

## A Seminar on Packaging Solutions jointly organized by IDA HQ and Messe Muenchen India

IDA HQ along with its Benefactor Member of IDA, Messe Muenchen India had organized a seminar on 12<sup>th</sup> December 2019 at Pragati Maidan, New Delhi.

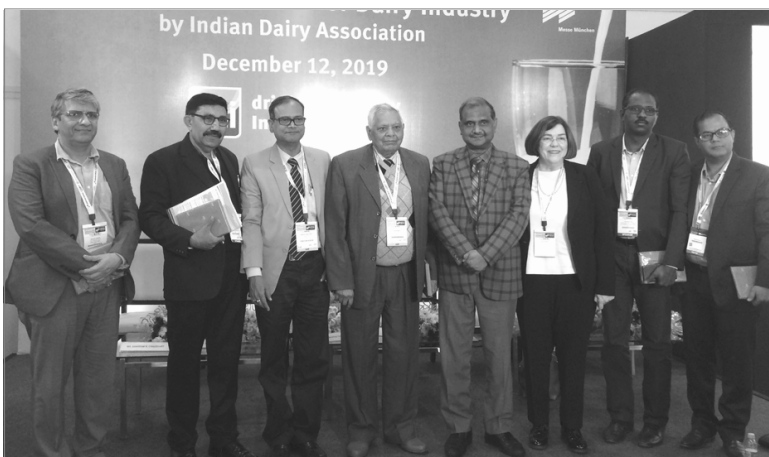
The seminar was scheduled during the Drink Technology India (DTI), organized by Messe Muenchen

India, dedicated to the dairy, liquid food and beverage industries at Pragati Maidan, New Delhi between 12-14 December, 2019. It was a business opportunities for the dairy, liquid food and beverage industries along with a focus on new technological innovations through its exhibition.

The theme of the seminar was “Packaging Solutions for the Dairy Industry.” The seminar was inaugurated by Dr. G.S. Rajorhia, President-IDA. While, inaugurating the seminar, Dr. Rajorhia said that single-use plastic container with less than 50 microns should not be used as food articles. There are many issues related to cost of packaging and its self life which will be deliberated by our eminent speakers.

The session was chaired by Dr. R.R.B. Singh, Director and Vice Chancellor, National Dairy Research Institute, Karnal. The eminent speakers were Mr. Sangram R Chaudhary, MD, Mother Dairy Fruits and Vegetables Pvt. Ltd.; Mr. Kuldeep Sharma, Suruchi Consultants; Mr. Madhav Chakraborty, Joint Director and Regional Head, IIP, Delhi; Dr. Narendra P. Raju, Scientist, Dairy Technology, NDRI, Karnal; Ms. Michele Jamezoc, MD, Michele Janezic Agency Pvt Ltd.; and Mr. Pranay Kumar, Chief Environment Officer, Vasudhaecofriends Projects (P) Ltd.

While Shri Sangram R Chaudhary advocated for nature-based packaging. He started his talk with Edible



food packaging which is basically food wrapped in food. It takes away the plastic and paper waste that is created from packaging foods and instead wraps it in something that's edible. The idea is that once you are done eating the food inside the package, you finish off the package too. He also talked about

intelligence packaging using QR code to get the feedback directly from consumers. Mr. Kuldeep Sharma reminded the participants about the type of packaging adopted since early 1950s and the current available options for the food and dairy sector. Raising the importance of business of packaging, he said dairy industry needs at the most followed by confectionary section and others. He stressed that packaging should carry interactive and health-centric message so as to attract the consumer at the first sight.

Mr. Madhav Chakraborty spoke about the different packaging material available for milk and milk based products and the challenges being faced by the industry. He advocated for enzyme based and catalyst based biodegradation, Polypropylene; Polyethylene Terephthalate; HIPS is widely used in the food packaging industry; composting and recyclability.

While concluding his talk, Dr. Narendra P. Raju said that plastics have been playing a major role in dairy industry. However, alternative solutions to replace single-use flexible plastic are yet to be done. He also said that we need to develop novel intelligent packaging systems to suit Indian dairy products.

Ms. Michele Jamezoc talked about FFS technology supporting Indian dairy market. This technology supports from farm to fork. She said that with the use of FFS technology, we can reduce the supply chain cost; packaging cost can be reduced up to -60% besides

many additional advantages. Mr. Pranay Kumar spoke on Biodegradable plastics and solution for plastic waste.

According to business.mapsofindia.com, the food processing industry in India has a total turnover of about \$65 billion, which includes value-added products of about

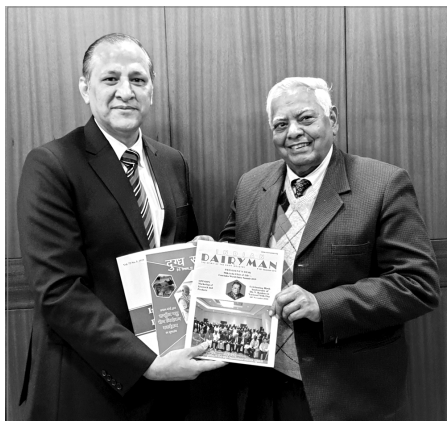
\$20.6 billion. Within the food processing industry, the beverage industry in India itself accounts for \$230 million.

DTI exhibited all aspects of the beverage, dairy and liquid food industry – from filling plants, innovative beverage additives, latest beer variations and various dairy products to innovative packaging concepts.

## Director, CSIR-Indian Institute of Toxicology Research visited IDA House

PROFESSOR ALOK DHAWAN, Director, CSIR-Indian Institute of Toxicology Research (IITR), Lucknow visited IDA House to meet President-IDA Dr. G.S. Rajorhia on 20 December, 2019. Dr. Rajorhia welcomed him and presented a latest released journals of the Association – *Indian Dairyman*, *IJDS* and *Dugdh Sarita*. Prof. Dhawan complimented Dr. Rajorhia for the journals especially the hindi journal “*Dugdh Sarita*”. He said that IDA must continue to publish *Hindi* journal since most of the dairy farmers are well-versed with *Hindi* only.

At IITR, Prof. Dhawan has established nanomaterial toxicology and published on genotoxicity of nanoparticles [carbon C60 fullerenes] in human lymphocytes. They have developed a novel method to detect the uptake of nanoparticles in bacteria for assessing ecotoxicity of engineered nanomaterials. He was also instrumental in developing a Guidance Document for Safe Handling of Nanomaterials in the Laboratory.



CSIR-IITR, Lucknow constituent laboratory of Council of Scientific & Industrial Research, was established in 1965. This multidisciplinary research institute works towards Safety to Environment and Health and Service to Industry addresses problems critical to human health and environment. CSIR have established a mission project on Food and Consumer Safety Solutions under Prof. Dhawan as Mission Director where the scientists of various

laboratories have developed multi-sensor system for detection of adulteration in milk, smart packaging to indicate the spoilage of milk during storage, detection of adulteration in ghee and edible oils and rancidity indicator strip to edible oils. They have developed methods for the detection of food toxins and contaminants. Many of these methods are awaiting patents. Prof. Dhawan has also been invited to deliver a talk on safety solutions during the forthcoming 48<sup>th</sup> Dairy Industry Conference in Jaipur.

## 9<sup>th</sup> International Conference on Fermented Foods organized at SMC College of Dairy Science, Anand

SWEDISH SOUTH ASIAN NETWORK ON FERMENTED FOODS (SASNET-FF) in association with SMC College of Dairy Science, Anand Agricultural University; Indian Dairy Association, (Gujarat State Chapter); Lund University; Sweden; Copenhagen University, Denmark, Probiotic Association of India; Gut Microbiota and Probiotic Science Foundation (India); Dr. Verghese Kurien Centre of Excellence, IRMA, India organized the 9<sup>th</sup> International Conference on “Fermented Foods, Health Status and Social Well-being” during 13-14 December, 2019. The

theme of the conference was “Probiotic Food Products and Gut Microbiota”.

The conference focused on research work related to these aspects and to help in establishing the role of probiotic and fermented foods in maintaining health status and social well-being. More than 400 delegates including academicians, scientists, researchers, students, dairy and food professionals and nutritionists from all over the country and abroad attended the seminar. The seminar had speakers from Sweden, Egypt, Ireland, Hongkong,

### ICE CREAM & FROZEN DESSERT MANUFACTURERS FACE LOSSES AS SMP PRICES DOUBLE

Ice cream and frozen dessert manufacturers across the country, who are dependent on skimmed milk powder (SMP) as a key ingredient, are hit hard and face huge losses as the commodity has gone out of stock in the market resulting in steep hike in its price. According to Mr. Rajesh Gandhi, President, Indian Ice Cream Manufacturers' Association, and MD, Vadilal Industries Ltd, the price of SMP, which stood at ₹160-180 kg last year, is currently available at ₹325-350 per kg. It is feared that it may reach ₹400-450 per kg soon.

### COCOATRAIT LAUNCHES RANGE OF CHOCOLATES PACKED USING COCOA HUSK PAPER



Cocotrait has now launched its range of chocolates packed using cocoa husk paper which is up-cycled, plastic & paper free, recyclable, biodegradable and compostable.

Launched in Amsterdam earlier this year, the company has paved the way to be benchmarked in sustainability globally. "We assume people product, environment & process sustainability as priority & promote flavour delivery through the use of minimal & natural ingredients," said Mr. L Nitin Chordia, Director, Cocotrait. This is our contribution towards reducing landfill. We have reduced every possible millimeter of the packaging used, helping us optimise your transport volume and making it more sustainable, reducing carbon footprint and occupying less shelf space at retail stores.



Indonesia, Japan, Denmark and Netherlands.

Prof. Baboo Nair, Chairman, SASNET-FF and Professor Emeritus, Lund University, Sweden welcomed the dignitaries, technocrats and participants from around the world to the international conference & quoted that the seminar provides platform for networking of home-grown scientists of 9 different countries. While briefing on various activities of SASNET-FF network, he mentioned that the decade has witnessed revolutionary change in food consumption habits and the role of probiotics and functional fermented foods is inseparable for social well-being.

The Guest of Honour, Dr. K.B. Kathiria, Principal, College of FPT & BE, AAU, Anand stated that India being an agrarian country, it is recommended to improvise on food & nutrition security in years to come. On this occasion Dr. D. C. Joshi, Vice Chancellor, Agricultural University, Kota coined the fact that India's fermented foods have regional specificity and they offer broad range of health benefits.

The Guest of Honour, Prof. Dr. Rickard Oste, Member of Royal Swedish Academy of Agriculture and Forestry, Emeritus Prof. Lund University recollected the efforts of Dr. Verghese Kurien, the 'Father of White Revolution' as futuristic and extremely inspiring. He emphasised on the growing role of non-dairy milks in day to day life at global level and suggested non-dairy fermented foods are substrates to new technology development.

The Chief Guest Dr. Rameshwar Singh, Vice Chancellor, Bihar Animal Science University, Patna referred the conference as 'galaxy of food scientists' in Anand city. He stated that the research interests in probiotics, synbiotics has grown several fold since their introduction and the spectrum of benefits like combating depression; for treatment of migraine, heart diseases, ageing, obesity and at large addressing issues of malnutrition.

In his Presidential Address, Dr. R.V. Vyas, Hon'ble Vice Chancellor, AAU, Anand mentioned the mythological implications of fermented foods in India which is evident from ancient Rigveda texts. He remarked that AAU has been working on fermented foods since 1980's and was first to carryout whole genome sequencing of *Lactobaillus helveticus*. He acknowledged the facilities available at AAU as Food Business Incubator, Bakery Shala, Anubhav Dairy & Vidya Dairy have a crucial role in new product development as first hand

technology development and transfer.

Dr. J.B. Prajapati, Coordinator, SASNET-FF & Dean, Faculty of Dairy Science, AAU, Anand and Mr. Keyur Shah, Hildur Functional Foods Private Ltd., were felicitated on this occasion for their outstanding contributions in the area of fermented foods. A souvenir related to research in fermented foods was released on this occasion.

The two day seminar had seven technical sessions including one industry forum. Total 24 lead papers, 7 industry presentations and 9 young scientists presentation were made on various issues related to fermented foods, probiotics and health status. The conference also provided a platform to young scientists and scholars to present their research work through poster presentations. Total 58 posters were presented in 3 sessions. A fermented food and beverage recipe development contest and exhibition was organized, wherein total 44 products were presented.

## TN Chapter of IDA organized National Seminar

A GRAND EVENT focusing on today's need of innovative strategies in dairy industry by Indian Dairy Association, Tamil Nadu Chapter in association with Karunya Institute of Technology and Sciences (KITS), Coimbatore organized two day seminar on "Promotion of Dairy Entrepreneurship through Innovative Strategies" during 18-19, October, 2019 at KITS, Coimbatore.

Shri C.P. Charles, Chairman, IDA (South Zone) presided over the function. Shri I.A.M. Justin, Vice Chairman, Tamil Nadu Chapter of IDA gave the welcome address. Dr. E.J. James, Pro Vice Chancellor, Karunya Institute of Technology and Sciences, inaugurated the Seminar and Exhibition stalls. Dr. C. Naresh Kumar, Chairman, IDA (Tamil Nadu Chapter) and Dr. Jacob K. Annamalai, Dean, KITS, Coimbatore delivered felicitation addresses. There after technical sessions held on the following topics viz., Innovation and Automation for the Dairy Producers; Dairy Business for the younger generation; Sustainable Dairy Development; Challenges and Opportunities in the Dairy Business; Making the Indian Dairy Business a profitable venture; Developing technical skills in Dairying; Adopting new technology and problem solving solutions; and Adhering to National Food safety guidelines in dairying. Shri K.S. Kanna, Organizing Secretary of the National Seminar delivered vote of thanks.



## 48<sup>TH</sup> DAIRY INDUSTRY CONFERENCE 20-22 February, 2020 Birla Auditorium, Jaipur (Rajasthan)

IDA (North Zone), in association with Rajasthan State Chapter (RSC) of IDA, is organizing the 48<sup>th</sup> DIC at Birla Auditorium, Statue Circle, Jaipur, during 20-22 February, 2020. The theme of the conference is "Dairying for Health and Wealth".

For more information, contact Secretary General, 48th Dairy Industry Conference, C/o 607 Mahima Trinity, Swaj Farm New Sanganer Road, Jaipur- 302019  
Email: jaipur48dic@yahoo.com  
Website: www.48dic.org

## IDF WORLD DAIRY SUMMIT 2020

28 September - 1 October 2020  
Cape Town, South Africa

The South African Committee of IDF commits to hosting a most successful and memorable summit in Cape Town in the spring of 2020. South Africa, geographically situated at the southernmost tip of Africa, is one of the few countries in Africa with well-developed agriculture and agro-processing infrastructure able to meet domestic demand and to export to the fast growing African market as well as to other continents.

For further information, please visit <https://idfwds2020.com>

## DAIRY INDUSTRY EXPO 2020 16-18 October 2020 Pune, Maharashtra

Dairy Industry Expo along with Conference will provide an ideal opportunity to meet fellow dairy professionals from around the country displaying complete value chain from animal genetics to farm management and milk and milk-product processing.

Visit <http://dairyindustryexpo.com>

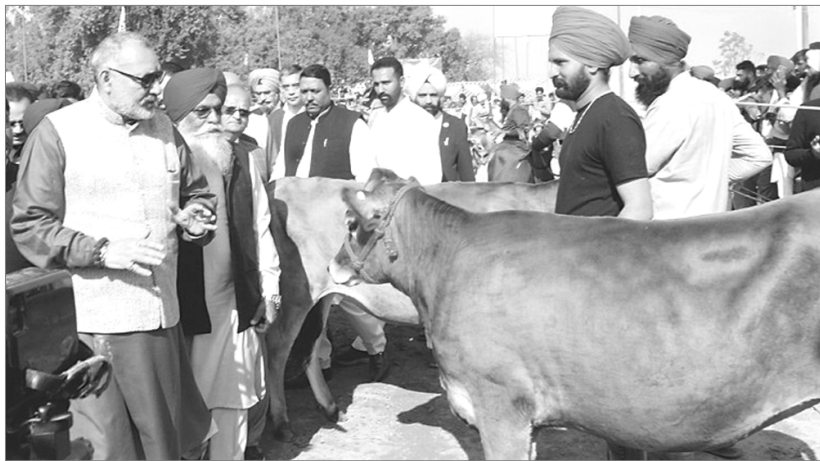
## IDA Gujarat State Chapter Election Results Declared

Election of the IDA Gujarat State Chapter was declared on 4 December, 2019. Election results were declared by Returning Officer, Dr. P.S. Prajapati and his team. The results declared are: **Chairman:** Dr. J.B. Prajapati; **Vice-Chairman:** Shri Meenesh Shah; **Secretary:** Dr. H.K. Desai; **Treasurer:** Shri Jaydev Patel; **Members (RE):** Dr. Dharmendra A. Shukla; **Member (MP):** Shri Jayesh Desai; **Member (PP):** Shri Nitesh Mathur and **Member (DI):** Shri Rajkumar Malik.

## NATIONAL news

### Sexed semen for dairy farmers at ₹100 per vial by 2020, says Giriraj Singh

WHILE ADDRESSING the inaugural function of 14<sup>th</sup> Progressive Dairy Farmers Association (PDFA) and International Dairy and Agri Expo 2019 at Jagraon in Ludhiana, Hon'ble Union Animal Husbandry, Dairying and Fisheries Minister, Shri Giriraj Singh said that the Union government is



committed to provide sexed semen to dairy farmers to improve the quality of milch cattle, especially buffaloes and cows. This technology would help dairy farmers ensure production of only female calves, which would eventually put an end to the practice of abandoning the male calves that later posing a major threat to human life in the form of the stray cattle. By 2020, sexed semen would be provided to the farmers for only ₹100 per vial, which currently is available for ₹600 per vial (with subsidy), whereas its actual cost is ₹ 1,200 per vial.

He further informed that under this project, 600 villages have been chosen across country, where 200

cattle from each village would be provided free breeding with quality sexed semen. The government is also working to bring improvements in Embryo Transfer Technology (ETT) so as to ensure production of quality livestock. ETT could help in speeding up breed improvement, which

would fetch better prices to the dairy farmers due to higher milk yield.

Shri Singh also said that the Centre has decided not to allow import of milk from foreign countries. To safeguard the interests of farmers, the government would also terminate the contracts it had for this purpose under the World Trade Organization (WTO). The new pro-farmer policies are being formulated, after which a dairy farmer owning two cattle would have an annual income of ₹ 3 lakh. He also announced that more than ₹ 13,500 crore would be spent by the union government to ensure that the milch cattle do not suffer from any diseases.

### Godrej Agrovet expecting 15% growth this fiscal

DIVERSIFIED AGRI BUSINESS company Godrej Agrovet Ltd (GAVL) is expecting 14-15 per cent growth in top-line, this fiscal, primarily backed by value growth in its animal feed business. The company's top-line grew by around 12 per cent to close to ₹ 5,900 crore in the financial year 2019.

According to Mr. Balam Singh Yadav, Managing Director, Godrej Agrovet, the growth in turnover would also be supported by better performance

in some of its verticals including agro chemicals and dairy businesses.

Godrej Agrovet has several business verticals including animal feed (which accounts for nearly 50 per cent of its total business), crop protection, oil palm, dairy, poultry and processed foods. The growth in business and profitability would be despite the fact that the country has been facing several challenges in the agriculture space due to drought and flood in several regions and the tough economic conditions.

The company is expecting growth in export. Animal feed is dependent on commodity prices and when input costs increase then the price of feed increases leading to a growth in top-line. However, the bottom-line may not keep pace with the increase in top-line thereby exerting a pressure on the company's margins. The demand for animal feed has been "good" for the first eight months of this fiscal. Godrej Agrovet sees lot of potential in exporting agro-chemicals as India was gradually turning out to be more competitive than the Chinese counterpart. The company had taken over Astec Lifesciences about four years back to foray into exports.

## India Food Safety Summit 2019

A TWO-DAY India Food Safety Summit 2019 was organized by Synnex Group during 5-6 December, 2019 at Hotel Vivanta by Taj, Dwarka, New Delhi.

The summit brought the entire ecosystem of the Food Safety and Food Processing industry of F&B manufacturers, regulators, analytical services and testing companies, consultants etc. at one global platform to network, gain insight, share knowledge and discuss the best practices in food quality and safety systems with FSSAI's initiatives.

Amongst the industry leaders Mother Dairy Fruit and Vegetable Pvt. Ltd.; Dudhsagar Dairy; Hatsun Agro; ITC Foods Ltd.; Nestle India Pvt. Ltd.; Britannia Industry Ltd., Ananda Dairy; Patanjali; Heritage Foods Ltd., Parag Milk Foods Ltd.; Haldiram Snacks Pvt. Ltd., Sunfresh Agro Industry Pvt. Ltd.; Cargill India, etc. participated in the event.

During the two-day Summit, President-IDA Dr. G.S. Rajorhia was requested to Chair a session titled "CEO Panel – Dairy Safety and Quality – Where are we?". Mr. R.S. Dixit, Chairman, Ananda Dairy; Mr. N. J. Baxi, Managing Director, Dugdhsagar Dairy and Mr. J.S. Murthy, Head, Dairy Division, Heritage Foods Ltd. shared their views. A total of 8 Sessions were held during the two-day event. Dr. Rajorhia talked about the outcome of the National milk survey conducted by the FSSAI. He expressed that only 17% raw milk samples were found adulterated against the publicity given to milk quality by



press and media. He also informed that an advisory was issued after the survey that efforts should be made to standardize pasteurized milk to avoid any addition of water in the milk at plant level. Under National Dairy Plan - II (NDP-II), it has been proposed to use the funds towards extending the capacity of cattle feed

plants and developing infrastructure for the dairy sector. He also talked about the challenges being faced by the dairy industry in milk production as there is an issue of productivity per animal and increasing input cost of milk production.

During the concluding session, India Food Safety Excellence Awards 2019 were handed over by the Chairperson, FSSAI, Mrs. Rita Teotia. While addressing the award distribution ceremony, Mrs. Rita Teotia said that a perception is held that foods are not healthy in India and this is the challenge before us.

Under the category of Technology Innovator of the Year 2019, Heritage Foods Ltd. received the award. While Dairy Champion of Year 2019 was bestowed to Madhur Dairy Gandhinagar, the Food Company of the Year 2019 was given to Britannia Industries Ltd.

The CEO Dairy Company Award of the Year 2019 was received by Shri Sangram R. Chaudhary, Managing Director, Mother Dairy Fruit and Vegetable Pvt. Ltd. The Dairy Company of the Year 2019 was also received by Mother Dairy Fruit and Vegetable Pvt. Ltd.

India's food and grocery market is expected to

touch USD 482 billion by 2020. Indian food and grocery market is the 6th largest in the world. Indian food processing industry accounts for 32% of the country's total food market, it is ranked 5<sup>th</sup> in terms of production, consumption, export and expected growth.

Indian food processing industry contributes around 14% of manufacturing Gross Domestic Product (GDP), 13% of India's exports and 6% of total industrial

investment. The adoption of food safety and quality assurance mechanisms, such as Total Quality Management (TQM), including ISO 9000, ISO 22000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) by food processing industry will be beneficial not only for food sector but for the Indian economy.

## One Day Seminar at Sanjay Gandhi Institute of Dairy Technology, Patna

A ONE DAY SEMINAR was organized at Sanjay Gandhi Institute of Dairy Technology (SGIDT), Patna on 30<sup>th</sup> November, 2019.

The theme of the Seminar was "Supplementation of Probiotics through fermented Dairy Products". It was attended by the students of the institute and Bihar Veterinary College. The Seminar was followed by an open house discussion in which the students and the faculty members of Bihar Animal Sciences University debated on the emerging issues of importance to human

health viz-a-viz the fermented dairy products.

Dr. Prakash Halami from CFTRI was the invited speaker. While inaugurating the Seminar the Vice-Chancellor, Dr. Rameshwar Singh raised some key issues relating to the traditional dairy products and their future scope in international market with proper processing and packaging. Dr. B.S. Beniwal, Dean, SGIDT apprised the students about the therapeutic values of such dairy products. Dr. Sonia Kumari who coordinated the event also spoke on the recent advances in the field of probiotics.



## Hassan Milk Union chooses GEA aseptic bottling technology

THE ASEPTIC PRODUCTION of drinking milk and flavored milk products is a very lucrative business in India. Aseptically bottled products provide a stable shelf life, even at the elevated ambient temperatures reached in the central Indian sub-continent. In early 2019, the Hassan Milk Union, which is operated by the Karnataka Milk Federation (KMF), recognized this opportunity and decided to make it a reality by enlisting the help of technology partner GEA.

Milk and flavored milk products are nutritious, healthy and delicious, so it is hardly surprising that consumer demand throughout India is on the rise. People particularly enjoy the fresh taste of these products – a taste that can easily be tainted when products are exposed to heat. Aseptic bottling, however, avoids this issue by ensuring that the product is filled into sterile bottles and sealed under sterile conditions. This process prevents bacteria from entering the product, thereby ensuring that it is shelf

stable, and for many months, even if transported and stored outside of a cold chain. In India, cold chain distribution is quite challenging, therefore any product that can deliver on freshness, even during hot summer months, is sure to appeal to a broad target audience.

The Hassan Milk Union, well known for the Nandini® dairy products, awarded GEA in 2019 to design and implement a complete aseptic bottling line for flavored milk products and products containing fruit and fibers. The new aseptic bottling line at Hassan will be commissioned in Q1 2020 and will be capable of bottling 30,000 x 200 mm bottle an hour.

Since the bottles are blown on site, Hassan Dairy has maximum flexibility when it comes to the design of their PET bottles while minimizing any contamination in what is, essentially otherwise an open factory. The bottles are sterilized using 6th-generation per acetic acid

technology (PAA) in which the sterilant is sprayed into each bottle under high pressure providing both a chemical and mechanical sterilizing action to ensure each bottle is scrupulously cleaned before it enters the filling station.

GEA offers aseptic blowing & filling technologies for PET and HDPE bottles, based on either per acetic acid (PAA) or hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) sterilization. These systems are configured to ensure optimal container sterility, filling and capping, without affecting product quality. By keeping all the critical points of the process under fine control GEA's aseptic technologies gives their customers' confidence that their filling lines will process safe, stable, fresh-tasting dairy-based liquid nutritional formula products that are free from microbiological contamination.

For more information, interested members/reader may contact at [shrikant.agarkar@gea.com](mailto:shrikant.agarkar@gea.com)

## INTERNATIONAL news

### Greater agricultural innovation needed to meet SDGs: FAO Chief

GREATER AGRICULTURAL INNOVATION is required to tackle the risks of climate change and reach the Sustainable Development Goals (SDGs). This was stated by Mr. Qu Dongyu, Director General, Food and Agriculture Organisation (FAO), at the opening of SDG-2 - Linking Technological Innovation and Climate Change Actions for a World Free of Hunger, Malnutrition and Poverty, an event on the sidelines of COP25, which commenced recently.

“There is a need for innovation, not only in science, but also in policies, in how we do business and the way we think,” he added.

The event was co-organised by FAO and the two other Rome-based UN (United Nations) agencies, the International Fund of Agricultural Development (IFAD) and the World Food Programme (WFP).

Mr. Dongyu highlighted the important role of farmers who are ultimately those who apply agricultural innovation, and therefore, should not be left behind when it comes to technology and innovation.



FAO opined that when applied to the food and agricultural sectors, innovation, technology and digitalisation can strengthen climate change actions, increase food production and support everyone involved in the food value chain.

Innovative solutions - several of which FAO promotes through its work - are already making a difference. These include precision and digital agriculture, enhanced early warning systems, remote sensing technologies, and climate-neutral approaches.

For example, precision agriculture can make water use more efficient and improve the management of soil nutrients. Precision irrigation can reduce water use between eight and 20 per cent.

“Empowering farmers and strengthening coordination, especially at the country level, are crucial to responding to climate change challenges and reaching all SDGs, and it is time to scale up and speed up our efforts,” stated the FAO Chief.