**Solid Alcohol**". This will enable the use of solid form of alcohol in place of petroleum products, viz. "paraffin" in the occasions viz. catering trade, tourism and field work for heating and warming purposes.



18. राष्ट्रीय शर्करा संस्थान में "शिक्षक दिवस" समारोह, छात्रों की क्रिया-कलाप परिषद द्वारा आयोजित किया गया। समारोह में संस्थान के छात्रों की वैज्ञानिक समिति के उपाध्यक्ष ने संस्थान के शिक्षकों के प्रति अपना आभार व्यक्त करते हुए उनसे जीवनपर्यंत पथ-प्रदर्शक की भूमिका का निर्वहन करने का अनुरोध किया। छात्रों की क्रिया-कलाप परिषद द्वारा इस अवसर पर जहाँ संस्थान

के वरिष्ठ शिक्षकों का सम्मान किया गया वहीं छात्र और शिक्षकों के बीच में बेहतर समन्वय स्थापित करने हेतु कई प्रतियोगितायें भी आयोजित की गयीं।



19. Shri Narendra Mohan, Director, National Sugar Institute, Kanpur was conferred "**Bharatiya Sugar- Overall Outstanding Performance- Institute of the Year Award**" at Pune on 8th September 2022.



20. For the new students of National Sugar Institute, a fresher's party "**FRESHO - 2022**" was organized on 11th September 2022, by the senior students of the institute.



The programme was inaugurated by lighting of the lamp by Shri Narendra Mohan, Director of the institute.

21. Students of B.Tech. & M. Tech. (Food & Bio- Technology) courses of Integral University, Lucknow visited National Sugar Institute, Kanpur on 14th and 21st September 2022 respectively, to know about recent trends in sugarcane farming, processing and production of value-added products from by-products using innovative technologies.



22. Operation of "**Micro Brewery**" commenced on 16th September 2022, at National Sugar Institute, Kanpur.



A 200 liter/day capacity brewery is operated during every academic session to impart practical knowledge to the students of Industrial Fermentation & Alcohol Technology Course viz. about design feature of

plant & machinery and process parameters.

23. संस्थान मे “विश्वकर्मा जयंती” दिनांक १७ सितम्बर २०२२ को संस्थान के यन्त्र एवं प्रायोगिक शर्करा प्रयोगशाला मे मनाई गयी। संस्थान के निदेशक एवं अन्य कर्मियों और छात्र-छात्राओं ने इस अवसर हवन एवं भगवान् विश्वकर्मा की आरती समारोह मे भाग लिया।



24. Shri Narendra Mohan, Director, National Sugar Institute, Kanpur received First Prize for the paper on “**Bio-ethanol from sugar industry- the tool for survival**” during the 67th Annual Convention of DSTA on 18th September 2022, at Pune, in the presence of Shri Sharad Pawarji and Sugar Commissioner (Maharashtra). Director, National Sugar Institute, Kanpur also address to the delegates wherein he focused on “**Sugar Industry @2047**”.



25. Director, National Sugar Institute, Kanpur addressed “**Green Sugar Summit**” organized by Confederation of Indian Industry (CII) on 19th Sept. 2022, at New Delhi. He discussed various aspects of clean and green processing to clean and green energy.



26. Operation of “**Nano Grain Based Ethanol Unit**” commenced at National Sugar Institute, Kanpur on 20th Sept. 2022. The unit has been integrated with existing “**Molasses Based Ethanol Unit**”, so now the unit can produce ethanol from juice, syrup and molasses or from grains viz. rice and maize etc.



27. During the month of September “**Annual Sports -2022**” were organized at National Sugar Institute, Kanpur. Inauguration of the meet was made by Shri Narendra Mohan,

Director at the Gymnasium of the institute.



28. Campus Interviews during the period conducted by M/s Mawana Sugars Ltd., M/s Balrampur Chini Mills Ltd., M/s DCM Shriram Ltd. (Sugar Division) & M/s Wave Sugar Industries Ltd, M/s Renuka Sugars Ltd. and M/s NSL Sugars Ltd. and M/s Uttam Sugar



Mills Ltd for recruitment of Sugar Technologists, Alcohol Technologists and Sugar Engineers etc. In the first phase of recruitment more, than 150

students of various courses were selected during the month.



29. Meeting of “**Sugar Industry Sectional Committee**” under Bureau of Indian Standards held under the Chairmanship of Director, National Sugar Institute, Kanpur on 23rd Sept. 2022. Specifications for several special sugars viz. low sulphur sugar, light brown and dark brown sugar were finalized on behalf of BIS.

