Report on Kanpur Edible Oil Limited, Industrial Visit on 19th September 2025

The students and faculty members of the **Department of Oil Technology, HBTU Kanpur**, visited the **Kanpur Kanpur Edible Oil Limited**, **Rania.** The program aimed to celebrate the legacy of Refining of Edible oil while providing students with industrial exposure and insights into the current scenario of the **Kanpur Edible oil industry** and its deep association with **HBTU Kanpur** over the years.

During the event, Dr. Neeraj Awasthi (Head of the department) , Gaurav Singh and Sanjay Singh were present to renowned experts in the field of Oil technology**.**

In the Plant complete processing chain of edible oil extraction and pretreatment in Kanpur Edibles Pvt. Ltd., focusing on groundnut, mustard, and soybean, along with solvent extraction and de-oiled cake preparation. I also covers refining and ETP.

GROUNDNUT OIL PROCESSING: Groundnut processing begins with harvesting, unloading, and initial cleaning to remove dust, sticks, and oversized impurities. Destoning eliminates stones of different sizes. The cleaned groundnut is stored in silos (2.5–50 tons) and moisture is adjusted to 8–9% for smooth decortications. In decortications, hulls are removed and the mixture is separated into nuts and hulls .Graders classify peanuts based on size , while color sorters remove dark or damaged nuts. Metal detectors ensure product purity before the final peanuts are packed. Groundnut oil extraction uses half/broken peanuts from pretreatment. Seeds undergo cleaning and are fed to silos, then distributed to expellers (4–5 presses). Oil from presses is filtered in cloth filters (10 µm) and then candle filters (5 µm). Press cake is dried, cooled, crushed, and forwarded for further extraction.

MUSTARD OIL (GHANI PROCESS): Mustard seeds arrive in poly bags and are cleaned in a multi-layer cleaner separating stones ,dust ,and seeds .After storage in large silos , material moves to the Ghani extraction unit .The Ghani uses a rotating motor system (20–22 RPM) with water addition to prevent overheating. Oil flows continuously to tanks while residual cake goes for multiple expeller pressing stages. Filtered oil undergoes cloth filtration and candle filtration before packaging. Press cake is dried, cooled, crushed, and routed to solvent extraction.
SOYBEAN PRETREATMENT: Soybean seeds, unloaded in 50-kg bags, undergo a two-step cleaning system involving blowers, mesh separators, and destoners (1.5–2 mm). Seeds are graded into large and small fractions and taken to dehullers for hull removal. Cracking further breaks seeds into 2–4 pieces using grooved rollers. Delinting removes fiber, and cooking at 60–65°C softens seeds for flaking. Flakes are formed using large rollers (thickness 0.3–0.5 mm). The expander increases porosity using steam at 85–95°C. Finally, flakes are dried and cooled to 40–45°C while maintaining 9–10% moisture, then transferred to solvent extraction.

SOLVENT EXTRACTION: In the extraction plant, hexane is sprayed onto material in a 12-chamber extractor. Oil-solvent miscella passes through heaters and flashers (90–110°C) to

evaporate hexane, which is condensed and reused. Extracted oil goes for refining. The remaining cake undergoes desolventization at 110°C to remove residual hexane before being transported to the DOC plant.

DE-OILED CAKE (DOC) PREPARATION: Cake from DT (Desolventizer-Toaster)enters a cooler maintaining 40–45°C. Cleaning removes oversize particles which are hammered into uniform size. Moisture adjustment (10–15%) is done using controlled humidity before sending DOC for storage or as animal feed.

RICE BRAN OIL PROCESSING : Rice bran arriving from mills is cleaned (8mm mesh) and cooked at 48–50°Cin rotating cookers. Conditioning at 90–95°C deactivates lipase. Pelletizers convert conditioned bran into pellets, which are dried (35–40°C) and cooled for solvent extraction.

Total 60 students and three faculties were present in the industrial visit.

Detail of Expert lectures organized in the Oil Technology department

S. No.	Topic of Expert Lecture	Date & Time	Name & Affiliation of Resource Person
1.	Artificial Intelligence for Chemical Engineering Applications	21/01/2023 From 4.00 pm onwards	**Dr. Ashutosh Yadav** Assistant Prof. department of Chemical Engineering, IITJAMMU
2.	Career in Oil Technology	26/10/2023 From 4.00 pm onwards	**Mr. Ritesh Sinha** Principle Scientist at O" Loreal
3.	Commercial Food Grade Surfactants Development from Edible Oil	17/08/2024 (Saturday) From 4.00 pm onwards	**Mr. Gaurav Kumar** Deputy General Manager, Reliance India Limited, Navi Mumbai
4.	Applications of Enzyme in Household Care Industries	09/10/2024 (Wednesday) 11:30 am -01:30 pm	**Mr. Saurabh Srivastava,** Senior Manager Marketing, Novonesis (Formerly known as Novozymes)
5.	Quality control techniques applicable in edible oil industry.	18/10/2024 (Friday) From 4.00 pm onwards	**Dr. Prachi Srivastava** Quality Manager Vijay Salvex lts. Alwar (Rajasthan)- 9557719734
6.	Design facts of Equipment used in Oil and Allied Industries	19/10/2024	**Mr. Sanjay Tondon** Vice President, N.N.T. Group
7.	Career options in the civil services and scholarship program of UP Government	19/10/2024 (Saturday) From 4.00 pm onwards	**Mr. Anuj kumar** District Social Welfare Officer, PCS Batch 2020
8.	Carbon Capture and Storage	26/10/2024 (Saturday) From 4.00 pm onwards	**Mr. Upendra Diwakar** Head of Sales and Marketing/ Commercial Head Engee PET Manufacturing Company Nigeria Limited
9.	Overseas Career Opportunities in Oil Processing Industries	26/11/2024 (Tuesday) From 4.00 pm onwards	**Mr. Ajai Kumar Patel**, Plant Manager at ETG Parrogate Group, Zimbabwe
10.	Enzymes: The Green Catalysts Revolutionizing Your Laundry Detergents	05/03/2025	**Mr. Mads Mourier** Director, Global Regulatory Affairs HHC and Industrial Processing, Novonesis

11.	Global opportunities for technocrats in Oil and allied industries	18/08/2025, 4:00 pm onwards	**Mr. Kamlesh Kumar**, manager Production, IFFCO, UAE
12.	Soap: A continuing Sustainable Journey	23/08/2025, 3:00 pm onwards	**Dr. Janhavi Raut**, Principal Research Scientist, Uniliver Banglore
13.	Recent Developments in solvent extraction Technology: Global and Indian Prospective	27/10/2025, 2:30 pm onwards	**Mr. David De Schaetzen**, Technical Expert, Desmet Belgium,
14.	Role of Lubricants in National Defense Mechanism	26/11/2025, 11:00 am onwards	**Dr. Jyoti Srivastava**, Scientist G, Head , Fuel and lubricants Division, DMSRDE Kanpur