



## **NATIONAL SUGAR INSTITUTE**

**KANPUR – 208017 (U.P.) INDIA**



The sugar season 2021-22 has commenced on a happy note for the Indian Sugar Industry with better sugar prices and ever increasing demand of ethanol. With favorable internal and external factors, the sugar prices are expected to be stable.

Considering production of sugar to the extent of 30.8 MMT for ethanol after discounting 3.5 MMT of sugar for ethanol and probable exports of 5.0 MMT, the estimated closing stocks at the end of the season shall be about 7.3 MMT. It is heartening to see the highest increase in ethanol blending to the extent of during the year 2020-21 8.1%. As regards Institute, it remained vibrant with many activities viz. celebrating its foundation day, organizing STAI convention and its 50<sup>th</sup> Convocation. The coming New Year is likely to see a buzzing sugar industry and institute.

**Wish you all a very Happy, Safe and Prosperous New Year  
2022**

**Narendra Mohan  
Director**

# NEWSLETTER

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<http://www.nsi.gov.in>  
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**October - December  
2021**

## FOUNDATION DAY CELEBRATED:

National Sugar Institute, Kanpur while celebrating its “**Foundation Day**”, also jointly organized 79th Annual Convention of Sugar Technologist Association of India (STAI) & International Expo on 4th-5th October 2021. More than 5000 delegates attended the program through online and off-line mode. Function was graced by Hon'ble Governor of U.P., Secretary (F & PD) and Additional Chief Secretary, Government of Uttar Pradesh. The Governor of U.P., congratulated NSI, Kanpur on its Foundation Day and stressed on working for greater farm mechanization, productivity enhancement and improvement in the quality of sugar to meet market requirements. She also lauded the role of NSI, Kanpur & STAI in growth & development of Indian Sugar Industry.



Secretary (Food & Public Distribution), Government of India, Shri Sudhanshu Pandey called upon the sugar industry to work together with NSI, Kanpur & other institutions to find solutions to its various problems & develop a road map for sustainability.



## 50th CONVOCATION CELEBRATED:

**50th Convocation** of National Sugar Institute, Kanpur was held on 16<sup>th</sup> November 2022. It was graced by Hon'ble Minister of Commerce & Industries, Textiles, Consumer Affairs, Food & Public Distribution and Hon'ble Minister of State, Consumer Affairs, Food & Public Distribution and Rural Development.



Shri Subodh Kumar Singh, IAS, Joint Secretary (Sugar & Administration),



Department of Food & Public Distribution also graced the function. Fellowship, PG Diplomas and Certificates were conferred to 450 students who passed out during academic session 2018-19 and 2019-20.



### TRAINING PROGRAMME ORGANISED:

Five days training programme on **"Operation of Sugar Factories & Distillery Units and their Effluent Management Techniques"** for the scientists of Central Pollution Control Board (CPCB) and National Mission for Clean Ganga (NMCG) was conducted by National Sugar Institute, Kanpur from 6th -10th December 2021. During the programme, officials from CPCB, Delhi, NMCG, Delhi, CPCB, Regional Directorate, Kolkata and CPCB, Lucknow participated in the programme.



An industrial visit of sugar factory/distillery unit for all the participants was also conducted a part of the training programme.

### MoA/MoU SIGNED:

1. National Sugar Institute, Kanpur on 18th October 2021, signed a Memorandum of Agreement (MoA) with M/s Hydranautics, a Nitto Group multinational company, for developing membrane based technology for concentrating the sugar cane juice. First phase of trials to commence at M/s Balrampur Chini Mills Ltd., Kumbhi, Uttar Pradesh.



2. National Sugar Institute, Kanpur on 25th November 2021, signed a Memorandum of Agreement (MoA) with

M/s Guljag Industries Ltd., Jodhpur, according to which the two organizations shall undertake development of sodium meta-bi-sulphite based innovative product for clarification of sugarcane juice.



3. National Sugar Institute, Kanpur on 30th November 2021, signed a MoU with Central Food Technological Research Institute (CFTRI), Mysore to conduct research work jointly on developing newer technologies and products. NSI, Kanpur to conduct special training programmes for CFTRI students of M.Sc. (Food Technology) course.



4. National Sugar Institute, Kanpur on 15th December 2021, signed a Memorandum of Agreement (MoU) with M/s Catalyst Biotechnologies to work on developing and testing enzymes to

minimize deterioration of B Heavy molasses and syrup during storage. This is expected to give a boom to ethanol production from these feed stocks.



## 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** - A paper entitled “Vanillin synthesis from sugarcane bagasse lignin in a bio refinery concept” was sent for presentation in upcoming SUGARCON-2022 and it has been accepted for presentation. The scale up study is ongoing on pressure reactor at 10 gm scale.

**2. Studies on synthesis of lactic acid from sugarcane bagasse hemicellulose** - The characterization is not in favour of production of lactic acid in noticeable yield under applied conditions. The experiments related to varying different reaction conditions such pressure, pH temperature and loading of the catalyst in pressure reactor have been planned & experiments to be conducted shortly.

**3. Studies on production of chloromethyl furfural from bagasse**

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**derived cellulose in biorefinery approach** - 5-(Chloromethyl) furfural (CMF) is a carbohydrate-derived platform molecule that is gaining attention as a more practical alternative to 5-(hydroxymethyl) furfural (HMF). It can be derived from cellulose. Thus, in light of our current interest to valorise each component of sugarcane bagasse, it will be promising approach for up-grading the value-added products from bagasse derived cellulose via synthesis of CMF.

**4. Studies on Sweet Sorghum Bagasse value addition** - Sweet sorghum bagasse is an untapped resourceful carbon-rich material that can be thermo chemically converted into various value-added product by implementing biorefinery approach. In light of current ongoing studies in the institute on sweet sorghum, the studies on generated by product- sweet sorghum bagasse will be fruitful in connecting total value chain. In this light, literature survey has been done and preparation of sweet sorghum bagasse towards utilizing it as a starting material for conducting experiments has been done.

**5. To study the impact on performance of mechanically coupled twin induction motor drives for Shredder/ Fibrizer having unequal sharing of load and to design & develop dedicated drive for the application** - The items related to the research work taken to HBTU lab for interfacing, testing etc. The work is in progress & is expected to be completed soon. The programming part of microcontroller is under progress. Some

corrections as per the requirement are being made.

**6. Utilization of Potash Rich ash for production of valuable bio fertilizer** - Field Experiment on sugarcane crop is on-going and crop will be harvested in mid of February 2022 so as to assess the effects of bio-fertilizers on its growth. Various parameters of the resultant juice will be analysed viz. Brix, Pol, Purity, RS, TRS, Ethanol yield along with yield attributing characters of sugarcane.

**7. Study of yield and ethanol production potential from sweet sorghum in subtropical region** - Five sweet sorghum varieties were grown at agriculture farm of the National Sugar Institute during August, 2021 and four nos. CSH 22SS, SSV 84, SSV 74 & ICSSH-28 were harvested during December, 2021. All the harvested sorghum varieties performed well in terms of physical appearance and average yield varied from 42 to 55 t/ha. The sweet sorghum varieties harvested on the basis of maturity and crushed by laboratory crusher (extraction percent varied from 60 to 65%) and extracted juice was utilized for assessing bioethanol potential.



**8. Effect of Lead and Non-Lead clarificants on Polarization** – The comparative study is being made to determine the polarisation of cane juice and other sugar liquor using lead subacetate and non-lead reagent (e.g. carrez's reagent) as clarificants and also by polarizing at the wavelength of 880 nm i.e. in NIR regions.

**9. Use of B-heavy molasses as edible molasses** – Few samples of B-heavy molasses were collected from sugar factories which are producing plantation white sugar, raw sugar and refined sugar & were analysed for Brix %, Pol %, Purity, RS% and TRS% etc. During the study, the analysis of heavy metals & other components like Ca, Mg, Mn, K & Fe etc., yeast and microbial count were also carried out. Further studies on some more samples are going on to conclude the study.

#### **RESEARCH PAPER:**

1. A research paper entitled **“Natural Low Calorie Liquid Sugar from Sweet Sorghum – Commitment Toward Healthier Lifestyle”** by Narendra Mohan, Anushka Agarwal & Shruti Shukla, has been published in the proceedings of 79th Annual Convention of STAI, 4th - 5th October, 2021, PP-387 to 394.

2. A research paper entitled **“Trial of condensate polishing unit for sugar factories”** by Vanishtha Shukla, Sudhanshu Mohan, Sunil Bhate and Narendra Mohan has been published in the proceedings of 79th Annual Convention of STAI, 4th - 5th October, 2021, PP-415 to 425.

3. A review paper titled **“Possibilities of producing Biogas/CBG from filter cake”** by Narendra Mohan was sent for publication in International Journal for Scientific Research and Development (IJSRD), 30th October 2021.

4. A review paper titled **“Indian sugar industry: a potential hub for bio-energy”** by Narendra Mohan was sent for publication in Agricultural Science Congress 2021 held at BHU, Varanasi, October 19th, 2021.

5. A research paper entitled **“Bio-ethanol from sugar industry – The tool for survival”** by Narendra Mohan has been published in the proceedings of 66th Annual Convention & Sugar Expo 2021 of DSTA, October 30th, 2021.

6. A research paper entitled **“A Different Approach towards Controlling pH at Juice Clarification”** by Subhash Chandra, Virendra Kumar & Narendra Mohan” has been published in the proceedings of 79th Annual Convention of STAI, 4th - 5th October, 2021, PP-294 to 298.

7. A research paper entitled **“Compressed Biogas from Filter Cake of Sugar Industry”** by Narendra Mohan, Director, NSI Kanpur & Sanjay Awasthi, has been sent for publication in Cogen India Newsletter, Nov-Dec 2021.

8. A paper titled **“Performance Comparison of Conventional and Variable Frequency Drives for Sugar Cane Preparatory Devices”** by Vinay Kumar & D. Swain, has been sent for publication in the proceedings of 7th IAPSIT International Sugar Conference

and SUGARCON 2022, to be held at Lucknow.

9. A paper entitled **“Vanillin synthesis from sugarcane bagasse lignin in a biorefinery concept”** by Narendra Mohan, Dr. V.P. Srivastava, Chitra Yadav & Mamta Shukla, has been sent for presentation in upcoming 7th IAPSIT International Sugar Conference and SUGARCON-2022, to be held at Lucknow.

10. A research paper entitled **“Sugar Production to Meet Changing Market Requirements”** by Narendra Mohan has been sent for publication in Indian Sugar in December 2021.

### CONSULTANCY:

Request for availing consultancy services of the institute was received from the following 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.

1	M/s Bajaj Hindusthan Sugar Ltd., Unit – Rudauli, District – Basti, U.P.
2	M/s The Kisan Sahkari Chini Mills Ltd., Anoopshahar, District – Bulandshahar, U.P.
3	M/s UP Co-operative Sugar Mills Federation Ltd., Distillery Unit, Anoopshahar, U.P.
4	M/s Kisan Sahkari Chini Mills Ltd., Ghosi, District – Mau, U.P.
5	M/s Parle Biscuits Pvt. Ltd., (Distillery Division),

	District – Bahraich, U.P.
6	M/s Jubilant Ingrevia Limited, District – Amroha, U.P.
7	M/s Kisan Sahakari Chini Mills Limited, Najibabad, District – Bijnor, U.P.
8	M/s Bajaj Hindusthan Sugar Limited, Unit – Gola Gokarnath, District – Lakhimpur Kheri U.P.
9	M/s Bajaj Hindusthan Sugar Limited, Unit – Pratapur, District – Deoria, U.P.
10	M/s Magadh Sugar & Energy Limited, Unit – Hasanpur, Bihar.
11	M/s Triveni Engineering & Industries Ltd., Unit – Sabitgarh, District – Bulandshahar, U.P.
12	M/s Bajaj Hindusthan Sugar Limited, Unit – Gangnauli, District – Shahjahanpur, U.P.
13	M/s Bajaj Hindusthan Sugar Ltd., Unit – KhambharKhera, District – Lakhimpur Kheri, U.P.
14	M/s Bajaj Hindusthan Sugar Limited, Thana Bhawan, District – Shamli, U.P.
15	M/s Harinagar Sugar Mills Limited, Harinagar, District – West Champaran, Bihar.
16	M/s Bajaj Hindusthan Sugar Mills Limited, Unit – Palia Kalan, District – Kheri, U.P.
17	M/s Avadh Sugar & Energy Limited, Unit – Hargaon, District – Sitapur, U.P.
18	M/s Upper Doab Sugar Mills, District – Shamli, U.P.
19	M/s L.H. Sugar Factories Limited, District – Pilibhit, U.P.
20	M/s Indian Potash Limited, Unit – Rohana Kalan, District –

	Muzaffarnagar, U.P.
21	M/s Bajaj Hindusthan Sugar Limited, Unit – Kundarkhi, District – Gonda, U.P.
22	M/s Dalmia Bharat Sugar & Industries Unit – Nigohi, District – Shahjahanpur, U.P.
23	M/s DCM Shriram Limited, Distillery Unit – Ajbapur, District – Lakhimpur Kheri, U.P.
24	M/s Dalmia Bharat Sugar & Industries Limited, Unit – Jawaharpur, District – Sitapur, U.P.
25	M/s Malbros International Private Limited, District – Ferozepur, Punjab.
26	M/s Om Sons marketing Private Limited, Bathinda, Punjab.
27	M/s Balrampur Chini Mills Limited, Unit – Akbarpur, U.P.
28	M/s Avadh Sugar & Energy Limited, Unit – Seohara, District – Bijnor, U.P.
29	M/s HPCL Biofuels Limited, Unit – Sugauli, District – East Champaran, Bihar.
30	M/s HPCL Biofuels Limited, Unit – Lauria, District – West Champaran, Bihar.
31	M/s Triveni Engineering & Industries Limited, Unit – Chandanpur, District – Amroha, U.P.
32	M/s DCM Shri Ram Limited, Sugar Unit – Ajbapur, District – Shahjahanpur, U.P.
33	M/s Tikaula Sugar Mills Limited, District – Muzaffarnagar, U.P.
34	M/s Tikaula Distillery, District – Muzaffarnagar, U.P.

35	M/s Bajaj Hindusthan Sugar Limited, Unit – Utraula, District – Balrampur, U.P.
36	M/s Triveni Engineering & Industries Ltd., Unit – Rani Nangal, District – Moradabad, U.P.
37	M/s Balrampur Chini Mills Limited, Unit - Balrampur, U.P.
38	M/s K.M. Sugar Mills Limited, Masaudha, District – Ayodhya, U.P.
39	M/s Vishwaraj Sugar Industries Limited, District – Belagavi, Karnataka.
40	M/s The Shahabad, Co-operative Sugar Mills Limited, District – Kurukshetra, Haryana.
41	M/s Dalmia Bharat Sugar & Industries Limited, Unit – Jawaharpur, District – Sitapur, U.P.
42	M/s Magadh Sugar & Energy Limited, Sidhwalia Gopalganj, Bihar.
43	M/s Balrampur Chini Mills Limited, Unit – Maizapur, District – Gonda, U.P.
44	M/s The Seksaria Biswan Sugar Factory Limited, Biswan, District – Sitapur. U.P.
45	M/s Uttam Sugar Mills Limited, Distillery Division, Barkatpur, District – Bijnor, U.P.
46	M/s Jaywant Sugars Limited, Satara, Maharashtra.
47	M/s Bajaj Hindusthan Sugar Limited, Unit – Rudhali, District – Basti, U.P.
48	M/s Bajaj Hindusthan Sugar Ltd., Unit – Khambharkhera, Distt. – Lakhimpur Kheri, U.P.
49	M/s EID Parry (India), District –



	Srikakulam, Andhra Pradesh.
50	M/s Balrampur Chini Mills Limited, Babhnan, District – Gonda. U.P.
51	M/s Wave Sugar & Industries Limited, Dhanaura Mandi, District – Amroha, U.P.
52	M/s Simbhaoli Sugars Limited, Brijnathpur, District – Hapur, U.P.
53	M/s Mawana Sugar Works Mawana, District – Meerut, U.P.
54	M/s Dalmia Bharat Sugar & Industries Ltd., Sugar Unit - Ramgarh, District – Sitapur, U.P.
55	M/s Dalmia Bharat Sugar & Industries Ltd., Distillery Unit-Ramgarh, District – Sitapur, U.P.
56	M/s Uttam Sugar Mills Limited, Sugar Unit – Barkatpur, U.P.
57	M/s Bajaj Hindusthan Sugar Limited, Maqsoodapur, District – Shahjahanpur, U.P.
58	M/s Balrampur Chini Mills Limited, Babhnan (Chemical Division) District – Gonda, U.P.
59	M/s Balrampur Chini Mills Limited, Gularia, District – Lakhimpur Kheri, U.P.
60	M/s Balrampur Chini Mills Ltd., Unit – Tulsipur, District – Balrampur, U.P.
61	M/s DCM Shri Ram Limited, Sugar Unit – Hariawan, District – Hardoi, U.P.
62	M/s DCM Shri Ram Limited, Sugar Unit – Rupapur, District – Hardoi, U.P.

### 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 & BIS 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:

1	M/s The Kisan Sahkari Chini Mills Ltd., Satha, Aligarh, U.P.
2	M/s The Kisan Sahkari Chini Mills Ltd., District - Budaun, U.P.
3	M/s Danteshwari Maiya SSK Maryadit, Balod, Chhattisgarh.
4	M/s The Kisan Sahkari Chini Mills Limited, Pilibhit, U.P.
5	M/s Triveni Engineering & Industries, Unit – Khatauli, U.P.
6	M/s Triveni Engineering & Industries, Unit – Deoband, U.P.
7	M/s Kisan Sahkari Chini Mills Limited, Lakhimpur Kheri, U.P.
8	M/s The Ganga Kisan Sahkari Chini Mills Limited, Morna.
9	M/s L.H. Sugar Factories Limited, Pilibhit, U.P.
10	M/s Simbhaoli Sugars Limited, Unit – Chilwaria, Bahraich, U.P.
11	M/s Triveni Engineering & Industries, Deoband, Saharanpur, U.P.
12	M/s Dalmia Bharat Sugar & Industries Limited, Nigohi.
13	M/s HPCL Sugar, East Champaran, Bihar.
14	M/s Kisan Sahkari Chini Mills Limited, Badaun, U.P.
15	M/s Sarjoo Sahkari Chini Mills Limited, Belrayan, Kheri, U.P.

16	M/s Balrampur Chini Mills Limited, Unit - Kumbhi, District - Lakhimpur Kheri, U.P.
17	M/s HPCL, Biofuels Limited, Lauriya, District - East Champaran, Bihar
18	M/s Triveni Engineering & Industries Limited Unit - Khatauli, U.P.
19	M/s Triveni Engineering & Industries Limited, Unit - Deoband, U.P.
20	M/s Dhampur Sugar Mills, Unit - Meerganj, Bareilly, U.P.
21	M/s Dhampur Sugar Mills, Unit - Asmoli, District - Moradabad, U.P.
22	M/s Dhampur Sugar Mills, Unit - Dhampur, District - Bijnor, U.P.
23	M/s Dhampur Sugar Mills, Unit - Rajpura, District - Sambhal, U.P.
24	M/s Balrampur Chini Mills Ltd., Unit - Gulariya, Lakhimpur, U.P.
25	M/s The Kisan Sahkari Chini Mills Ltd., Kaimganj, District - Farrukhabad, U.P.
26	M/s The Kisan Sahkari Chini Mills Ltd., Sathiaon, District - Azamgarh, U.P.
27	M/s The Ugar Sugar Works Limited, Kalburagi, Karnataka
28	M/s The Ramala Sugar Mills Limited, Bagpat, U.P.
29	M/s Balrampur Chini Mills Limited, Unit - Akbarpur, U.P.
30	M/s Triveni Engineering & Industries Limited, Rani Nangal, U.P.
31	M/s Kisan Sahkari Chini Mills Limited, Semikhera, Bareilly, U.P.
32	M/s Magadh Sugar & Energy Limited, Sidhwalia, Bihar

33	M/s Avadh Sugar & Energy Limited, Hargaon, Sitapur, U.P.
34	M/s Gobind Sugar Mills Limited, Lakhimpur Kheri, U.P.
35	M/s Daurala Sugar Mills Limited, District - Meerut, U.P.
36	M/s Balrampur Chini Mills Limited, Babhnan, U.P.
37	M/s The Kisan Sahkari Chini Mills Limited, Anoopshahar, Bulandshahar, U.P.

### SALE OF SUGAR STANDARDS:

Sale of sugar standard grades commenced from 1st October 2021 for the sugar season 2021-22. Standard grades can be procured online also. The details are available on institute website <http://www.nsi.gov.in>.

### OUR OTHER ACTIVITIES:

1. राष्ट्रीय शर्करा संस्थान, कानपुर में 2 अक्टूबर 2021, गांधी जयंती के अवसर पर भारत माँ के दो महान सपूतों, राष्ट्रपिता महात्मा गाँधी और प. लाल बहादुर शास्त्री को नमन किया गया। संस्थान द्वारा इस अवसर पर आयोजित कार्यक्रम में स्वच्छता मिशन के अंतर्गत मास्क एवं कपड़े के झोलों का वितरण गया।



2. Director, National Sugar Institute, Kanpur was awarded by two Gold Medals

during 79th Annual Convention of STAI, "**Dr. P J Manohar Rao Gold Medal**" for carrying out significant work on value addition through use of by-products in an innovative manner and "Noel Deerr Gold Medal" for the research paper on production of alkyl levulinates from bagasse on 4th -5th October, 2021.



3. "**Campus Recruitment**" was carried out at NSI, Kanpur during the period. Interviews were conducted by M/s Balrampur Chini Mills Ltd., M/s Dhampur Sugar Mills Ltd., M/s Renuka Sugar Mills Ltd., M/s DCM Shriram Ltd., & M/s Triveni Engineering & Industries Ltd. etc. In addition to them various reputed chemical and machinery manufacturing companies such as M/s Catalyst Bio technologies, M/s VRL Automation and Spray Engineering Devices Ltd. also recruited students of various courses.



4. Shri Sudhansu Pandey, Secretary (Food & Public Distribution) Government of India, visited National Sugar Institute, Kanpur on 11th October 2021 and inspected various academic, research and other activities. He also discussed the road map for taking institute forward. He also chaired a meeting with Sugar Industry representatives on issues of pending cane payments, ethanol blending and multiple other issues of value addition.





5. The "**Conventional Khandsari Unit**" of National Sugar Institute, Kanpur, lying closed since 1984 to be revived. It shall be utilized for running short duration training programmes on Khandsari and Jaggery production. Training to focus on production of various kinds of Jaggery viz. cube, cream, liquid, fortified etc. and also on jaggery based bakery and confectionary products.



6. Hon'ble Minister of State, Consumer Affairs, Food & Public Distribution and Rural Development, Government of India, Sadhvi Niranjana Jyoti, reviewed the working of National Sugar Institute, Kanpur on 19th October 2021. Prof. Narendra Mohan, Director, National Sugar Institute, Kanpur detailed her about the current teaching, research and consultancy activities of the institute.



7. Director, National Sugar Institute, Kanpur attended Annual General Meeting of UP Sugar Mills Association on date 20th October 2021 and addressed on issues related to Co-generation of power and value addition by the Indian sugar industry.



8. Director National Sugar Institute, Kanpur, was conferred Life Time Achievement Award by "Deccan Sugar Technologists Association" (DSTA) on 30th October 2021 for his long and outstanding services to the sugar industry.



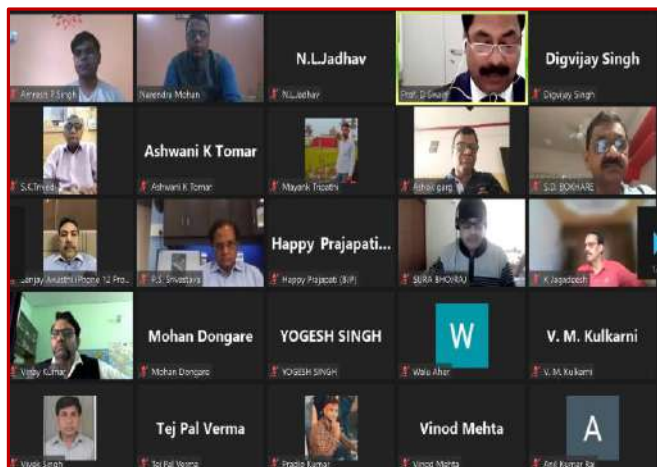
9. A presentation on "Sugar industry - A Potential Hub for Bio-Energy" was made by Director, National Sugar Institute, Kanpur during the XV Agricultural



Science Congress & ASC Expo BHU Varanasi, UP on 15th November 2021.



10. आज़ादी के अमृत महोत्सव के अंतर्गत एवं महान वैज्ञानिक भारत रत्न व नोबल पुरस्कार विजेता सी वी रमन की जयंती पर एक विचार गोष्ठी "देश के चीनी उद्योग की आत्मनिर्भरता में टेक्नोलॉजी का महत्व" विषय पर आयोजित की गयी। इस गोष्ठी में संस्थान के विषय विशेषज्ञों के अतिरिक्त देश के अनेक वैज्ञानिकों एवं विशेषज्ञों ने भी भाग लिया।



11. National Sugar Institute Kanpur organized meeting with faculty of Chhatrapati Shahu Ji Maharaj University, Kanpur University (CSJM), faculties under the Chairmanship of Director, NSI to plan for collaborative research on development of bio-lubricants, fortified sweeteners and other value added products.



12. राष्ट्रीय शर्करा संस्थान की छात्र क्रिया परिषद की ओर से दिनांक 12 नवंबर को परिसर में निशुल्क स्वास्थ्य शिविर का आयोजन किया गया। शिविर में डॉ. विपिन श्रीवास्तव, डॉ. रोहित तिवारी, डॉ. निधिका पांडेय एवं डॉ नमन कनोडिया ने मरीजों की जाँच की और मुफ्त में दवाये दी। शिविर में छात्र-छात्राएं, शिक्षक, कर्मचारियों, के अलावा आसपास के लोगों ने भी भाग लिया.



13. Under the auspices of Scientific Society, Council of Students Activities, National Sugar Institute, Kanpur Annual Sports were organized during the period. Prize distribution for Annual Sports was made on 13<sup>th</sup> November 2021 by the Director.





14. Students of ANSI (Sugar Technology) course visited the institute farm for learning technique of conducting **"Pre-harvest Cane Maturity Survey"** so to harvest cane at optimum maturity & also about importance of crop rotation. Students also discussed about the harvesting of sugarcane at optimum maturity and post harvest management.



15. Director NSI, Kanpur, addressed a webinar on the topic **"Indian Sugar Industry: Striving to Achieve Environmental Sustainability"** on the National Pollution Control Day on 2nd December 2021.



16. Director National Sugar Institute, Kanpur visited to M/s Balrampur Chini Mills Ltd., Unit – Tulsipur, Balrampur to inaugurate their power export unit, commencement of crushing season as well.



17. A workshop for creating awareness on **"Sexual Harassment of Women at Workplace"** was conducted at National Sugar Institute, on 9th December 2021.



18. Students of BND College, Kanpur visited various laboratories of the institute and also the Experimental Sugar Factory to seek first-hand information about unit operations and got insight of courses and employment opportunities in sugar industry.

