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2024: DRIVING SUSTAINABLE GROWTH IN THE ETHANOL INDUSTRY

THE WINERIES OF KARNATAKA, PROMOTING WINE CULTURE







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UPDA International Summit 2024: Driving Sustainable Growth in the Ethanol Industry

The UPDA International Summit 2024, held on July 19th at Hotel Hyatt Centric, New Delhi, marked a significant milestone in the ethanol industry. The event, organised by the Uttar Pradesh Distillers Association (UPDA), brought together key industry leaders, technocrats, policymakers, and innovators to discuss the latest advancements, challenges, and opportunities in ethanol production. The summit's theme revolved around sustainability and the future of ethanol production, highlighting the industry's critical role in India's energy security and economic growth.

Inauguration and Keynote Speeches

The summit commenced with a grand inauguration ceremony, graced by distinguished guests Dr. Hanuman Sahay Jat, Director of the Indian Institute of Maize Research (IIMR), and Mr. Reece H. Cannady, Director South Asia, U.S. Grains Council (USGC). The event was inaugurated by Mr. Rajneesh Agarwal, Secretary General of Uttar Pradesh Distillers Association (UPDA).

The inauguration saw the presence of several esteemed figures, including Mr. S.K. Shukla, President of UPDA; Mr. U.S. Bhartia, Chairman of India Glycols Limited; Mr. Abhishek Khaitan, Managing Director of Radico Khaitan Limited; Dr. Raju Chadha, Chairman of Wave Distilleries & Breweries Limited; and Mr. Pradeep Agarwal, Chairman of Superior Industries Limited. Honouring the guest and lighting the inaugural lamp were UPDA patron members, diplomats, and dignitaries on stage. The vote of thanks was delivered by Mr. Manish Agarwal, Vice President of UPDA.

Mr. Rajneesh Agarwal highlighted UPDA's achievements, including its substantial contribution to Uttar Pradesh's economy, producing 85% of the nearly 100 million cases of ethanol and engaging in extensive CSR activities. He also emphasised the association's commitment to sustainable practices



S.K. Shukla



Rajneesh Agarwal

and its collaboration with the IIMR and USGC.

Mr. Agarwal noted, "Our focus is now national and even global, as evidenced by the presence of Dr. Hanuman Sahay Jat and Mr. Reece H. Cannady along with dignitaries and experts from all over India and other countries. These achievements are the result of collective efforts and support from the industry, our collaborators, and technologists. We are thankful for the guidance and inspiration from our distinguished promoters and members. We assure our continued commitment to serving the industry with a forward-looking approach and a deep focus on state and operational matters."

"UPDA has taken distinctive initiatives with nearly 90 distilleries now having a capacity of over 350 crore litres. Of these, 48 are grain-based with a capacity of over 225 crore litres. Maize as a feedstock will be a pivotal subject in the ethanol programme for the country and the portable sector in the coming months," Mr. Agarwal concluded.

Dr. Hanuman Sahay Jat addressed key issues in Indian maize production, noting the increase in maize cultivation from 3.5 million hectares in 1950-51 to over 10 million hectares today. He stressed the need to improve maize productivity, currently at 3.5 tonnes per hectare, by utilising high-potential varieties and enhancing Kharif season productivity. Dr. Jat also highlighted the importance of increasing maize production to meet the government's target of a 20% ethanol blend by 2025-26, which requires an additional 10 million tonnes of maize over the next three years. Dr. Jat further elaborated on the crucial role of maize in animal feed, with 45% going to poultry and 13-14% to other livestock. He pointed out the necessity of developing high-starch maize varieties suitable for ethanol production and the importance of diversifying seed production beyond Andhra Pradesh and Telangana to mitigate risks from cyclones. His call to action included collaboration among stakeholders, awareness campaigns for farmers, and innovative strategies to boost seed production in states like Uttar Pradesh, Gujarat, Maharashtra, and Rajasthan.

Knowledge Sessions and Presentations

The summit featured 16 insightful presentations on the latest technologies from India and abroad, covering various aspects of ethanol production. The first knowledge session included presentations by Mr. Reece H. Cannady on creating a circular maize-based farm economy through ethanol production, and Mr. Ashok Singh of Regreen-Excel EPC India Limited on new technologies for ethanol production from different feedstocks. Mr. Prakhar A Tyagi of Natural Resource Biochem Private Limited discussed next-gen bio-derivatives and enzymatic solutions for ethanol production and wastewater management. He emphasised the importance of comprehensive solutions that address both production efficiency and environmental impact. Mr. Rajesh Mohan of Lallemand Biofuels & Distilled Spirits highlighted the role of next-generation enzymes and bio-engineered yeast in dealing with industry dynamics, while Ms. Ritu Bhalla of International Flavors & Fragrances (IFF) focussed on optimising corn processing methods to unlock its full potential for ethanol production.

Mr. Cannady, delivered an insightful presentation on the importance of creating a circular maize-based farm economy through ethanol production. He began by introducing the USGC, a private nonprofit organisation focussed on developing markets, enabling trade, and improving lives. "Our goal is to create a circular maize-based farm economy through ethanol production," he stated.

Mr. Cannady highlighted the U.S. Grains Council's newest office in India,



Lamp lighting ceremony

aiming to develop a stable and sustainable market. He proudly announced the signing of a Memorandum of Understanding (MoU) with UPDA on April 23, 2024, to develop and market high-value corn ethanol co-products such as DDGS, corn oil, and fibers. "This MoU is designed to maximise profitability and yields of corn ethanol plants and promote carbon-efficient corn ethanol products," he explained.

He outlined several initiatives, including quality control visits to ethanol plants, workshops on ethanol production, and collaboration with state governments and industry to support maize-based ethanol production. "Our efforts with UPDA include visiting ethanol plants like India Glycol Limited in Gorakhpur to discuss quality control, hosting experts to run ethanol production workshops, and engaging with state governments to promote maize cultivation," Mr. Cannady detailed.

"Ethanol is crucial for India's E20 target by 2025-26. Currently, most ethanol comes from sugarcane with maize contributing less than 1%. We need to increase maize production by 10 million tonness to meet the 350 crore litres ethanol target," he stressed and concluded by discussing the potential of creating a circular economy where farmers, ethanol plants, and the government all benefit from each other.

Ms. Bhalla explored the differences in corn composition compared to other feedstocks, such as rice, highlighting the challenges and opportunities these differences present. She underlined the need for tailored approaches to processing Indian corn varieties, which often contain bound starch that is not easily accessible using standard ethanol processes. IFF's research demonstrated the potential for enzymatic treatments to release this bound starch, thereby increasing ethanol yields.

Mr. Rajesh Mohan of Lallemand Biofuels & Distilled Spirits elaborated on the challenges faced by the industry due to fluctuating raw material prices changing regulatory landscapes. and He presented innovative solutions involving next-generation enzymes and bio-engineered yeast that can enhance the efficiency of ethanol production while adapting to these dynamic conditions. His presentation showed the importance technological advancements of in maintaining the competitiveness and sustainability of the ethanol industry.

The second knowledge session featured Dr. KVTS Pawan Kumar from The Catalysts Group on maize variety identification for ethanol fermentation, and Mr. Sukhraj Soni of Spray Engineering Devices Limited on sustainable approaches using thermal heat recycling in ethanol production. Other notable presentations included Mr. Sanjiv Sharma of Bayer CropScience Limited on the role of seed and the entire value chain in ethanol production, and Mr. Aakash Gundawar of SSP Private Limited on integrating technology for enhancing sustainability and product recovery in distillery wastewater management.

Mr. Bharat B Mehta of Reliance Industries Ltd. brough to light significant developments in the use of PET (Polyethylene Terephthalate) in the packaging industry, particularly in the liquor sector. He discussed the introduction of Relpet, a 100% circular food-grade product made from recycled PET, and emphasised the advantages of PET, including reduced water usage, minimised breakages, and overall cost-effectiveness.

Mr. Mehta provided detailed insights into the environmental benefits of PET, noting its lower carbon footprint compared to traditional packaging materials like glass. He also highlighted the economic advantages, including reduced transportation costs due to PET's lighter weight and lower breakage rates, which contribute to cost savings for manufacturers and distributors. Additionally, he highlighted the role of PET in supporting the circular economy, as it is highly recyclable and can be reused to produce new packaging materials, thereby reducing waste and conserving resources.

Panel Discussions and Interactive Sessions

The summit also included interactive panel discussions with Q&A sessions, fostering knowledge sharing and networking among participants. These discussions covered a range of topics, including sustainability, future trends in ethanol production, and innovative strategies to boost maize production for ethanol. Panelists pointed out the importance of collaboration among stakeholders, awareness campaigns for farmers, and the development of highethanol maize varieties.

One of the key panel discussions focussed on the government's ethanol blending targets and the necessary steps to achieve them. Experts discussed the importance of policy support, investment in research and development, and the role of private sector partnerships in driving the industry forward. The discussions also highlighted the need for continuous innovation and adaptation to changing market dynamics.

The panelists included Dr. Vijay Adapa of Novozymes South Asia Pvt. Ltd., who spoke on reimagining maize with bio-solutions of tomorrow, and Mr. Ajay Popat of Ion Exchange (India) Ltd., who presented advanced technology for sustainable distillery waste management. Mr. Nikhil Gharat of Rochem Separation Systems (I) Pvt. Ltd. discussed green solutions for distillery wastewater management, and Mr. G. Srinath of Avant Grade Systems & Controls (P) LTD emphasised the importance of biofuels in achieving net zero emissions and selfsustainability.

Dr. Vijay Adapa of Novozymes South Asia Pvt. Ltd. called attention to the role of biotechnology in transforming maize into a more efficient and sustainable feedstock for ethanol production. He discussed the potential of novel enzymes and bio-solutions that can enhance the conversion of maize starch into ethanol, reduce production costs, and curtail environmental impact. His insights highlighted the critical role of research and innovation in driving the future of ethanol production.

Mr. Ajay Popat of Ion Exchange (India) Ltd. presented a comprehensive overview of advanced technologies for sustainable distillery waste management. He shared a case study demonstrating the successful implementation of these technologies in a major distillery, showcasing significant reductions in



Exhibition booths

wastewater generation and improvements in overall environmental performance. His presentation underscored the importance of adopting cutting-edge technologies to address the environmental challenges associated with ethanol production.

Mr. Nikhil Gharat of Rochem Separation Systems (I) Pvt. Ltd. discussed green solutions for distillery wastewater management, focussing on the integration of membrane separation technologies. He highlighted the benefits of these technologies in achieving zero liquid discharge (ZLD), reducing water consumption, and minimising the environmental footprint of distilleries. His presentation laid emphasis on the need for sustainable practices and innovative technologies in the ethanol industry.

Mr. G. Srinath of Avant Grade Systems & Controls (P) LTD elaborated on the importance of biofuels in achieving net zero emissions and self-sustainability. He introduced key biofuels, including ethanol, compressed biogas (CBG), and green methanol, and discussed their potential to reduce greenhouse gas emissions, enhance energy security, and support economic growth. His insights showcased the critical role of biofuels in the transition to a sustainable and low-carbon energy future.

Other notable panelists included Mr. Binu Panickar Raj of Process Equipment & Systems Pvt. Ltd., who introduced the Raj Zero Liquid Discharge system as an innovative solution to treat distillery effluent, and Mr. Ajay Popat, who presented a case study on advanced technology for sustainable distillery waste management. Mr. Sanjiv Sharma discussed the entire value chain's role in ethanol production, and Mr. Bharat B Mehta highlighted responsible packaging initiatives by Reliance Industries Ltd.

Exhibition and Innovations

Over 25 exhibitors showcased advanced innovations at the summit, providing participants with а comprehensive view of the latest advancements in ethanol production technology. The exhibition featured a diverse array of products and services, from bio-derivatives and enzymatic solutions to advanced distillery waste management technologies.



Attendees at the conference

The exhibitors demonstrated how technology could enhance the efficiency and sustainability of ethanol production. Innovations in biofuel production, such as the use of high-starch maize varieties and advanced fermentation techniques, were prominently displayed. Participants had the opportunity to engage with industry experts, explore new technologies, and discuss potential collaborations.

The exhibition also featured innovative solutions for addressing environmental challenges associated with ethanol production. Companies showcased advanced wastewater treatment technologies, renewable energy systems, and sustainable packaging solutions, highlighting the industry's commitment environmental stewardship to and sustainability. The interactive nature of the exhibition allowed participants to gain hands-on experience with the latest technologies and explore potential applications for their operations.

The Role of PET in Sustainable Packaging

One of the notable developments highlighted at the summit was the use of PET (Polyethylene Terephthalate) in the packaging industry, particularly in the liquor sector. Mr. Bharat B Mehta of Reliance Industries Ltd. discussed the introduction of Relpet, a 100% circular food-grade product made from recycled PET. He pointed out the advantages of PET, including reduced water usage, minimised breakages, and overall costeffectiveness.

Mr. Mehta highlighted the growing adoption of PET packaging in the Indian liquor market, with brands like Officer's Choice making significant shifts from glass to PET. He also discussed Reliance's efforts in promoting recycling and sustainability through collaborations with retailers like Coca-Cola and the use of recycled PET (rPET) in various products.

Reliance's initiatives include the establishment of a new plant in Barabanki to further the production of Relpet. This move aligns with Tamil Nadu's adoption of PET for affordable 90 ml liquor packs following a tragic incident. The shift to PET aims to ensure safety and environmental benefits, with PET's advantages including reduced water usage for bottle washing and decreased breakages.

Mr. Mehta emphasised that PET, being 15 times lighter than glass, is a safer and more sustainable packaging material. He highlighted that 85-90% of PET bottles in India are recycled, making it one of the most recycled materials globally. He also noted that innovations like biodegradable components for multilayer brick cartons (Tetrapacks) are being explored to enhance recyclability.

The economic and environmental benefits of PET were further showcased by Mr. Mehta, who detailed the cost savings associated with reduced transportation expenses and lower breakage rates. He also explained the role of PET in supporting the circular economy, as it can be recycled multiple times to produce new packaging materials, thereby reducing waste and conserving resources. The adoption of PET in the liquor industry serves as a model for other sectors looking to enhance sustainability and reduce their environmental footprint.

Biofuels and the Circular Economy

The summit concluded with a session on the importance of biofuels in achieving net zero emissions and self-sustainability. Mr. G. Srinath of Avant Grade Systems & Controls (P) LTD introduced key biofuels, including ethanol, compressed biogas (CBG), and green methanol. He spoke on the circular economy of biofuels, where efficient production and use can reduce emissions, enhance energy security, and support economic growth.

Mr. Srinath highlighted India's biofuel potential, noting the government's goal of 20% ethanol blending by 2025 and the significant contributions from surplus biomass. He also discussed the SATAT scheme, which supports biogas plant development, and the various pathways for producing green methanol, which aligns with global biofuel initiatives.

Srinath elaborated on the benefits of each biofuel: ethanol derived from surplus biomass, CBG produced from various feedstocks, and green methanol offering significant potential for the marine industry. He mentioned the need for innovative technologies and collaborative efforts to achieve these goals.

Mr. Srinath noted that the SATAT scheme's role is important in supporting biogas plant development, ensuring procurement by oil marketing companies. He highlighted the government's efforts to enhance the productivity of maize during the Kharif season and expand the area under Rabi and spring maize.

Srinath also detailed the environmental benefits of biofuels, including significant reductions in greenhouse gas emissions and improvements in air quality. He explained the role of biofuels in supporting India's energy transition and achieving its climate goals.

The session concluded with a call to action for stakeholders to invest in research and development, adopt innovative technologies, and collaborate to build a sustainable and resilient biofuel industry.

- Pritisha Borthakur