



**July -
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Ethanol blending programme has helped India to achieve some significant milestones on the road to its energy security goals. Through blending ethanol, a bio fuel made from sugar and grains with petrol the country has saved over a lot by cutting huge fuel imports. Also, the share of Ethanol blending in petrol had touched 15% as of September and India is on course to achieve a 20% blending target by next year. The ethanol blending program also reduced carbon dioxide emissions in the transport sector by 54 million tonnes moving for achieving India's net zero emission target by 2070. Also India vision to diesel vehicles running on ethanol-blended diesel very soon.

The renewable energy sector in India faces a significant skill gap, with a shortage of 1.2 million professionals. There is a shortage of talent at all levels. The largest gap is at entry level. This need to be addressed to keep pace with Industry changes.

The institute started the academic session 2024-25 with full of enthusiasm following All India Online Entrance Exam, Counselling and Admission. The institute persisted with various energetic activities during the period by providing training program to various stake holders including Uttar Pradesh Co-operative Sugar Mills Members and U.P Excise officers. The institute also hosted three days Executive Development Programme for executive personnel of various sugar factories. Institute along with other regular activities celebrated Swacchata Pakwada and Hindi Pakwada involving all staff and students in a grand manner. Institute staff bringing laurels been conferred Prestigious Noel Deer Gold Medal and ISGEC Gold Medal for their excellence in their respective fields.

As the sugar and ethanol industry is doing good and have a bright future with government policies, students of the institute will also be benefitted and we are sure to achieve 100% placement through campus only.

Dr. Seema Paroha
Director

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❖ **NATIONAL SEMINAR**

- Dr. Seema Paroha, Director was awarded ISGEC gold medal in “Process Technology” for her valuable contribution in the development of sugar industry in India during 82nd STAI annual convention and international sugar expo 2024 held at Jaipur.
- Dr Seema Paroha, Director, Dr. Ashok Kumar, Assistant Professor and Mr. D. Swain, Ex Director, NSI, awarded by “Noel Deer Gold Medal” for the Research paper titled “Target E20 Sustainability” during 82nd STAI annual convention and international sugar expo 2024 held at Jaipur.



- Dr. Seema Paroha, Director, NSI delivered a lecture on "Potential of CBG and Hydrogen in Sugar Industry" at Mumbai on 27th July 2024 during Sugar



and Bioenergy Conclave organized by All India Sugar Trade Association.

- Shri AK Kanaujia and Dr. Vinay Kumar, Asstt. Professors (Sugar Engineering) Co-Chaired two technical sessions during the 82nd STAI annual convention and international sugar expo 2024 held at Jaipur.



- Dr. Vinay Kumar, Assistant Professor, NSI Kanpur Presented paper on the topic “Efficacy of using variable frequency drives for Sugarcane Preparation machines” during 82nd STAI annual



convention and international sugar expo 2024 held at Jaipur.

- Shri Amresh Pratap Singh and Shri Mihir Mandal, Assistant Professor presented the paper entitled “Use of Artificial Intelligence in the sugar factory - A New Tool” during 82nd STAI annual convention and international sugar expo 2024.



- Mr. N. M. Agrawal Ex-Director, NSI Kanpur, Dr. Chitra Yadav and Mamta Shukla received Silver Medal for their paper presented on "Biorefinery approach for the Production of Vanillin from Sweet Sorghum bagasse" during SISSTA's 53rd Annual Convention held at Bangalore on 19th August, 2024.



- Mr. Narendra Mohan, Ex-Director, NSI Kanpur and Mr. Mahendra Kumar Yadav, Jr. Technical officer (Sugar Technology) awarded by the “Mangal Singh Memorial Gold Medal” for their outstanding paper on "Melt Carbonation - A Different Approach & Its Comparison with Phosphatation” on the 69th Annual Convention of DSTA held on 24th August, 2024 at Pune.
- Dr. Seema Paroha, Director, NSI Kanpur attended SISSTA 53rd Annual Convention, 2024 held at Bangalore on 19th August, 2024 as special guest.



- Dr. Vinay Kumar, Assistant Professor (Sugar Engineering) presented research paper on the topic "Further Opportunities for Energy Saving in Mill Drives" on



SISSTA 53rd Annual Convention, 2024 held at Bangalore on 19th August, 2024.

- Shri M. K. Yadav, Junior Technical Officer (Sugar Technology), NSI, Kanpur presented a research paper on “Environment Friendly Process of Refined Sugar Production” and chaired a session also during a seminar at S. Nijalingappa Sugar Institute, Belagavi on 21st September, 2024.



- Dr. Vinay Kumar, Assistant Professor (Sugar Engineering) delivered a lecture on the topic “Power : Saving Potentials & Quality Issues in Sugar Industry” on 29th Sep 2024 during the three days Executive Development Programme-2024.

❖ TRAININGS

- A keynote lecture on "Space Technology for Development in North Eastern Region" was delivered by Dr. S. P. Agarwal, Director North Eastern Space Applications Centre (NESAC)



- An Insightful lectures on Sugar Technology and Sugar Engineering for the final year students of NSI were delivered 21st August, 2024 by Mr. Pankaj Shahi (General Manager -Production) & Mr. Ravi Srivastava, (Sr. General Manager-Engineering), Balrampur Chini Mills Ltd.





- Expert Lecture on developing student skills delivered by Mr. K. N. Rai, Assistant Vice President (HR, Legal & Admin) at NSI Kanpur for offering his expertise to the final year students to prepare themselves for placements, portfolio developments, pre-placement talks, aptitude test, group discussion, interview skills and communication skills etc. under the aegis of Scientific Society on 22nd August, 2024.



- Various lectures were delivered by the faculty of National Sugar Institute, Kanpur through online mode during 23rd August- 9th September, 2024 in a training program organized by Lal Bahadur

Shastri Ganna Kisan Sansthan Lucknow for the officials of the Co-operative, Corporation and Private Sugar Mills.

- Following faculties of National Sugar Institute, Kanpur delivered lectures through online mode in a training organized by UP Sugarfed at LBS Ganna Kisan Sansthan, Lucknow for the officials of the Co-operative, Corporation and Private Sugar Mills during 23rd August to 9th September, 2024.
 1. “Plant Maintenance & Technical Innovation to Reduce Maintenance Cost” by Shri Sanjay Chauhan, APSE.
 2. “Cane handling, cane preparation, and juice extraction (milling)” by Dr. Vinay Kumar, APSE.
 3. “Post-harvest losses and their control measure to improve sugar quality” and “Management of cane Transportation” by Dr. Ashok Kumar, APAC .
 4. “Improvement of sugar quality and

reduction in losses” by Shri V.P.Singh.

5. “Environmental Laws of Distilleries” by Dr. Ananthalakshmi, APBC .
6. “Effluent Treatment In Distillery Units” by Dr. Ananthalakshmi APBC.
7. “ETP operation in Sugar Factories” by Shri Ashok Garg, APST.
8. “Latest Trends in Automation” by Shri Virendra Kumar, SIE.

- Various lectures were delivered by the faculty of National Sugar Institute, Kanpur during one day training program organized at Lal Bahadur Shastri Ganna Kisan Sansthan, Lucknow on 11th September, 2024 for the technocrats of sugar mills in Uttar Pradesh . The details of lectures delivered are as under-

1. “RS/ENA/Ethanol production process (Molasses & grain based Distillery) by Dr. Seema Paroha, Director.
2. “General Aspects of Boiler” by Shri Anoop Kanaujia, APSE.
3. “General Aspects of Mill House” by Dr. Vinay Kumar, APSE .
4. “Cane Management and Control Measures to improve Sugar Recovery” by Dr. Ashok Kumar, APAC .
5. “Spent wash Treatment for ZLD” by Dr. Ananthalakshmi, APBC.
6. “Effluent Management System source and mitigation through 3R” by Shri M .K. Yadav, JTO.
7. “Sugar Manufacture –raw/refined and Plantation White Sugar” by Shri V. P. Singh, JTO.



EXECUTIVE DEVELOPMENT PROGRAMME

Three days Executive Development Programme from 23rd -25th September, 2024 was organized by NSI, Kanpur on virtual mode. Shri Aswani Srivastava, Joint Secretary, Ministry of consumers Affairs, Food & Public Distribution, Department of Food & Public Distribution, Government of India, was the chief guest for the inaugural session and he gave the best wishes for the



success of the programme. Expert lectures were delivered by the eminent speakers on different aspects of sugar, Ethanol & Allied Industry and policy matters.

TRAINING PROGRAMME FOR EXCISE INSPECTORS OF UTTAR PRADESH

A five day training programme for the 27 Excise Inspectors from Uttar Pradesh Excise Department from 23rd -27th September, 2024 was organized by the National Sugar Institute, Kanpur. During the inaugural session chief guest Prof. Dr. Samsheer, Hon'ble Vice Chancellor, HBTU Kanpur, graced the occasion and addressed the gathering. Total 27 nos. Excise Inspector from different zones of Uttar Pradesh participated in the programme



❖ **MEETINGS**

MEETING ON “FORMULATION OF POLICY ON THE PRICING OF ETHANOL FROM VARIOUS FEEDSTOCK”

A meeting on “Formulation of policy on the pricing of ethanol from various feedstock” held on 05th August, 2024 at National Sugar Institute, Kanpur. During the meeting Dr. Seema Paroha (Director, NSI Kanpur) along with Shri Manmohan Sachdeva (Principal Advisor – Costing), Shri Prasenjit Deb (Advisor - Costing) and Shri Prashant Kumar Mishra (Assistant Director - Costing) from Ministry of Consumer Affairs, Food & Public Distribution, Department of Food & Public Distribution, New Delhi were present and discussed about pricing of ethanol from various feedstock for upcoming season.



ADVISORY COMMITTEE REVIEW MEETING

Dr. Seema Praoha, Director and Dr. Ashok Kumar, Assistant Professor (Agriculture Chemistry) National Sugar



Institute, Kanpur attended advisory committee review meeting (Autumn) held at UPCSR Sahajahanpur on 6th September, 2024. In this meeting scientist have presented their research work.

EXPERT COMMITTEE MEETING FOR FORMULATING THE SOP FOR FINAL MOLASSES STORAGE

Shri S. K. Trivedi, Assistant Professor (Sugar Technology) and Shri M. K. Yadav, Junior Technical Officer (Sugar Technology), National Sugar Institute,



Kanpur attended the expert committee meeting for formulating the SOP for final molasses storage in Co-operative sugar factories. Meeting was held at UP Co-operative Sugar Federation office Lucknow on 19th September, 2024.

MEETING OF EXPERT COMMITTEE FOR APPROVAL OF INDIAN SUGAR STANDARDS

11th meeting of Expert Committee for Approval of Indian Sugar Standards for Sugar Season 2024-25 was held on 30th September, 2024 at National Sugar Institute, Kanpur under the chairmanship of Director, Prof. Seema Paroha, NSI



Kanpur. The expert committee approved the Sugar Standards for the sugar season 2024-25 commencing from 1st Oct 2024. The meeting was attended by the representative from the Ministry of Consumer Affairs, DFPD, ISMA, BIS, NFCSF, FCI & IITR, etc.

❖ **RESEARCH ACTIVITIES:**

1. Investigation of Biochemical Characteristics impact on storage techniques of Sugar beet

Four varieties of Sugar beet namely – LKC – HB, IISR Comp.1, LS-6 and LKC 2020 were harvested from NSI farm. One set of sugar beet varieties was kept at room temperature and another set was kept at cold storage house. Biochemical characteristics of Sugar Beet stored at room temperature and cold storage room was studied following three month storage. It was observed that after three month of cold storage, the fungus aggregated in most of the sugar beet and sugar beet lost most of the water content. Still study under progress.

2. Collaborative Studies with M/s Advanta Seeds Pvt Ltd. Selected Sweet Sorghum varieties for Bio-ethanol Production

The representatives of M/s Advanta Seeds Pvt Ltd., has visited NSI farm for proper planning of seed sowing etc., The

NSI farm is getting ready for sowing seeds provided by Advanta Seeds Pvt. Ltd. During the period due to heavy rainfall and high wind velocity caused around 50 percent lodging of sweet sorghum plants in 4.5 acres land. Third Spray of coragen @0.3 ml/liter rate along with Bavistin for "Megasweet" sweet sorghum variety for 04.0 acres land (D.O.S.- 17.08.24) done. Study is under progress.

3. Comparative study on polarization by using lead, non-lead, clarificants and NIR polarimetry.

A comparative study on polarization is being carried out in sugar technology lab of the institute to analyse the effect of non-lead clarificants on raw sugar and refined sugar polarisation. Work under progress.

4. New Product Development- Low GI (Glycemic Index) Herbal Sugar.

A research study is being carried out in Sugar Technology research lab for exploring the possibilities of making of low GI herbal sugar. Collection /identification of different herbs for new product development is under progress.

5. Melt carbonation process and its comparison with phosphatation process.

The technology provider for the pilot plant trail has been finalized and MoU for the same is under consideration.

6. Comparative study of MOP and distillery K or maximization of Mung bean yield and Soil sustainability”

The study is being carried out in NSI farm by Agricultural Chemistry Division of the institute.

7. Comparative study of MOP and distillery K for maximization of Urd yield and Soil sustainability

The study is being carried out in NSI farm by Agricultural Chemistry Division of the institute

8. Evaluation of Sweet Sorghum Genotypes for their Adaptability and Biofuel Production in Central Plain Zone of U.P.

The collaborative study is being carried out by Agriculture chemistry & Bio chemistry division, trails on seven nos. sweet sorghum varieties (CSH-22SS, SSV-58SS, SSV-84, RVICSH-28, Phule Vashudhara, SPV-2890, SSV-52SS) under progress. Pesticides & herbicides were being applied and weeding is also done during the period, study is under progress.

9. ICUMSA Study on Determination of SO₂ Content in collected samples.

As per BIS specification the maximum limit SO₂ content is 50 mg/kg, whereas the ICUMSA method has a precision limit of 27.6 mg/kg. To validate the precision limit, specially the PWS produced by the method of double sulphitation, we are in the process of collecting the samples on pan India basis.

Till the collection of samples is in process, meanwhile we have collected the samples from BSS of National Sugar Institute, Kanpur and analysis is in the process.

10. International Collaborative Study for Colour Analysis in Sugar by GS9/1/2/3-8 Method.

The Method GS9/1/2/3-8 for determination of colour in Sugar is yet not finalized as a study of the effect of vacuum filtration on RDS of the test solution is not investigated. ICUMSA is conducting an International collaborative study for colour Analysis in sugar by GS9/1/2/3-8, for which ICUMSA has provide 26 numbers of sample of different verity through Referees and Associate Referees. The 26 numbers of samples received from ICUMSA were analyzed for more than parameters and the results were sent to ICUMSA through Referee. Project completed

❖ RESEARCH PAPERS / PRESENTATIONS:

- Paper entitled “A study of effectiveness of conventional V/s other different techniques for sugar cane juice clarification” by S. K. Trivedi sent for

publication in Co-operative Sugar Journal.

- Paper titled “ Efficient refined sugar production considering environmental impacts” by M.K. Yadav presented in online webinar conducted by U.V. Trienviro Pvt. Ltd. on 26th July 2024.
- A research paper titles "Further Opportunities for Energy Saving in Mill Drives" by Dr. Vinay Kumar, Assistant Professor (Sugar Engineering) presented in SISSTA 53rd Annual Convention, 2024 held at Bangalore on 19th August, 2024.
- Mr. Sanjay Chauhan, Assistant Professor (Sugar Engineering) received accolades for his paper presented on "Biofuels a clean and green source of bioenergy- to mitigate greenhouse gases" on SISSTA 53rd Annual Convention, 2024 held at Bangalore on 19th August, 2024.
- Paper titled "An overview of marketing mix components to encourage consumers adoption of speciality sugar" by Mr. Vivek Pratap Singh, JTO (Sugar Technology) presented on SISSTA 53rd Annual Convention, 2024 held at Bangalore on 19th August, 2024.

- संस्थान से प्रकाशित "शर्करा भारती" के तीसरे अंक में डा. विनय कुमार एवं श्री अनूप कनौजिया ने "हरित ऊर्जा और भारतीय शर्करा उद्योग" विषय पर तथा डा. सीमा परोहा, डा. अशोक कुमार एवं डा. लोकेश बाबर ने "एथेनॉल उत्पादन के लिए चुकंदर एक वैकल्पिक संसाधन" विषय पर लेख लिखा।

❖ **CONSULTANCY SERVICES:**

Requests for availing consultancy services of the institute were received and also provided to various sugar factories ethanol& other allied units on various technical matters relating to diversion of B-Heavy molasses/syrup, validation of ETPs, preparation of DPRs, validation of no increase in pollution loads in ethanol units upon enhancement in capacity etc.

Sl. No.	Factory Name
1	<i>M/s Crystal Balaji Industries Pvt. Ltd., Muzaffarnagar, U.P.</i>
2	<i>M/s Kesar Enterprises Ltd., Baheri, Distt. – Bareilly, U.P.</i>
3	<i>M/s Balrampur Chini Mills Ltd., Unit – Mankapur, Distt. – Gonda, U.P.</i>
4	<i>U. P. Cooperative Sugar Factories Federation Ltd., Rana Pratap Marg, Lucknow.</i>

5	<i>M/s Hafed Sugar Mills Assandh, Distt. – Karnal, Haryana.</i>
6	<i>M/s Mysore Paper Mills Lt. (Sugar Mill), Bhadravati, Karnataka.</i>
7	<i>M/s Magadh Sugar & Energy Ltd. Unit-Sidhwalia, Gopalganj, Bihar.</i>
8	<i>M/s Magadh Sugar & Energy Ltd., Unit – Bharat Sugar Mills, Distt – Gopalganj, Bihar</i>
9	<i>S. Nijaligappa Sugar Institute, Belagavi, Ganeshpur, Laxmitek, Belagavi, Karnataka.</i>

In addition to the above consultancy services following distilleries were also visited for third party inspection allotted by CPCB.

<i>Sl. No.</i>	<i>Factory Name</i>
1	<i>M/s Shri Gang Industries And Allied Products Limited, Sandila Hardoi (U.P.)</i>

❖ ANALYTICAL SERVICES:

Besides analysis of sugar & sugar house products, ethanol and effluents etc., Institute offers 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 and lime for various constituents also taken up during

the period. Analytical services were rendered to following:

<i>Sl. No.</i>	<i>Factory Name</i>
1	<i>M/s Zuari Industries Ltd. Unit – Gobind Sugar Mill, Lakhimpur, U.P.</i>
2	<i>M/s Rajashri Fine Chemical Industries India Ltd., Tilhar, Shahjahanpur, U.P.</i>
3	<i>M/s The Kisan Sahkari Chini Mills Ltd., Sugar Unit – Satha, Aligarh, U.P.</i>
4	<i>M/s HPCL Biofules Limited, Unit – Sugauli, Distt. – East Champaran, Bihar</i>
5	<i>M/s The Kisan Sahkari Chini Mills Ltd., Satha, Distt. - Aligarh, U.P.</i>
6	<i>M/s The Kisan Sahkari Chini Mills Ltd., Sampurnanagar, Distt. - Lakhimpurkheri, U.P.</i>
7	<i>M/s Bisalpur Kisan Sahkari Chini Mills Ltd., Bisalpur, Distt- Pilibhit, U.P.</i>

❖ OTHER HAPPENINGS / DEVELOPMENTS:

Students of Bio- Technology discipline from Dr. Ambedkar Institute of Technology, Kanpur visited National Sugar Institute, Kanpur on 16th July 2024

to see the ongoing research activities as well as working of grain & molasses based distilleries.



2. Prof. A K Sinha, Ex Director, Rajiv Gandhi Institute of Petroleum Technology, Amethi visited National Sugar Institute, Kanpur to discuss about various academic and other related activities
3. NSI undertook a Mega Tree Plantation drive under the leadership of Director National Sugar Institute Kanpur, in the eminent presence of Prof. Vinay Kumar Pathak, Vice Chancellor, CSJMU Kanpur and Miss Divya, Divisional Forest Officer, Kanpur as an initiative of sustainability by planting 1000 trees in single plantation drive on 05th August, 2024.

4. National Sugar Institute, Kanpur organized Orientation Programme for the new students admitted in various courses of the institute during the academic session 2024-25 on 06th August, 2024. Director, Education In-charge, Controller of Examination & Hostel Wardens addressed and briefed the students about hostels rules & regulations, academic calendar and discipline to be followed.



5. National Sugar Institute, Kanpur Celebrated the 78th year of Indian Independence. During the Ceremony, traditional musical performances, and patriotic group dances were also Performed. Faculty, staff & students of the institute participated in Har Ghar Tiranga campaign, displaying the national flag.



6. National Sugar Institute, Kanpur celebrated "Abhivyakti" Freshers Party in the Director, Dr. Seema Paroha & great performances by our students. Our Director's presence, a true beacon of inspiration, set the stage for the evening's dazzling showcase of student talent! What an unforgettable way to kick-start their journey at the National Sugar Institute!

7. A nukkad natak was organised during the swachhta pakhwara as a part of awareness drive for cleanliness.



8. राष्ट्रीय शर्करा संस्थान कानपुर में दिनांक 27.08.2024 को आई.क्यू. नेत्र चिकित्सालय द्वारा निःशुल्क नेत्र जाँच एवं परामर्श शिविर का आयोजन किया गया जिसमें संस्थान के अधिकारियों, कर्मचारियों एवं छात्रों ने शिविर का लाभ उठाते हुए नेत्र परीक्षण कराये।



9. National Sugar Institute, Kanpur celebrated National Sports Day in remembrance of the legend Major Dhyan Chand on 29th August, 2024, a volleyball match was also held between faculty and students to encourage the sportsmanship and enthusiasm in students to participate in outdoor and indoor activities like Volleyball, Carrom, Badminton and Chess.

10. “Teachers Day” celebrated at National Sugar Institute, Kanpur on 5th September, 2024. At the occasion, the Vice Chairman of the Students' Scientific Committee of the Institute expressed his gratitude towards the teachers of the Institute and various activities for the teaches was also organized by the students.



11. राष्ट्रीय शर्करा संस्थान, कानपुर में दिनांक 17 सितम्बर, 2024 को यंत्र अभियांत्रिकी विभाग एवं प्रायोगिक शर्करा कारखाना में विश्वकर्मा जयंती के उपलक्ष्य पर पूजा एवम यज्ञ का आयोजन किया गया जिसमें सभी अधिकारी, कर्मचारी, छात्र व छात्राएं सम्मिलित हुए।



12. Swachta Rally was organized on 17th September, 2024 for creating the awareness for the Swachta Abhiyaan on the GT road in which faculty and students of the National Sugar Institute, Kanpur participated.



13. Commemorating “Swachta Hi Seva” campaign through distribution of Sanitation kits and PPE kits to the students and staff of Rajkiya Swachhkar



Aashram Padhyadati Vidhyala by NSI, Kanpur on 18th September, 2024.

14. National Sugar Institute Kanpur Conducted "Fire Mock Drill / training" for Emergency Preparedness on 20th September, 2024. This comprehensive drill aims to enhance the safety and readiness of security personnel in the face



of fire-related emergencies, emphasizing swift response, resilience, and protection of sacred spaces.

15. Meetings with Joint Secretary (Sugar) held on 05th Sep and 19th Sep 2024 to discuss on various issues of Institute.
16. Various meetings held with the IIT Kanpur professors regarding projects to be undertaken under Centre of Excellence on Biofuels at NSI Kanpur.
17. राष्ट्रीय शर्करा संस्थान कानपुर में हिंदी पखवाडा 14 से 30 सितंबर 2024 तक मनाया गया। इस अवधि में

संस्थान में हिंदी में कामकाज को बढ़ावा देने के उद्देश्य से अधिकारियों एवं कर्मचारियों के लिए विभिन्न प्रतियोगिता तथा सामान्य ज्ञान, हिंदी निबंध, हिंदी टंकण, टिप्पणी लेखन एवं श्रुत लेखन आदि का आयोजन किया गया। इसी उपलक्ष्य में हिंदी पखवाडा समापन दिनांक 30 सितंबर 2024 को संस्थान में मनाया गया, जिसमें अधिकारियों एवं कर्मचारियों ने बड़े उत्साह से बढ-चढ कर हिस्सा लिया।



18. During the month September, 2024 campus interview were conducted for the final year students of DIFAT, ANSI- Sugar Technology, ANSI- Sugar Engineering, SBCC, CCQC & DIPC. The various leading integrated sugar producer & distilleries have organized a placement drive during the month of September, 2024.

