

Volume 1 • Issue 2 • October-November 2019

IndiFoodBev

Processing & Packaging

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FSSAI on health & food safety



**Second Nature's cold
extracted juices 22**



**Cocoa bean
to chocolate
bar 12**



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in continuous
innovation 18**



**Frozen food
market in
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Trends in the food ingredients market

Demand for multi-functional & creative ingredients

Dear readers and advertisers,

We are pleased to bring you the second issue of *IndiFoodBev* magazine. This bi-monthly issue coincides with the Food ingredients and Health ingredients (Fi India & Hi) and Propak India 2019 to be held from 22 to 24 at Mumbai, India.

Launched in 2006, FiHi is a B2B show for the food and health ingredients, processing, and packaging industry. The trade fair offers food, beverage, and health industry leaders an opportunity to source the latest and most innovative ingredients available. In addition, it is an excellent networking platform for meeting relevant ingredient suppliers and buyers in the region. Meant for all professionals associated with the food and health industry FiHi is co-located with Propak.

IndiFoodBev explores the emerging trends in the food and beverage industry, including new ingredients, technologies, processes, packaging, food safety and regulations. It highlights the factors affecting the growth of the food and beverage industry in India and globally.

Growing demand for multi-functional ingredients

Industry experts say that the rapidly growing food industry is positively affecting the food ingredients industry. Food ingredients including starches, vegetable oils and fats, natural sweeteners, enzymes, antioxidants, natural flavoring and colors, and functional ingredients are defined as additives for performing various functions in food such as maintaining or improving nutritional value, taste, texture, and appearance. Persistence Market Research projects the global food ingredients market to exceed US\$ 400 billion (approximately Rs 28,43,220 crore) in revenues by the end of 2022.

Various studies report an increase in demand for food ingredients such as functional food ingredients, specialty food ingredients, nutraceutical ingredients, health ingredients, and fermented ingredients. Given an example, dietary supplements are creating an opportunity for nutraceutical ingredients manufacturers to come up with new options for the evolving consumer base. In addition, increased awareness about health and fitness and regulatory bodies' mandates for food fortification, and changing lifestyles are fostering the growth of food ingredients and driving innovations in the food and beverage industry.

Natural food ingredients

Urbanization, informed consumers, and a rising population with its growing purchasing power have led to the rapid adoption of convenience foods. Ever-increasing consumer awareness of the health benefits associated with natural ingredients fuels their growth. The latest trends in the food and beverage industry reveal that most functional food ingredients are sourced through natural means.

Meeting consumer demands

The food and beverage industry in India is continually evolving based on the needs of consumers. Consumers want to try new, exciting, yet healthy food options. And at the same time, they are keeping a distance from sugary, caffeine-laden drinks – looking for alternatives that are both healthy and environmentally friendly.

The food and beverage industry is embracing a more holistic view of the health and wealth of its consumers. In the coming years, the industry may also see an increasing emphasis on functional food and beverages with super ingredients; plant-based products like creamers or milk; and, globally inspired flavors and new textures.

With dynamic changes in consumer perception and awareness, we see food and beverage manufacturers becoming more creative with the natural ingredients sooner rather than later. Sustainability, too, is a significant trend in the market. Consumers are ready to pay more for products that are sustainably sourced, processed, packed and delivered.

– Mandeep Kaur, edit4@ippgroup.in

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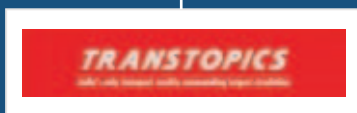


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Discussing the realities of rural markets

Rural India is an opportunity for FMCG companies

The first edition of the Rural Marketing Summit India was organized by Messe Frankfurt India in association with the Rural Marketing Association of India (RMAI) and MART Global Management Solutions, from 7 to 8 August 2019 in New Delhi.

The event was inaugurated by Anil Pratap Singh, adviser – Agriculture, NITI Aayog, Government of India, along with the IT veteran Som Mittal and Pradeep Kashyap, who is known as the father of Rural Marketing, and Biswabaran Chakrabarti, president of the Rural Marketing Association of India.

The summit was introduced with the perspective of enhancing the reach of various organizations in the rural market and aimed to be a platform to probe and explore winning strategies in the currently dynamic rural environment. It also served as a platform to bring together leading stakeholders to deliberate learnings from successful rural strategies and facilitate

MANDEEP KAUR

Panel discussion on ensuring the right product and service for the rural markets at Rural Marketing Summit India, New Delhi

marketers to effectively cater to rural Indian consumers across sectors.

The two-day summit included several panel discussions between the senior FMCG industry leaders, policy makers and consultants on understanding the rural consumer, digital technologies in rural India, public private partnerships in providing affordable solutions, reaching the last mile and ensuring the right product, among others. While sharing brand case studies during a panel discussion, the moderator Pradeep Kashyap addressed the issue of product design for the rural market and said, “We should not push the same products that we have developed for the urban market into the rural market. Rural market is bigger than the urban market, but we have a perception that rural people buy cheap products. In reality, they don’t buy cheap products; in fact, they buy valuable products.”

Rural India is an opportunity

Rasneet Kaur, marketing lead – Rural Business, GSK Consumer Healthcare admitted that rural areas represent an opportunity for GSK and said, “If you just look at rural India, 62% of pregnant women are anemic, 50% of the women in rural areas are malnourished and the same is with their children. This is one of the neglected verticals of the rural areas. We at GSK create the category need first. We understand their nutritional needs and create categories for them.” She also added that GSK makes people understand what their product does to them. “We are aware that the palates for rural and urban differ, so we are formulating products with various taste modifications. For example, Boost does not have the same taste in Delhi and in South India,” she said.

Gul Raj Bhatia, vice president – Healthcare, Dabur India agreed that Dabur’s products were evolved for future. He said, “We have developed products keeping the rural consumer in mind. Our



home remedies are put in a package and offered to the consumer at an affordable price.” He acknowledged that rural consumers have less disposable income and they are inclined to products that are affordable, offer value for money and are more acceptable for daily usage.

“Dabur has a unique approach to designing products and creating formats that are acceptable in the rural market. At Dabur, we do a lot of reverse engineering and we have

benchmarks for pricing where we offer equally comparable margins as the local brands offer to rural retailers,” Raj shared.

Rajat Kumar Jain, category head, Maggi Noodles shared insights about Nestle and said, “Nestle is a premium product company. All of its products undergo many stages of value addition before they are cooked and served.” He also made the audience aware of the innovation and renovation processes of the company’s products.

The key takeaway for the panel discussion was – For rural consumers, price is not necessarily the biggest concern. In fact, it is really the creation of value through relevance.

The conclave witnessed participation from various industries including FMCG and media where eminent speakers represented the entire cross-section of the FMCG industry who addressed the opportunities and challenges within the industry. ■

Fresh Cap reduces oxidation of beer

Ensures 15% longer freshness period

Carlsberg believes that ‘fresher beer equals better beer’. So, it’s Fresh Cap’ innovation was designed to reduce oxidation via an oxygen scavenging compound inside the liner of the cap. This results in less oxygen in the bottle, because the cap actively absorbs the gas, removing it from the headspace.

The introduction of the cap, initially it seems for Asian markets, coincides with a complete makeover of the packaging for the famous pilsner brand, which is being touted as ‘New look for the same great brew’. Currently, AIPIA is not aware if this is an ‘in house’ innovation or outsourced.

As freshness is one of the factors defining better beer, Carlsberg always aspires to find ways of keeping its bottled beer fresher for as long as possible – and to secure better beer quality, it is important to control the amount of oxygen in the bottle. When beer is exposed to oxygen, it begins to oxidize, resulting in unwanted flavors.

The reduction of flavor oxidation ensures that the beer tastes fresher for longer, it says.

Carlsberg in bottles now comes with an innovative Fresh Cap that removes oxygen from the air in the bottle (pic courtesy - Carlsberg)



The solution promises up to a 15% longer freshness period compared to other conventional caps on the market, over the full shelf life of a product.

While it is known as ‘Fresh Cap’ in several markets, in Vietnam it will be called the ‘ZerO2 cap’, where it was introduced on Carlsberg Premium Smooth Draught – one of the company’s key products in that market.

Stefano Clini, managing director, Carlsberg Vietnam commented, “At Carlsberg, we’re consistently striving to do better, and while there are big

things we can do in our operations, in our communities, and in our products that can make a difference, we also believe that attention to small details can have a major impact on what we deliver to society. Our new ZerO2 bottle cap is in many ways a culmination of this belief. We discovered that by rethinking how we design the lids of our bottles, we could deliver an even better product to consumers – which just goes to show that no detail can be overlooked on the path to progress,” he said. ■

Learn more about active and intelligent food and beverage packaging at the upcoming Packaging Design Innovation and Technology conference (PDIT2) on 13 December 2019 at Pragati Maidan, New Delhi, India. The conference will be co-organized by IPPStar and Messe Dusseldorf India and it will be partnered this time by the Active and Intelligent Packaging Industry Association (AIPIA), Netherlands.

<https://ippstar.org/2019/08/27/the-2nd-packaging-design-innovation-and-technology-conference/>

BottleVin launches NFC and QR enabled bottles for Reynold's Family Winery

Active and intelligent packaging

BottleVin, a Silicon Valley-based, startup that developed a smart bottle marketing and analytics platform for wine, spirits and beer producers in 2018, has announced the launch of its latest near-field communication (NFC) enabled bottle for its original client, Napa Valley-based Reynold's Family Winery.

The company's first NFC-enabled bottles were introduced with Reynolds in a pilot program and is entering the second year of bottling with both NFC and unique QR labels. BottleVin partnered with Landmark Label or Cellotape, a Resource Label Group company, to create the NFC labels for its smart packaging platform.

"This offers an extraordinary marketing opportunity," said Steve Reynolds, founder, and owner of Reynolds Family Winery. "If you were to just see our wines on a crowded store shelf, you wouldn't immediately know our story. But thanks to BottleVin, with just a tap, the bottle becomes the storyteller. The depth of product information we can deliver is far beyond what a label offers."

"We created BottleVin because we saw an opportunity to blend the world of wine with technology, connecting producers directly to their customers in a meaningful and authentic way," said Paul Salcedo, co-founder and chief executive officer at BottleVin. "Our platform lets producers easily engage customers via NFC, QR and image recognition technologies, while better



BottleVin's smart bottle platform utilizes a combination of NFC, QR and image recognition technologies (Pic courtesy - Business Wire)

understanding their market to increase sales."

Selecting a wine has largely become a mobile experience – with a majority of consumers not researching online at a desktop before entering a store or restaurant. BottleVin's platform turns bottles into IoT devices, providing a new way for producers to reach customers wherever they are engaging with wine.

The marketing and analytics platform provides producers real-time control over their brand message and product information to keep it fresh and relevant while delivering actionable market insights, says the company. A BottleVin-connected product is ready to share content for achieving any branding, awareness or loyalty

goal, it claims. The technology is already on more than 200,000 bottles of wine. ■

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FrieslandCampina uses intelligent packaging to tackle infant formula counterfeits in China

Track and trace technology for consumer engagement and authenticity

The high level of counterfeit infant formula in China is a major concern for those supplying this huge market with authentic and carefully regulated products. A dairy product manufacturer, FrieslandCampina, has appointed longstanding AIPIA member, Kezzler, to provide global serialization and track and trace services for its Friso range.

The project involves the application of unique, secure and traceable identities in the form of codes to the brand. By creating a fully connected supply chain from production to consumption, the solution supports confidence in the brand by eliminating counterfeiting concerns as well as enabling FrieslandCampina to engage consumers directly, the company reported.

The codes are generated using Kezzler's patented encryption technology. For each unit of Friso Gold, Prestige or FrisoMum, a first QR code is located under the can to be used for track and trace purposes. A second QR code will be placed inside the product and provides a channel for direct consumer engagement, including loyalty programs and promotions.

Friso is manufactured in The Netherlands and exported to China. As the product moves through the supply chain, data from upstream production

FrieslandCampina uses intelligent packaging to tackle counterfeits for its Friso infant formula range



partners, such as dairy farmers, and downstream participants, such as importers and distributors, is associated with each unit using Kezzler's traceability solution.

"We live in a world of complex, global supply chains. To properly ensure food safety, brands need to have visibility on each product from creation through to consumption. Kezzler's serialization technology helps FrieslandCampina protect both its brands and consumers. Tracking Friso products through the supply chain, storing the associated product information and enabling real-time authentication supports both food safety and consumer confidence," explained Christine C Akselsen, chief executive officer, Kezzler.

The codes allow consumers to scan the product using their phone to check its authenticity and learn more about their purchase. Kezzler has also

integrated the solution with China's popular WeChat platform, which enables consumers to scan the code using the app.

Commenting on the project, a senior representative of FrieslandCampina said, "Ensuring our consumers can have full confidence in FrieslandCampina brands is paramount. This is why we have adopted Kezzler's serialization technology, to deliver supply chain visibility for our infant formula brands, as well as providing a way for stakeholders throughout the supply chain to validate their products in real-time." ■

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Cargill opens first corn silo in Karnataka

Silo gives better market access to local farmers

Cargill has recently opened its first corn silo in the country in Davangere, Karnataka, making inroads into bulk agricultural storage in India. Built with an investment of US\$ 10 million (approximately Rs 70 crore) and a storage capacity of 60,000 tons, the silo is situated next to Cargill's corn milling plant in Davangere. According to the company, this allows Indian and global food companies access to high-quality, raw material stored at the right temperature, translating to superior product quality for their food products. The silo will also provide local farmers with increased market access as Cargill expands its procurement of corn locally.

The corn silo was inaugurated by GM Siddheshwara, an honorable member of Parliament, Davangere, Karnataka and Ramappa, honorable member of Legislative Assembly, Harihara, Karnataka along with Simon George, president, Cargill India.

Speaking at the occasion Siddheshwara said, "Major population of the local Davangere community is engaged in corn farming. With this initiative, I am happy that local farmers will get more opportunities to sell their produce, making them more profitable in the long run."

Ramappa also inaugurated a local community initiative where Cargill has constructed a washroom in a school in Bhanuvalli village. He said,

Cargill launches its first corn silo in the country in Davangere, Karnataka. (pic courtesy - apnnews)

(File image)



"Helping local communities is the joint responsibility of the industry as well as the government. It is very encouraging to see Cargill come forward with public utility initiatives for the development of Davangere."

"As we continue to collaborate with Indian manufacturers to expand our footprint in starch and sweetener business, this silo is an important step towards

ensuring supply of top-quality corn to the plant," said George. "We will continue to innovate for Indian and international customers and help Indian farmers align better with the market. This silo expands Cargill's supply chain capabilities in India and the stringent food safety standards followed here will prevent contamination of corn during storage." ■



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Cocoatrait to Cocoshala

Chocolate professionals warm-up to the bean to bar revolution

Founded by L Nitin Chordia in 2014, the Chennai-based Cocotrait has three business verticals – Cocotrait, a consulting vertical; Cocoshala, education and training vertical; and, Kocotrait, a product vertical.

Speaking about these, Chordia says, “We offer educational programs, raw materials, product supplies, chocolate experiences and consulting services. Our education initiative is Cocoshala, where we host the bean to bar chocolate making certification program and the chocolate tasters certification program.

“Cocotrait supplies raw materials to the bean to bar industry and curates chocolate experiences across the country. Also, Kocotrait is our chocolate brand (world’s 1st zero waste and sustainable) that we have established. For the bean to bar industry, it is the benchmark to emulate and follow.”

First professional chocolate taster

Chordia claims to be India’s 1st chocolate taster certified by the International Institute of Chocolate and Cocoa Tasting (IICCT), UK. He has worked as a retail business consultant both in India and abroad. Explaining how he got started in the chocolate business, Chordia says, “While working on a local retail consulting assignment in India, I had a chance to experience bean to bar chocolates in 2007. I started following the trend across the world, and over the years, decided to focus on crafting chocolates. Moreover, my

MANDEEP KAUR

meeting with Martin Christy from IICCT in the UK gave me good clarity on myths about cocoa and chocolate. After coming back to India, I started Cocotrait.”

The company officially hosts the IICCT, UK courses in India. “We have trained more than 100 students from across the world in bean to bar chocolate tasting. We believe we are influential and have played a role in the success of almost every bean to bar maker in India,” adds Chordia.

Processing influences the final chocolate flavor

Chocolate processing from bean to chocolate starts with cleaning, sorting, grading of cocoa beans, roasting. The next steps include cracking, winnowing, refining, conching, tempering, molding, and demoulding.

Explaining the importance of each step in chocolate processing, he says, “Each step of the bean to bar processing plays a role in influencing the final chocolate flavor. However, I would say that fermentation,



*L Nitin Chordia,
founder of
Cocotrait*



*L Nitin Chordia
sorting cocoa
fruit with
farmers*

roasting, and conching are the main flavor developers. Any negligence in other processing steps would also mean a possible compromise on the final flavor of chocolate.”

Role of Cocotrait in the supply chain

“To evolve further, the Indian bean to bar industry needs to access fine flavor cocoa beans. Unless these are available, the bean to bar industry will not keep pace, and we shall not be able to make fine chocolates. Cocotrait works with farmers to define post-harvest protocols and arrange for the buyback from the farmers to ensure that they get paid according to international norms,” Chordia explains.

He adds, “We work with farmers in Kerala and Andhra Pradesh where we help them by educating them to improve their flavor quality by controlled fermentation and drying. We store the beans in a temperature and humidity-controlled environment in our warehouses in Chennai.”

Thermal stability of chocolates

Considering India’s climate, chocolates should be stored and transported under controlled conditions. According to Chordia, “Like every pure chocolate, our chocolates need to be stored in temperature and humidity-controlled conditions. Thermal shocks do impact the visual appeal of chocolate. We try and ensure that our chocolates are stored and transported in good condition. The ideal storage and display condition are 18° Celcius.”

Step towards sustainability

Chordia says proudly, “We are the 1st chocolate brand in the world to use a completely sustainable, up-cycled, biodegradable, recyclable and compostable paper, plastic-free and zero-waste packaging material. We have used upcycled cotton fabric blended with cocoa husk to make a box to place the chocolate.”

Chordia further adds, “We believe sustainability is not just about using organic ingredients. We believe that we need to be sustainable across the supply chain. With that aim, we also have decided to print our

packaging using water-based inks in the future, which is both environment and people-friendly and is printed by V-Excel, a company that trains young minds who have special needs. We use the most energy-efficient equipment (many developed in-house) and intend to utilize solar energy at least in part of our operations going forward.”

Bean to bar revolution

Nowadays, consumers have already realized the need to consume organic products and make sustainable purchases. “We are happy that our efforts to connect with consumers have paid off. On the other side, consumers are also warming up to the bean to bar revolution, and we see that we are warmly accepted.”

“We hope that Cocotrait will educate many relevant audiences about bean to bar chocolates in India and place India firmly on the global bean to bar chocolate map. Our goal is to ensure that India is at par with many other cocoa-producing countries that have begun their evolution in the bean to bar space,” Chordia concluded. ■

Barry Callebaut unveils the full power of the cacao fruit

Launches whole fruit chocolate made from 100% pure cacao fruit

Barry Callebaut, one of the world's leading manufacturers of chocolate and cocoa products, unveiled an innovative range of products made from the cacao fruit and marked the creation of a next-gen food and drink category at an exclusive event in San Francisco 'Cacaofruit Experience'. As part of 'Cacaofruit Experience', the company also presented the artisan world with the delicious whole fruit chocolate made from 100% pure cacao fruit.

Food and drinks for the next generation

Whereas normally 70% of the fruit is discarded as waste, 'Cacaofruit Experience' unleashed the full power of the cacao fruit as these products make use of the entire fruit such as its beans, its nutrient-dense peel, and its fresh and fruity pulp and juice. This results in a range of good-quality ingredients that can be used in applications such as juices, smoothies, frozen desserts, bakery and pastry products, and snacks to chocolate.

'Cacaofruit Experience' responds to the millennials and centennials' needs of living a healthy life. They claim to have a fresh and fruity taste and are rich in nutrients such as fibers, protein, and magnesium. At the same time, they are good for the planet and its people because the entire cacao fruit is utilized.

Antoine de Saint-Affrique, chief executive officer at Barry Callebaut said, "Innovation is

Barry Callebaut launches whole fruit chocolate made from 100% pure cacao fruit (pic courtesy - Barry Callebaut)



one of the pillars of our growth strategy. Our unparalleled knowledge has enabled us to break the new ground, unleashing the full power of the cacao fruit, which the Mayans cherished as 'food of the gods'. We are looking forward to starting a new journey with our customers and discovering the completely new range of applications that 'Cacaofruit Experience' and whole fruit chocolate will make possible."

Whole fruit chocolate made from 100% pure cacao fruit

'Cacaofruit Experience' is also hitting the chef and artisan market as a new type of chocolate – Whole fruit chocolate made from 100% pure cacao fruit. According to the company, from May 2020, whole fruit chocolate will be available in two variants - the punchy WholeFruit Bold and the smooth, luscious WholeFruit Velvety.

Potential of whole fruit chocolate in the market

A quantitative consumer study conducted by an independent global market research agency in the US, the UK and China predict that whole fruit is a winning value proposition.

Pablo Perversi, chief officer - Innovation, Sustainability and Quality at Barry Callebaut added, "Our goal in R&D is to develop on-trend innovations, satisfy unmet consumer needs and also taste great. Whole fruit chocolate scores on all three points. It will respond to the need for millennials and centennials for 'healthy indulgence' just like our Ruby chocolate, launched in 2017, meets the need for 'hedonistic indulgence'. Moreover, by using more of the cacao fruit and wasting less, we are also having a positive impact on the planet and its people." ■

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Natural colors in the food industry

Technology to revolutionize the natural food color industry

The color of processed food plays a vital role in consumer acceptance by visually stimulating one's appetite. When we think of an orange beverage, we instantly associate it with a bright orange color, similarly tomato ketchup with rich red, strawberry ice cream with a unique pink color, and mint candy with green. These are the innate colors of the vital ingredients of food. However, during processing, there is often a loss in color intensity. Hence, additional colors are used in the food industry to restore the color of food lost during processing and to create uniformity in the product (for every batch). These added colors can either be artificial or natural. Artificial colors are chemically synthesized, whereas natural colors come from agricultural, biological, or mineral sources.

Natural colors market

Natural colors are increasingly replacing artificial coloring in the food and beverage industry. There is an increasing demand for natural food colors and consumer preference for 'free-from' labeled products. The need for enhanced product appeal and extensive R&D in the food and beverage industry are significant factors driving the market for natural food colors.

According to Research and Markets report, the global market for food colors is expected to reach US\$ 4.65 billion (approximately Rs 33,000 crore) by 2024 as against US\$ 3.027 billion (about Rs 21,000

ANU BHUSANI



*Pic courtesy -
Bruno
Scramgnon
from Pexels*

crore) in 2018. Market growth is anticipated to remain high in the APEJ (the Asia Pacific excluding Japan) region with a CAGR of 8.3% between 2018 and 2028.

Global players in the food color industry are Archer Daniels Midland (US), DD Williamson (US), Naturex (France), Chr. Hansen Holding (Denmark), FMC (US), Koninklijke DSM (The Netherlands), Döhler (Germany), GNT Group (The Netherlands), Color & Fragrance (US), DowDupont (US), Sensient Technologies (US), Lycored (Israel) and ITC colors (India). The most commonly used natural colors

are carotenoids, chlorophyll, anthocyanin, betanin, caramel, and turmeric.

Carotenoids

Carotenoids (E160a – 160g) are a class of deep red, yellow, or orange-colored pigments found in fruit, vegetables, and plants. The common carotenoids are α -carotene, β -carotene, β -cryptoxanthin, lutein, zeaxanthin, and lycopene. Carotenoids are fat-soluble, heat-stable, and are not affected by pH change. Hence, they are a good choice for coloring dairy products such as margarine and cheese.

Chlorophyll

Chlorophyll(E140) is a green photosynthetic pigment found in all green leafy vegetables. It is a green oil-soluble color used in confectionery and dairy products that use mint or lime flavors.

Anthocyanins

Anthocyanins (E163) are water-soluble red, purple, and blue pigments found in flowers, fruit, and vegetables. They are pH-sensitive that is anthocyanins are red at acidic pH and blue at alkaline conditions. Non-carbonated soft drinks, jams, jelly, and sugar confectionery use these colorants.

Betanin

Betanin (E162) is a water-soluble red dye obtained from beetroot. Similar to anthocyanin, betanin also changes color with pH. A bright bluish-red color between 4 and 5 at pH, betanin becomes blue-violet as the pH increases. At alkaline pH, betanin hydrolyzes, leading to yellow-brown color. Betanin is used for frozen or dried products with short shelf life such as yogurt and ice creams since it is less stable when subjected to light, heat, and oxygen.

Caramel

Caramel (E150a – E150d) is the color obtained through the controlled heat treatment of carbohydrates that are acquired to form glucose corn syrups and sugar cane. This water-soluble color is associated with the color and flavor of baked foods. There are four classes of caramel with different colors, charges, and stability. Each class has specific functional properties to ensure compatibility with the



*Pic courtesy -
Trang Doan
from Pexels*



particularities of food and beverage. Ready-to-eat meals, seasonings, sauces, bakery, and alcoholic beverages use caramel colors.

Turmeric

Turmeric (E100) is a flowering plant, with a root that has a bright yellow color due to the pigment curcumin - demethoxycurcumin and bisdemethoxycurcumin. Traditionally used for imparting flavor and color in cooking, the yellow color obtained from turmeric is used in bakery products, dry beverage mixes, ice cream, sauces, soups and frostings.

A promising role for natural colors

Technology has the power to revolutionize the natural food color industry by providing solutions to several existing problems. Current barriers in the use of natural colors in the food and beverage industry are their high production cost, low heat and light stability, poor shelf stability, and selective (oil or aqueous) solubility. For instance, Döhler's natural colors have developed color emulsions

(cloudy and clear emulsion) that are highly stable and capable of delivering intense color even at low doses. On the other hand, Sensient's microfine technology has produced natural colors that disperse evenly in foods and eliminate the typical specking issues associated with natural powders.

The R&D departments in the food industries are continually coming up with innovative solutions to overcome the issues associated with natural colors. Being safe and aesthetically appealing to consumers, natural colors have a promising role in the food and beverage industry.■

Anu Bhusani is a doctorate in Food Technology from CSIR – The Central Food Technological Research Institute, Bengaluru, Karnataka, India

*Glossary:
E number is a food additive approved by the European Union (EU)*

*Pic courtesy -
Biogen extracts*

Cremica Food Industries – Continually creating and innovating

Double-digit growth for an innovative food processor

Rajni Bector, a passionate food enthusiast, set up the Delhi headquartered Cremica group. Currently led by chairman and managing director Akshay Bector, Cremica Food Industries has established itself as a food product conglomerate. It leads the food processing business through a range of products including biscuits, bread and buns, confectioneries, Indian gravies and curries, tomato ketchup, sauces, mayonnaise, spreads, syrups, toppings, salad dressings, ice-cream, fruit and flavored syrups for milk and thick shakes.

Speaking about the company, Bector proudly says, “The company has internationally certified production facilities with a special focus on the quality of its products. Cremica has registered double-digit growth year on year.”

India's most extensive tomato ketchup line

Describing the product portfolio, Bector says, “Cremica operates India's largest tomato ketchup line and is the country's biggest producer of ketchup portion packs, capable of packing 2.5 million sachets in a day. Also, the company offers a wide variety of exotic mayonnaise for sandwiches, including a combination of ethnic flavors

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Site view – Cremica Mega Food Park, Una, Himachal

Akshay Bector, chairman and managing director at Cremica Food Industries



and international flavors such as tandoori, cheese, and Piri Piri.”

“Cremica salad dressings with the goodness of omega balance and low sugar are available in 13 exotic flavors. Also, the company has entered the gourmet snacks category with Opera cottage-style olive oil potato crisps,” he adds.

Moreover, Cremica has entered the bar syrup category in association with Maison Routin of France with the launch of 'Bonheur' – a specialized range of syrups. Bector

explains, “Cremica and Maison Routin bring forward more than 130 years of a legacy by launching original French syrups. All flavored syrups are jointly created and developed by Maison Routin and Cremica Foods. The Bonheur syrups are specially formulated to offer intensity and creativity to the entire range.”

Cremica Food Park in Una, Himachal

At the beginning of 2019, Cremica set up a 55-acre food park with an investment of approximately Rs 100 crore at Una in Himachal Pradesh. Bector explains the food processing capability of the new plant, “Cremica Food Park provides a platform for establishing backward and forward linkages covering the entire food processing supply chain and implements best practices in post-harvest management. The platform will help realize the Government's



aim of linking agricultural produce to the market by bringing all the stakeholders together, including farmers, processors and retailers." He is confident that it will undoubtedly minimize wastage, increase farmers' incomes, and create employment opportunities.

Invests in expanding manufacturing capabilities

Cremica is the third-largest seller of tomato ketchup and the biggest seller of portion packs in India. Commenting on its high growth, Bector says, "Cremica's success lies in the fact that we understand our customers' smallest needs, anticipate future opportunities and customize our products according to the local and global requirements of our clients. Above all, Cremica has regularly invested in the expansion of manufacturing capabilities and ensuring maximum automation of our plants."

Belief in continuous innovation

Bector states that the company aims to inspire and delight the customer by continually innovating new options. He adds, "This has made us perhaps the world's first manufacturer of vegetarian mayonnaise and zero preservative curries in pouch



Tomato ketchup squeeze filling unit at Cremica Mega Food Park, Una, Himachal



Cremica salad dressing range. (Pic courtesy Cremica)

packs for restaurant use. We were the first brand to launch grill stable sandwich spread and olive oil kettle chips worldwide, and we are pioneers for various categories in India as well."

Innovate to differentiate and grow

Commenting on its growth, he says, "Cremica has a healthy balance of B2B and B2C growth. We are working very aggressively to increase our presence in the retail market."

A diverse portfolio attracts competitors in various categories. He states, "We focus on innovation, quality and taste. These three pillars have helped us differentiate our products in various categories."

While international food brands are introducing Indian flavors to the market, Cremica has introduced salad dressings in global flavors. Bector states, "Cremica understands the Indian palate and requirements

of consumers. As India is becoming a big market, global brands are trying their luck with Indian flavors. Similarly, Indian consumers are no more afraid to try new flavors, which were considered a niche a decade ago."

Focus on retail and convenience foods

Speaking of coming expansion plans, he says, "We are planning to focus more on the retail category in the coming years. We would focus on the convenience food category."

The company's vision for the coming ten years is, he says, "To strive to become one of the world's leading premium food brands. Our roots make us special as a homegrown company with an understanding of the discerning Indian palate. We will use this skill to innovate and create new and exciting offerings of uncompromising quality and unbeatable taste." ■



Site view - Boilers, Cremica Mega Food Park, Una, Himachal

Improvement in cold chain and new food categories

Demand drives the frozen food market in India

Both research and market reports indicate that the Indian frozen food market is growing rapidly. Steady demand growth is driving the processed and frozen food market in the country. In 2018, the Indian frozen food market reached Rs 7,400 crore and was projected to reach Rs 18,800 crore by 2024, expanding at a CAGR of around 17% from 2019 to 2024. Comprising frozen vegetables, fruit, vegetable snacks, and meat products, the market for frozen food is gaining traction in India owing to convenience. Apart from requiring less preparation and culinary expertise, the segment's growth is bringing many innovations.

Expanding product portfolio

Until a few years ago, frozen foods only comprised of seafood, chicken, snacks and vegetables. Today, mainline

MITHUN
APPAIAH

cooked or ready to eat foods like pizza, biryani and meal solutions are coming into the frame as frozen foods. Changing lifestyles, rising double incomes, long working hours and shortened home time have played a role in food manufacturers drumming up innovative products. For instance, Sumeru has recently launched frozen Momos. New products like non-veg fries, natural grated coconut, super millet kichadi are also reaching the cold-chain shelves.

Freezing technology

The use of innovative technologies for the safe freezing of food is significant in this segment. The most sought-after freezing technology is Individual Quick Freezing (IQF). As the term suggests, it stands for the quick freezing of individual pieces of product, as opposed to bulk or block

freezing. It keeps the food fresh and nutritious until the time it reaches the consumer's table. Sumeru is using IQF technology for all its frozen food products.

Packaging is critical

Packaging plays a crucial role in the frozen food segment. The packaging used for frozen foods should be puncture-resistant, moisture resistant, leak-proof, and durable enough to withstand heavy drop weight. Moreover, it should be able to withstand the pressures of sealing, freezing, storage, transportation, thawing, and in some cases, even cooking. These properties help to prevent spoilage and dehydration of food, which eventually results in extending its shelf-life. Besides these functional benefits, packaging plays a significant role in influencing consumer buying decisions.

Technological developments

*Veg MoMo (Pic
courtesy -
Sumeru)*



have resulted in flexible packaging companies having the ability to supply new film types and improved designs. Flexible packaging contains multi-layered laminated sheets of single or a combination of substrates such as plastic, paper, or aluminum foils. It provides strength, moisture-resistance, aroma retention, gloss, printability, low odor, and better brand positioning as compared to rigid packaging. Moreover, the use of re-sealable zippers, tear notch openings, and single-serve packing have played a key role in enhancing the trend.

Cold chain infrastructure

By its nature, frozen food warrants robust packaging. Hence it needs appropriate transportation till the last mile. In a country like India, where infrastructure is one of the significant challenges, the cold

*French fries processing line.
Pic courtesy -
Spudsmart.com*



chain plays a critical role. According to the Imarc research report, the Indian cold chain market was worth Rs 112 crore in 2018. The market is further projected to reach Rs 261 crore by 2024, growing at a CAGR of 14.8% from 2019 to 2024. Fleet expansions, quicker transportation of goods is the key to frozen foods.

The emergence of super and hyper marts

The growth in the food sector has also led to a surge in supermarkets and hypermarkets. Large format supermarkets and hypermarkets offer the required space and infrastructure for the storage and display of frozen foods. Markets in the west have large sections for frozen food, and Indian shoppers living in those countries can purchase everything frozen – from fish to jackfruit seeds.

According to surveys, with an increase in fast-paced lifestyles, a rise in the number of women in the workforce, double-income homes and young professionals living alone, the consumption of frozen food has increased dramatically. Today frozen food is more accessible to the Indian consumer because of the increase in many large format retail stores in the country. However, brands in this category haven't done enough to break the myth among consumers about frozen food. With the advent of better infrastructure, and global consumers and competition heating this category, it will be the one to watch. ■

Mithun Appaiah is chief executive officer at Innovative Foods - makers of brand Sumeru

*Pic courtesy -
bulkinside.com*



Sumeru chicken egg roll (Pic courtesy - Sumeru)



Second Nature's preservative-free, cold-extracted juices

Second to tree

As we all are experiencing new trends in the fresh fruit segment, new techniques, and unique flavors are being added daily. Food processors are well aware that not everyone can enjoy fruit or fruit-based products right from the tree. This thought became the seed for Nashik-based Second Nature's founder Dipti Motiani. Her company claims to provide additive-free (no added sugar, no preservatives) 100% cold extracted fruit juice and veggie blends that are 'second-to-tree.' Its products include cold extracted fruit and vegetable juices and dairy-free nut milk.

Farm to process

Second Nature proudly talks about its more than 20-year association with farmers, which helps it to deliver products from farm to home. The company manages the entire supply chain right from the growing process to harvest, post-harvest management, and fruit processing.

Motiani explains, "We work directly with farmers to source fruit and vegetables. We train farmers to follow globally accepted quality standards and best practices at their farms. Our team of agronomists works with farmers throughout the year to help growers and ensure that these practices are followed."

She believes that post-harvest management is the key

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to retaining the taste and nutrition of fresh fruit. She says, "Our team of harvesters ensures that the fruit is harvested at the right time, shipped to the processing plant within hours of harvesting and put into a temperature-controlled environment to ensure

freshness without any nutrition loss."

Cold extraction versus cold-pressed

Second Nature uses a cold extraction process to extract juices. Explaining this process, Motiani says, "We use the cold extraction method for juice extraction to retain the maximum nutrition and natural taste of all of our products. Other methods of juice processing involve heating, which leads to the loss of nutritional value."

Adding to the difference between cold pressed and cold extracted juices, she says, "Most juices available in the market are cold-pressed. In the cold extraction method, the juice and pulp are gently extracted under vacuum to



*Dipti Motiani,
founder and
chief product
officer at
Second Nature*

remove the dissolved air bubbles that help to prevent oxidation and loss of natural flavors. On the other hand, cold-pressed juices are extracted using pressure and strained in open atmospheric conditions, which leads to fiber loss and oxidation.”

Awareness of cold extracted juices in India

Cold extracted juices are a newer category in the Indian market, and the concept is still alien to most people. She says, “There’s a growing awareness among the consumers about health. They are mindful of the nutritional value of their diet. So, while cold extracted juices are a new category, it is also fast-growing. The Indian customer has resources to make this category a part of their daily routine. It is now up to the producers to address the supply chain challenges and provide the customer with the best quality products possible.”

Packaging and food safety

Cold extraction processing of juices reduces oxidation while the ensuing high-pressure processing (HPP) ensures their prolonged shelf-life. The bottles are put under extremely high pressure (5 times that at the deepest point of the ocean) for HPP. She says, “This process requires flexible packaging; therefore, we use PET bottles. To ensure better hygiene standards, we make the bottles ourselves. We source PET pre-forms from the market and then blow them at our factory to ensure better hygiene of the bottles.”

Distribution network

Since Second Nature’s juices are preservative-free, the cold chain is critical to maintaining product quality. She pointed out that India still lags in cold chain infrastructure, “We are working on setting up our supply chain and building relationships with supply partners in Mumbai,

Machine putting labels on juice bottles (pic courtesy - Second Nature)



Juice filling in PET-Bottles. Second Nature sources PET pre-forms from the market and then blow them at their factory to ensure better hygiene of the bottles (pic courtesy - Second Nature)



Pune, Bangalore, Hyderabad and Delhi to ensure that the juices are handled with the same care and love we put into making them. We do direct-to-home deliveries through our website, and we are also available on Big Basket and at Amazon.”

“As for markets abroad, we are already exporting fresh fruit and bulk pulps and juices globally. We are also exploring opportunities for business for our new-age products in already established markets.”

Expansion plans

Motiani shares, “Progressing forward, we plan on expanding products and geographies to reach a wider audience in an affordable format. Further down the line, we see ourselves producing a range of associated food products, built around the fruit and vegetable area, beyond beverages.”

“Fo success in achieving our aim, our efforts are directed towards encouraging and supporting good agricultural practices in India and building a culture of food safety and hygiene,” Motiani concluded. ■

Alstrut launches Cobotizur at PackPlus Expo

Portable plug and produce collaborative palletizer

Alstrut, a Chennai-based company, offers robotics and end of line automation solutions to various manufacturing segments across India in the automobile, auto-component, FMCG, food, packaging and pharmaceutical industries. The company showcased its new Cobotizur product at PackPlus Expo 2019 in New Delhi. The new launch has applications specifically in the FMCG, food and pharmaceutical industry.

Palletizer with a collaborative robot

To develop this product, Alstrut partnered with Denmark-based robotic arm provider, Universal Robots. Speaking about the launch, Anuj Bihani, managing director at Alstrut India said, "The UR10 collaborative robot from universal robots is a new kind of robot that comes with all the necessary features required to work in close proximity to the worker."

He further added, "Most of the robots in the industry work in a caged environment where people are not supposed to come close to them as it could be fatal. The Cobotizur, however, is designed in a way that allows the palletizer to be installed into an existing line without the need for additional guarding or fencing, thus making the installation extremely simple and effective."

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Portable with simple set-up

Bihani explained, "With this Cobotizur anyone can start palletizing without having any prior expertise or programming knowledge. A simple three-point calibration is all that is needed. With the help of the touch-panel interface, users can enter the dimensions and weigh all the SKUs. It can store over 200 SKU types. It is a portable solution, which allows the palletizing solution to be relocated easily within the plant or factory."

The platform approach of providing a plug and produce equipment empowers users to now deploy a simplified palletizing solution which earlier was perceived as a complex project. . . .

In addition to this, the key features of Cobotizur include quick installation, minimal footprint, modular easy to move, continuous operation, easy programming, safe usage and minimal maintenance," added Bihani.



Technical specifications

The Cobotizur includes a lifter for the 7th axis, vacuum gripper, vacuum pump, touch panel HMI, tower lamp and Cobotizur UR+ software. It can lift 6 to 8 cartons in a minute with a maximum weight capacity of 8 kilograms and maximum pallet size and stacking height of 1000 x 1200 and 1500 mm, respectively.

*Anuj Bihani,
managing
director at
Alstrut India
during the
launch of
Cobotizur at
PackPlus Expo
2019, New
Delhi, photo –
IFB*

Eliminates labor issues

Addressing the labor challenges faced by companies, Bihani said, "Many products are coming at the end of line process, and with manual intervention there are always high chances of error. Cobotizur eliminates the repetitive manual process of stacking cartons and helps to automate the operation by reducing manual errors, as well as increases the throughput."

Cobotizur is used for applications such as palletizing and case packaging, which helps product manufacturers increase productivity and reduce damages in production.

Launching new system next year

Bihani mentioned that the company has already deployed 25 units in South Asian countries including Sri Lanka and Bangladesh. He said, "Our target is to expand our business to South Asia and the Gulf region. To enter the global market with this product, we are aggressively participating in exhibitions in Dubai and the US." The company is working with top FMCG companies in India to provide automation solutions in the packaging line. However, he refused to reveal details of his clients at this time.

"The Cobotizur's weight holding capacity is 8 kg, as of now. We are also working on a system where we can increase its weight capacity. We will launch the new system with increased weight holding capabilities by the middle of next year," Bihani said in conclusion. ■

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Mr Milkman – a dairy industry platform

On track for over 1 million liters monthly

The Gurgaon-based startup, Mr Milkman, has enabled dairy farms to connect directly with end consumers. Mr Milkman's platform tracks sales data and measures these to provide an overview of the dairies' performance. The summary helps them manage their entire business – from farms to their customers' glass. Founded in 2017, the platform today works with leading dairies to help manage their operations.

Local milkman to the organized Mr Milkman

Speaking about the conception of this idea of starting a platform for dairy businesses, Samarth Setia, chief executive officer and co-founder at Mr Milkman, says, "The idea came from observing the local milkman who delivered milk to my house. These men would have no concrete management of accounts and would leave it mostly to memory. If there were any change in the delivery schedule or quantity, conveyed to the milkman via the building's security guard, which eventually led to several misunderstandings and incorrect billing."

"Conceived with a vision to change the perception of the local milkman to an organized entity, the platform built for the local milkman evolved to a platform for dairies to automate their processes," he adds.

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SaaS platform provides real-time data analytics

Explaining Mr Milkman's SaaS platform, Setia adds, "This platform enables largely unorganized dairies to streamline their businesses by tracking product sales, lifecycle and customer consumption patterns with real-time data analytics and reports of their operations."

According to him, the data helps dairies manage demand, sales forecasting, and distribution. The platform also creates offline distribution channel hubs and helps manage transportation and delivery to the end-customer.

Addressing the trend of direct to home milk delivery, Setia says, "Today farms across India are delivering premium quality, fortified, unadulterated milk directly from farm to home. Moreover, the milk is delivered in either premium and beautiful glass bottles or a Tetra pack.

Consumers enjoy the goodness of milk delivered to their doorsteps with the assurance that the milk is pure and unadulterated. These direct to home delivery services are easily managed through our platform."

The learning curve was difficult

Setia admitted that in the beginning, he was not aware of the dairy industry, and the learning curve was complicated. He shares, "Our first product was a very basic application that was developed to help local milkmen. Over time, we learned, and the platform has evolved into a SaaS product."

Smarter team better output

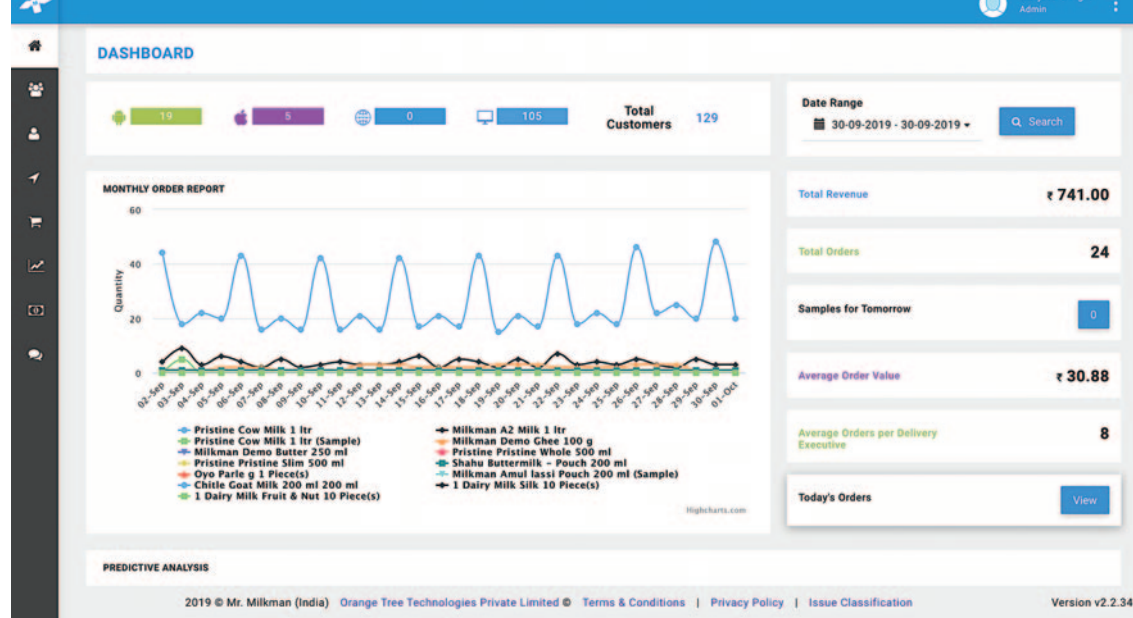
Setia admits to the need for teamwork, "I feel that being a solo founder was the biggest challenge I have faced. I was managing everything alone, from client management to addressing technical issues and even the finances, that led to a mess. However, now I can confidently say that I have learned a lot from my mistakes."

Realizing his mistakes, he understood that a strong team could overcome the challenges and ensure the improvement of the product. "Hiring smarter team members who are capable of making their own decisions has helped us scale faster," he admits.



*Samarth Setia,
chief executive
officer and co-
founder at Mr
Milkman*

Screen Shot of Mr Milkman's dashboard displaying monthly order report (pic courtesy - Mr Milkman)



The dashboard displays customer details for Anand Bisht (103, 9999281875, D111, Test 12, DLF Phase 2, Gurgaon) and Rajesh Singh (Delivery Executive, 9876543210, Hub Name: Gurgaon Hub, D111, Sector 56, Sushant Lok 2, Gurgaon, Haryana, India). Below the details is a table showing subscriptions:

Product	Everyday	On Interval	Custom	Quantity	Status	Action
Pristine, Milk, Cow Milk, 1 ltr (Rs 8) Delivered By : Gurgaon Hub Type : Sub ID : 337 Start Date : 26-09-2019 End Date : Not Defined	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	1	ON	Stop Settings
Pristine, Milk, Cow Milk, 1 ltr (Rs 8) Delivered By : Gurgaon Hub Type : Sub ID : 329 Start Date : 08-09-2019 End Date : Not Defined	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	2	ON	Stop Settings

The footer shows '2019 © Mr. Milkman (India) Orange Tree Technologies Private Limited © Terms & Conditions | Privacy Policy | Issue Classification Version v2.2.34'.

Clients and competition

With more than 60 clients across India, the company is currently on track to touch over 1 million liters monthly via its platform. Mr Milkman is now associated with organizations such as Milk Mantra, Whyte Farms, Gyan Dairy, Amlaan A2 Milk, PureMilk, Go4Life, Milk Valley Farms, Binsar Farms Creamery, Mr Dairy, Mr Milk, HappyMilk and Happymoo.

Setia is aware of the competition in this field and says, "We are aware that a few IT companies have built a custom product for a particular dairy just like any software company does. Although they sell the product developed for one to others, their product is not a SaaS solution."

Screen shot of Mr Milkman's milk delivery platform displaying product delivery information (pic courtesy - Mr Milkman)

Mr Milkman is growing

He proudly says, "The company is growing organically and steadily and have managed to grow three times in the past 12 months. Moreover, as a platform, we are growing, advancing in terms of technology, and introducing new features regularly."

"Successfully established in Tier-I and Tier-II cities, we are constantly partnering with dairies in Tier III markets as well. We aim to reach out to international dairies and have already caught the attention of a few of them. While they are exploring options on our platform, it is work-in-progress to make the platform ready for international usage," he concludes. ■

FSSAI focuses on safety and health

Consumer demand will push healthier production

Established under the Food Safety and Standards Act 2006, the Food Safety and Standards Authority of India (FSSAI) is establishing food safety regulations in India. The FSSAI lays down science-based standards for articles of food and regulates their manufacture, storage, distribution, sale, and import to ensure the availability of safe and healthy food for consumption.

Recently we got a chance to interact with Pawan Agarwal the chief executive officer of FSSAI. He made us aware of some of the new projects, systems, standards, and regulations and their implementation.

National Food Laboratory at Ghaziabad

Inaugurated by Harsh Vardhan, union minister of Health and Family Welfare, the FSSAI opened the National Food Laboratory at Ghaziabad in the New Delhi NCR on 23 August 2019. Speaking about the new laboratory, Agarwal said, "It is one of the two premier referral laboratories under the direct administrative control of FSSAI. The national lab is a result of a Public-Private-Partnership (PPP) – the first-of-its-kind in the food laboratory sector. The other referral laboratory, which is in Kolkata, has also been upgraded."

"The laboratory is equipped with very sophisticated and advanced technology for food

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testing. It is one of the best food labs in the country. The lab also includes training centers by Merck and Thermo Fisher. In this complex, we are going to have high-quality testing facilities and training facilities," he added.

New regulations and their implementation

The FSSAI issued many new rules in recent years. Since some of these regulations are struggling with concerns raised by industry, their implementation

may take time. Agarwal stated that developing an entire ecosystem takes a while, and there is always a time lag of 6 months to 1.5 years in setting standards and their practical implementation.

Agarwal said, "It's an ongoing process. New developments will take place from time to time and they will be reviewed and improved. The standards are coming into effect either from 1 January or from 1 July 2019. We normally give at least six months for a new



*Pawan Agarwal,
chief executive
officer, FSSAI*

standard to come into force so that businesses have enough breathing time to get into the standard's regime. For example, if we notify a standard now, it will only come into effect from July 2020. In some cases, businesses request more time for transition, and we consider their requests in such cases.

Industry reaction to proposed labeling regulations

FSSAI came up with new labeling regulations that have created considerable agitation in the food and beverage industry. "These regulations bring very comprehensive changes in labeling. However, one of the most contentious issues in labeling rules is front and back labeling, which gives, based on the thresholds, color-coded labels for salt, sugar, and saturated fat."

The industry has expressed its concern about the thresholds set by FSSAI and requested it to recalibrate these levels based on Indian consumption patterns. Of the discussions held with the industry and sharing FSSAI's action plan, Agarwal said, "We are on the same page to decide minimum thresholds beyond which the food is declared or labeled as 'unhealthy.' The work includes conducting a survey on food products in the country, assessing the quantity of salt, sugar, and fat in them to judge the current reality and then taking steps towards reducing them."

Cluster approach for small food business operators

Reaching out to small food business operators (FBO) in the country is very difficult as most of them are not aware of best hygiene practices. Many have minimal knowledge that food becomes unsafe without excellent hygiene practice. FSSAI adopts a cluster approach for small FBOs rather

than tackling individual vendors.

Agarwal explained that FSSAI offers training, in case it comes across issues like availability of potable water, and lack of electricity, power supply, and waste disposal systems. It works with municipal authorities to make all these things happen.

Clean food hubs

"FSSAI has also taken other initiatives like clean food hubs, and the authority is aiming for clean and fresh fruit and vegetable markets. In all these initiatives, there is a matrix on which we measure whether they are doing all things correctly. Our inspection model includes pre-audits to find out the current situation, interventions to improve the situation, and a post-audit which is preceded by the training of the vendor as well as infrastructural improvement of that area in case required. After the post-audit, if we find them good, we declare it a clean food hub."

Food fortification

In October 2016, FSSAI operationalized the Food Safety and Standards (Fortification of Foods) Regulations, for fortifying staples such as wheat flour and rice (with iron, Vitamin B12 and folic acid), milk and edible oil (with Vitamins A and D) and double-fortified salt (with iodine and iron) to reduce the high burden of micronutrient malnutrition in India. Agarwal shared, "We are following a comprehensive fortifications strategy to promote it in the open market. So far, we have got a success rate in fortified edible oil and milk in the open market."

FSSAI has issued a notice to dairy major Amul for 'disparaging' the fortified milk segment. Speaking on this, Agarwal said, "Amul has taken an impractical view on milk fortification. Currently, 37% of packaged milk is fortified. Amul has started saying, that why do we mix vitamins in milk that are

synthetic or artificial? Amul says it believes in natural fortification. I do not know what this natural fortification is."

Food surveillance drives

"FSSAI's food surveillance happens at two levels, including inspections of food premises to see if they have systems in place and issue them notices if they have challenges and areas of improvement, and testing samples taken from food premises to find out the concerned areas. FSSAI is active in both inspections as well as taking surveillance drives," he said.

Safe and healthy food

Agarwal reiterated that the primary focus of FSSAI is to ensure that the industry produces safe and healthy food. He added, "As far as safety is concerned, there is zero compromise, as no industry wants to produce unsafe food. Otherwise, their food will not be sold. We know it is in their interest to produce safe food. We trust them, but we verify from time to time."

"As far as healthy food is concerned, it is more focused on consumers' choice; therefore, there is a lot more focus on consumer empowerment for creating a demand for healthy food. Once consumers demand healthy food, businesses will start producing it," he continued. In conclusion, the food authority expects the industry to continue to offer safe, healthier, and innovative options to our citizens! ■

The Second Packaging Design Innovation & Technology Conference



About Conference

The PDIT2 conference, will be co-organised by IppStar and Messe Dusseldorf India. It will be supported by Packaging South Asia and IndiFoodBev magazine. It will be partnered by Active and Intelligent Packaging Industry Association based in Amsterdam in the Netherlands and other industry associations. AIPIA is a key content partner for the conference.

Who will attend?

Designers, packaging developers, and product managers of global and Indian consumer product companies in the food, FMCG and pharmaceutical sectors. Influences from printing and packaging companies and converters, contract packaging and bottling companies, premedia and design companies, consumables, materials and equipment suppliers for the packaging industry.

In the first PDIT conference in Mumbai in 2016 Debabrata Deb spoke on 'Why india needs active packaging.' Will india rise to the active and intelligent packaging challenge? We are not just organizing conference but bringing the brand owners, technology providers and converters together for building a new industry!

Theme 'Squaring the Circle' of Responsible Packaging

How must the packaging industry respond to challenges of Extended Producer Responsibility?

Sessions outline

- **Brand Managers Speak** – Needs of modern brand management, design, competitiveness and consumer convenience.
- **Regulators Speak** – Imperatives of managing food waste, pack safety and Extended Producer Responsibility.
- **Celebrating Innovation** – Showcase of the best designs and technology innovations meeting current packaging needs. (In the form of case study presentations with a live jury award.) Entries are invited internationally from brands and convertors.
- **Recognising Initiative** – Presenting community and individual efforts aimed at mitigating environment litter by packaging. Honoring EPR Champions.
- **Trend Watch** – Presentation segment by raw material and machine manufacturers to showcase upcoming packaging trends and offers.
- **Open Forum** – An open mike discussion between a wide cross-section of stake-holders to highlight key takeaways of the Conference and underline challenges.

Packaging Design & Innovation



Smart
Packaging

Active &
Intelligent Packaging

Save Food &
Safe Food

Sustainability &
Waste Management

Automation &
Industry 4.0

Packaging Regulations
& Compliance

Speakers invited from

- Brand/Product Managers – Key popular brand companies, including start-ups.
- Regulators – from FSSAI, BIS, FDA and others.
- Convertors – Printers, label manufacturers and other pack suppliers.
- Community Workers/NGOs /PROs etc
- Equipment and Raw Material R&D and Business Developers.

Venue : Pragati Maidan, New Delhi

Date : 13 December 2019

Time : 09:30 am – 08:30 pm

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Thermo Scientific designs multi-frequency metal detector for checkweigher systems

Sentinel 3000 metal detector features multiscan technology at five different frequencies

A new scanning multi-frequency metal detector is designed to enable food manufacturers and food quality managers to improve productivity and maximize factory floor space by combining the benefits of multiscan metal detection technology with accurate weight control.

According to the press release, the Thermo Scientific Sentinel 3000 multiscan metal detector is the smallest model in the line of Sentinel metal detectors and mounts on the frame of Thermo Scientific VersaWeigh and Versa GP checkweighers. The Sentinel 3000 detector is the first multi-frequency metal detector specifically designed for metal detection-checkweighing combination systems in food production, providing users with improved functionality and performance in a smaller footprint than typically required with two pieces of equipment. By integrating the detector onto the checkweigher frame, the need for an external metal detector conveyor is eliminated. New harmonized Versa checkweigher software incorporates the capability to operate the checkweigher and metal detector from one screen and is designed to improve usability and reduce training time.

"Food manufacturers are increasingly adopting

Thermo Scientific Sentinel 3000 Metal Detector has a compact design



combination systems for more economical product inspection," said Bob Ries, lead product manager, metal detection and X-ray inspection for Thermo Fisher Scientific. "The Sentinel 3000 metal detector enables them to use an advanced multi-frequency technology to keep consumers safe while optimizing space. An integrated metal detector also provides superior value since the hardware is shared with the checkweigher."

The Sentinel 3000 metal detector claims to feature multiscan technology, which allows users to select up to five frequencies from 50 to 1000 kilo Hertz and scan through each frequency at a rapid rate. It effectively acts like five metal detectors in one. Multiscan is

designed with improved sensitivity to identify contaminants that are up to 30% smaller in volume than previous Thermo Scientific technologies. The technology also is devised to increase the probability that all random sizes, shapes and types of metal foreign objects are found before food products reach consumers.

The Sentinel 3000 metal detector is said to be designed for a wide range of food applications, including dairy, meat, poultry, fruit, vegetables and bread. Thermo Fisher Scientific is the world leader in serving science, with revenues of more than US\$24 billion (approximately Rs 1,69,794 crore) and approximately 70,000 employees globally. ■

New sustainable packaging solution from Uflex

An enzyme based technology for 100% biodegradable polymers/MLP

UFlex has developed a sustainable solution that was briefly presented at the recent PackPlus Conclave in New Delhi that was co-organized by Reed and IppStar. The company's continuous research to make plastics totally biodegradable and neutralise their harmful effects has led to an enzyme based technology which, quickly breaks down the molecular PE chains and biodegrades polymers back into harmless components like water, biomass and carbon.

The Flexzyme technology

The Flexzyme technology uses a complex of specific plant-based peptides and enzymes, infused into the polyolefins or polyesters, in the process of making the multilayer plastics. Flexzyme biodegrades plastic through bacterial, microbial action, moisture and heat. Polymer chains are broken down by the enzyme and bacterial processes under certain environmental conditions. The polymer/MLP will significantly biologically-degrade within a few months dependant on the prevailing conditions at end of life. They undergo a change in their chemical composition when exposed to natural conditions.

Flexzyme Technology fundamentally changes the mechanical and chemical properties of materials which lead the end product to safely biodegrade into CO₂, water, nitrates and biomass in a few months instead of hundreds or perhaps thousands of years.

Shubi Sachan, specialist and sustainable materials researcher at Uflex. Photo IFB



Uflex states, "Our biodegradable product enables polyethylene, polypropylene and polyester to decompose both in atmospheric conditions and under soil or compost, thereby releasing CO₂, water and biomass."

Biodegradable or compostable polymers are generally recognised as those which are designed to truly or significantly 'biologically degrade' through the action of living organisms. Only naturally occurring bio-chemical agents are employed to produce these biodegradable materials. These constituents react with most plastic types including LDPE, PP and PET. Uflex claims that this is a highly cost-effective, eco-friendly and most importantly a non-hazardous technology, with applications primarily for making, multi-layer packaging, carrier bags, polyethylene liners, mulch films, or any flexible packaging films.

The mechanism and design (active switch) of the technology emphasizes final product stability in use as normal but, for the product to then biodegrade (if required at end of life). Both processes are fundamentally opposites in scale and contradictory. However, in this advanced technology the activation switch process, demonstrates the conditional mechanism and start of the

biodegradation process.

When does the process start?

The UFlex' target is to standardise modified polyolefins and polyesters without compromising their basic mechanical properties and key attributes of longevity. Flexzyme technology must not be confused with, or does not rely on photo-reactive processes, such as the addition of chemical metal salts (oxo-degradable).

The Flexzyme mechanism is only activated under certain aerobic (or anaerobic) environmental and microbial conditions – namely in soil, landfill, compost or anaerobic digestion (AD). As such, the activation mechanism prevents any premature biodegradation of product in use, thus allowing the reuse and recycling of any modified product.

Flexzyme solution

1. Flexzyme is infused into polyolefins to biodegrade the polymers. The concentrations and dosage percentages will affect speed and rate of biodegradation.
2. Plastics products containing Flexzyme technology are food safe, certified according to US FDA Standard number 177.152.
3. Enzyme mediated polymer does not activate until it touches soil ecosystem, composting or the environment. Therefore, the ingredients will not affect a product either in the warehouse or its on-shelf life. Finished products will not be affected by premature biodegradation.
4. Flexzyme is suitable for use in LLDPE, LDPE, HDPE, polypropylene and PET.

In addition to ISO 17556 & ultimate biodegradability in soil, other relevant standards include:

Standard	Description	
EN 13432	Compostable packaging (includes eco toxicity, heavy metal and biodegradation)	✓
ASTM D5988	Biodegradation in soil (includes eco toxicity, heavy metal, biodegradation and disintegration)	✓
ISO 17088	Compostable plastics (includes eco toxicity, heavy metal and biodegradation)	✓
ASTM D7209	Recycling of plastics	✓
FDA 177.152	Food contact	✓
REACH Compliance	No substance of very high concern, following the EU regulation about chemicals	✓
-	Soil bacteria identification during biodegradation	✓
ISO 5402 & ISO 5403	Increase in total microbial and fungal count (CFU/g)	✓

- Flexzyme is based on organic ingredients only, contains no heavy metals or genetically modified crops and is 100% non-toxic
- Plastic containing Flexzyme can be recycled along with conventional plastic. The recycled material would then not be rendered biodegradable.

Advantages

- Flexzyme-infused polyolefins/polyesters have a much longer life and are therefore re-usable. The desired additional benefit only applies, when it is required. Uflex says that other biodegradable bio-

**The article is an edited version of a note by Jeevaraj Pillai, joint president, Packaging & New Product Development, Uflex. It was edited by Naresh Khanna editor of Packaging South Asia.*

- plastics become brittle after a few months.
- Flexzyme-infused polyolefins/polyesters can be recycled in the recycling stream with normal conventional plastics unlike bioplastics which would contaminate and lead to a poorer quality of the secondary raw material.
- Flexzyme-infused polyolefins/polyesters are cost-effective compared to other biodegradable plastics.
- The Life Cycle Assessment (LCA) of conventional polyethylene/polyester improves through biodegradation. Consequently Flexzyme-

- infused polyolefins/Polyester has a lower ecological impact than other bioplastics.
- Contrary to some other bioplastics, Flexzyme-infused polyolefin/Polyester contains no plasticizers.
- Flexzyme has no effect on the food chain and food or commodity speculators. The price is not influenced by weather or harvest speculation.
- According to Uflex, Flexzyme-infused polyolefin/polyesters are the only product in the market that covers every possible waste scenario. Uflex adds that other biodegradable options have limited end of life options. ■

Sakata INX food grade inks for food packaging

Margin pressure for both packaging and inks in India

Sakata INX is a Japanese ink supplying company with manufacturing plants in Bhiwadi and Panoli in India. The Bhiwadi plant in the North, was Sakata's first plant in India in operation from 1998 and it produces liquid inks for flexible packaging there. It also has an offset ink facility primarily for sheetfed inks and also for cold-set web offset inks in the same plant. However the cold-set offset ink production has now been shifted to the much larger Panoli plant in Western India that also supplies inks to the

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PENUMARTHI

Central and Southern regions of the country.

We met with Sakata INX India's managing director VK Seth at the company's head office building in Gurgaon since 2009. According to Seth, after demonetization, the entire economy has suffered which has especially setback the FMCG sector. Sakata India has grown since at an average of about 10% or 11%, but this is a significant drop from 15% and 17% growth of five years ago. Nevertheless the company which is a supplier to major

packaging converters has been trying to adapt and evolve to a challenging economic environment.

Profits under pressure

"However, profits have been under pressure," says Seth, "This is because of the trimmed growth of the industry. Converters ordered machines prior to demonetization and even then capacity was not fully utilized. After the demonetization there was great stress to somehow maintaining capacities. When the the

customer is running at 60% to 70% capacity, there is pressure on profitability.

"Even the packaging converter who runs a single machine or line wants to undercut the bigger converters. Moreover the bigger companies came under pressure and this took a toll on their profitability. In the same way, in inks, if there is too much capacity available, profitability comes under pressure." The selling price of inks has been under pressure. Although Sakata has grown 10% to 11%, there has been a sharp decline in profits. Flexible packaging consumes 60% of Sakata's overall ink production, while 40% is sold to offset printers including newspapers.

Sakata's food grade inks in India

Speaking of food grade inks in India, one generally refers to flexible packaging inks used in rotogravure and CI flexo presses. Sakata, on this front is ahead of the pack according to Seth, as its ink products are compliant to international norms. He says that international ink manufacturers have to rely on Japanese standards, UAPIA standard and Swiss regulations which cannot be taken for granted. While the awareness about food grade inks has recently grabbed the limelight in India, the brand managers are still only looking only at the price of ink.

"In villages, people use newspapers for packing sugar and salt and many other products that are sold loose. People don't realize how poisonous this is. The ink is used in a newspaper that is sold for Rs. 3 generally has all kinds of carcinogenic compounds. Ironically, in the same country you have people using newspapers for packaging and on the other hand you have MNCs which are looking at food regulatory compliances. This is a huge contradiction. There is a huge segment of middle and

*VK Seth,
managing
director, Sakata
INX India.
Photo IFB*



local brands that need to be reminded about the strict norms that are being or need to be followed or else the malpractices that we see are going to continue," explains Seth. Sakata is aligned with its Japanese parent to achieve sustainable development goals and its management is working day in and day out to incorporate the right technology and look at the various applications that its products can be suitable for.

Anti-counterfeit inks in demand

In the food industry, anti-counterfeiting measures with special inks are the norm and more brand owners are now asking for inks that can help them avoid counterfeit or spurious and dangerous products in circulation. Seth says, "There is more stress in the BIS regulation that there must not be direct contact. The package integrity is such that no part of the ink comes in direct contact with the packaged food. We have been coming up with toluene and ketone free inks for more than 5 years now. We have close to 45% of the market share for these inks in India."

Sakata offers inks in the food industry that are consistent throughout the run with high bond strength, low solvent-retention and no odour. Most importantly, Sakata's toluene and ketone free inks can print easily on a variety of substrates. In using these better quality inks, skill and knowledge

sharing is needed – and this is what Sakata has been able to do with its customers over a period of time.

Flexo versus gravure

India, with its 1.3 billion population is the ideal market for gravure which has been the dominant technology for packaging printing for food as well as non-food applications. "Flexo is now growing. Even though more machines are coming in, but even the converters who are importing these expensive presses from Europe and other parts of the world still don't have a clear idea about the applications in which they may come handy. Most of them are running at 30% to 40% capacity. India is primarily a gravure market and I don't see much changing in the days to come.

"Despite all the claims of flexo press manufacturers or plate manufacturers, the better print quality is still on the gravure side. It has been there for long and frankly, the brand managers have gotten used to this technology. It will be extremely difficult to shift from one technology to another especially considering that the technology has been firmly established within the country," Seth explains.

The run lengths in India are higher compared to Europe or America. Even the argument on the flexo plate making cost compared to the cylinder cost is invalid in India. "In India, if you want a substantial market share, you have to have big run lengths. Thirdly, over the past so many years, gravure technology has also evolved in India. Over time, the inks, cylinders and machines have also evolved. The traditional way of saying that flexo is cheaper, doesn't hold true anymore because if you look at the per square meter cost, gravure is more often than not able to overshadow flexo," Seth concludes. ■

Bisleri's 'Bottles for Change' initiative creates awareness about proper plastic waste disposal

Initial success in Mumbai to be taken across India

Sustainability and plastic waste management is a hotly discussed topic in India these days. Beverage major Bisleri International is one of the biggest consumers of PET and therefore is a big part of the ecosystem. To contribute its bit in addressing the issue of sustainability, the company launched the 'Bottles for Change' initiative a year ago. The initiative aims to educate citizens about the importance of recycling plastic in their lives, thereby bringing about a habit change of not putting it as a waste.

"Irresponsible disposal of waste is the biggest challenge and, unfortunately, not much focus is on users of plastic. All the talk is about waste management or how plastics are the real problem. With 'Bottles for Change' initiative we are trying to make users aware that plastic is not the problem. It is in fact collectible, recyclable and reusable. It is a valuable resource," says Anjana Ghosh, director - Marketing & Business Development at Bisleri International.

Through the 'Bottles for Change' initiative, Bisleri is trying to channelize all kinds of used clean plastic for recycling. The lighter plastic materials like milk pouches, multi-layer packets, wrappers and plastic pouches which are consumed are in much greater volumes as compared to other plastic materials. The majority of these

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items are from daily household use. Since they are thrown in the waste and are unclean, the housekeeping staff or waste pickers do not segregate them, eventually leading them to dump yards. The 'Bottles for Change' initiative is trying to create a value by urging users to collect the used plastic separately at home, clean it and segregate it, so that it can directly be sent for recycling.

"It has been one year since the initiative started and I am glad to say that it has been beautifully received by the stakeholders. We have been very successful in implementing this program in Mumbai. As more and more people realize that plastics are a valuable resource and should not be irresponsibly disposed of, we will be able to solve the problem of plastic waste," Ghosh says.

Presently 'Bottles for

Change' works in 14 wards of Mumbai and a few parts of Thane and Navi Mumbai. The stakeholders involve housing societies, corporates, schools and colleges and hotels and restaurants. 'Bottles for Change' vehicle goes for collection of used plastic from the stakeholders on a daily/weekly basis. The collection happens through plastic agents (kabadiwalas/NGO partners/recyclers).

The process starts with an awareness session with the stakeholders, enrolling them in the program, encouraging them to segregate clean plastic at home, giving it to their housekeeping and from them collecting it through Bisleri's defined plastic agents in those areas.

Over the course of last one year, through the 'Bottles for Change' program, Bisleri has

Anjana Ghosh,
director -
Marketing &
Business
Development at
Bisleri
International



managed to collect 4800 tons of plastic and recycle 1000 tons. The initiative has reached 500,000 citizens, 600 housing societies, 300 corporates, 200 schools and 400 hotels and restaurants.

Further improvements in the program

After working with various stakeholders for a year, Bisleri came across multiple challenging scenarios and ideas. Based on the experience, it has come up with

an add-on project under the 'Bottles for Change' in K East and West wards of Andheri. In the new project, it has engaged with plastic agents (kabadiwalas) for the collection process. An application has been developed through which an individual can get connected to the nearest plastic agent who then goes for collection. After collecting the plastic, the plastic agents submit to the appointed recycler through which all the collected plastic directly goes for recycling.

Taking the initiative beyond Mumbai

With the initial success of the program, Bisleri is not only planning to expand in Mumbai but is also trying to take it to other cities.

"Yes, the response in Mumbai has been very good and we have a mandate to take the 'Bottles for Change' initiative to many more cities. We are looking to take it to six or seven more cities in India in the coming future," says Ghosh. ■

Valio brings recycled plastic to food packaging

Reducing milk's carbon footprint to zero by 2035

Valio is among the first food companies to begin using recycled plastic.

According to the company, this development in packaging is part of a larger goal. The food company wants to cut milk's carbon footprint to zero by 2035.

Plastic is needed for all food products that keep for a long time, as without the plastic protection, the food would spoil before it even reaches the fridges at home. Packaging has a vitally important task – to prevent a larger environmental hazard - food waste. Plastic becomes a problem if it ends up in nature.

Every one of us can help with our actions and recycle. It's now possible to use recycled plastic in food packages. The company claims that Valio's delicacy cheeses' new packages are now made from at least 90% recycled plastic. Over 50% of Mifu slice and Mifu jauhis packages' plastic is recycled. We intend to ramp up our recycled plastic usage in the future.

"Using recycled plastic reduces the plastic industry's environmental emissions by 40 to 60% compared to making

In 2019, Valio is discontinuing its use of black-dyed plastic in Finland. Current recycling devices cannot identify the black colour, which means black plastic packages don't get recycled. (Pic courtesy - Valio)



plastic from fossil oil. Our goal is that in 2020, all Valio sliced cheese packages in Finland are made from at least 50% recycled plastic. In the future, roughly 10% of all our packaging plastic in Finland will be recycled. That matters a lot when it comes to the environment," says Juhana Pilkama, package development manager at Valio.

"Many struggles with plastic recycling and don't know where different types of plastic go." She says, "The most important thing is to recycle the plastic and it isn't that big of a deal if a package ends up in the wrong bin once in a while."

"All recycled plastic is sorted, washed carefully and checked for the material. Sorting machines handle possible mistakes, which does come with an additional cost, but that is the lesser of two evils compared to throwing all your plastic in mixed

waste. In the future, we intend to clarify the recycling instructions we print on our packages to make recycling easier," says Juhana Pilkama.

From plant-based packages to recycled plastic

In 2015, Valio introduced 100% plant-based cartons to Finland's stores. These cartons are made out of wood, and the thin protective plastic film from the sugarcane industry's waste. The caps are also fully plant-based.

"Packages have an environmental impact of only 2% of the entire food product's environmental load when it comes to carbon dioxide. Despite that, we want to reduce our packaging's environmental load further. At the same time, we are working with dairy farms, among others, to reduce milk production's climate emissions," says Pilkama. ■

Greater F&B processing to increase demand for packaging

**Shiva Mudgil of Rabi Bank India –
“Flexible packaging will be the
dominant format”**

Greater processing in the food and beverages segment in India will lead to increased demand for packaging, especially flexible packaging, Shiva Mudgil of Rabi Bank India said at the 8th Speciality Films & Flexible Packaging Global Summit 2019 held in Mumbai on 22-23 August.

“The aggregate, average level of processing of agricultural produce is less than 10%, with the existence of large, unorganized businesses in most of the food and agriculture sectors. This is very low compared to global standards. As more and more processing takes place, it bodes well for the Indian packaging industry,” Mudgil said.

“The share of the organized market is still quite small, even in key sectors like dairy (24%) or poultry (less than 10%),” he added.

“The packaged food and beverages industry in India is estimated at US\$ 97 billion and is expected to grow at 11.8% CAGR value for the next five years. Processed food consumption in India is less than 10% of the total food consumption,” he said. With increasing urbanization, changes in lifestyle and rising annual disposable income, demand for processed food will grow which will lead to higher demand for packaging.

The use of consumer food

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and beverage packaging in India is expected to grow at a CAGR of 6.4%, from 196.7 billion units in 2017 to 268.8 billion units in 2022, Mudgil said citing data from GlobalData. “Within this segment, flexible plastic packaging has captured the lion’s share: 68% in 2017,” he added.

“Flexible packaging is growing, owing to its inherent advantages of increased convenience, longer shelf life, lighter weight and lower cost versus other packaging materials. The expected rapid shift in some food categories – for example, rice, wheat flour, and pulses – from loose to packaged, will boost further growth in the flexible packaging segment. As a result, growth is also expected to continue at a faster pace than for other packaging materials, such as

rigid plastics, paper-based, metal and glass,” Mudgil said.

Shifting consumption trends from loose to packaged food and then to convenient packaging will also drive demand for flexible packaging. Milk, spices and baked foods are the three main products that will see the biggest shift from loose to packaged, Mudgil argued.

Hectic M&A activity ahead

Mudgil also talked about trends in merger and acquisition activities in the Indian flexible packaging industry and said that hectic action will be seen at the converters’ level.

“Indian packaging industry is quite M&A intensive largely driven by inbound investment, especially at the converters’ level. This trend will continue in the future as well, due to the fragmented nature of the industry. Acquisitions are likely to be driven by global players,” he said.

Outbound investment will be driven primarily by Indian packaging film manufacturers who want to diversify into value-added products. “We will see outbound interest from Indian companies who are looking to diversify outside of India, develop international footprints and gain foothold into the value-add segment. This trend will most likely remain limited to large film manufacturers,” Mudgil said. ■

*Shiva Mudgil of
Rabi Bank India
speaking at the
8th Speciality
Films & Flexible
Packaging
Global Summit
2019. Photo IFB*



BillerudKorsnäs invests in recycling

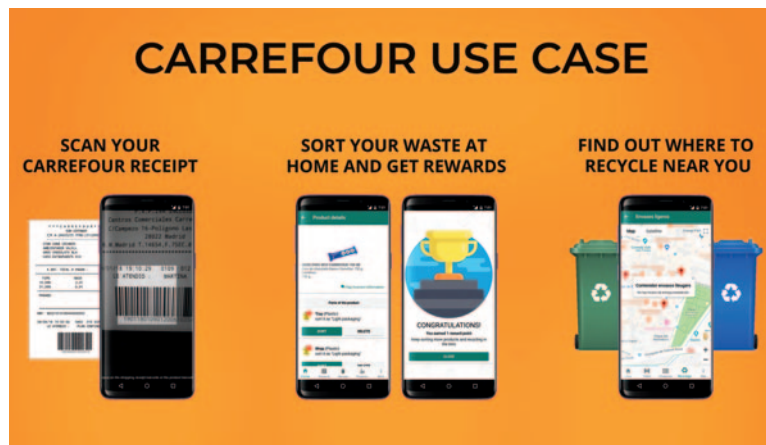
Company Recycl3R strategies to increase recycling ration of single use packaging

BillerudKorsnäs invested in recycling with the acquisition of minority holding in the innovative company, Recycl3R. The company has developed a digital solution to increase recycling rates of single use packaging. The investment is made by BillerudKorsnäs' wholly owned subsidiary BillerudKorsnäs Venture AB, which invests in young and innovative companies with solutions that will influence the future for packaging.

Waste production is one of the largest environmental problems that society faces today, and solving it is a big challenge. In Europe alone, 240 million tons of waste is produced but only 44% of it is recycled. Ivan Gonzalez, environmental lawyer and co-founder of Recycl3R said, "BillerudKorsnäs shares our vision of solving this global challenge and is an excellent partner and investor for Recycl3R."

Recycl3R builds a database with information about the packaging material used for different consumer products. The company also understands the different recycling regulations and requirements around the world. This knowledge is used to guide consumers to the nearest recycling station and help them recycle correctly. The solution also makes it possible for producers and distributors to give consumers incentive to

BillerudKorsnäs shares our vision of solving this global challenge and is an excellent partner and investor for recyc3R", says Iván González, environmental lawyer and Co-founder of recyc3R.



recycle more with gamification and by connecting value such as deposits or loyalty points to the different packaging materials.

The Recycl3R team has a background in environmental consulting, and the system was developed partly within the European 'TagitSmart' project. It has caught the interest of international retailers and brands with a mission to get more material back into recycling streams. Carrefour Spain has implemented the solution.

Martin Neselius, Venture manager at BillerudKorsnäs Venture says, "Packaging recycling is an area that we believe will be increasingly important in order to solve the environmental challenges ahead. Sustainability and digitalization connected to packaging are strategic focus-areas for BillerudKorsnäs Venture, and Recycl3R presents a very interesting opportunity based on their combined expertise in both areas.

"There are already steps taken towards legislation and restrictions regarding single use products, and we believe this development will continue. There is still a lot of work to do in order to ensure that more packaging enters the recycling stream and is recycled into new products. Recycl3R's product supports increased and cleaner recycling streams for this purpose."



KB Associates launches Quadra Fill at PackPlus Expo

Drum and barrel filling machine with machine vision

Ahmedabad-based KB Associates is a manufacturer, supplier and exporter of a wide range of liquid filling and bottling lines. During the recently held PackPlus Expo 2019 in New Delhi, the company launched Quadra Fill – an automatic barrel, drum, intermediate bulk containers (IBC) filling machine with a machine vision.

Speaking about the machine, Amit Mahant, general manager - Marketing at KB Associates said, "Quadra Fill is a fully automatic and smart filling system on a pallet, composed from a co-ordination of multi-axis and auto-positioning of filling lance and bunghole using high MP industrial-scale camera with integrated SCADA software for operations. Automation is done keeping in mind speed and accuracy of filling drums, barrels and IBC's given high yields."

The machine can be used for various applications in the food industry (all types of oils, butter oil, edible oil, glycerin, liquid glucose, starch and alcoholic beverages), chemical and petrochemical industry (liquid fuel additives, lubricant oil, liquid paints, solvents, liquid fertilizers, fungicides, detergents, thinner, varnish and wax) and other industrial segments (adhesives, chemicals and construction materials).

MANDEEP KAUR

Amit Mahant, general manager - Marketing with his team at KB associates (second from right). Photo IFB



Technical specifications and key features

Explaining the key features of Quadra Fill, Mahant said, "The Quadra Fill has an industrial-grade camera, which ensures complete machine vision. The camera scans all the drums, barrels and IBC bungs at one go to automatically align filling lance while the bunghole gives speed and accuracy with no human intervention,"

The machine also offers features such as overfill detection, recipe-based filling height as per container size, flow rate control for coarse and fine filling operations, filling cycle history with reports, less changeover time as well as high reliability and durability of the equipment.

According to Mahant, the machine can fill steel barrels and plastic drums of sizes ranging from 20 liters to 250 liters and IBC up to 1000 liters on pallets with its auto-adjustable filling height for filling containers of different sizes with a drip-free nozzle.

Addressing the challenges faced by the industry with bulk filling, he said, "Earlier, for bulk filling of more than 20 liters of liquid, people were using hand-pumps which required manpower. This machine runs on a microprocessor controller, which solves this problem, as it fills as per the customer's requirements like 100 liters, 105 liters or even decimal size. Moreover, this machine does not require any manpower and can fill containers one by one."

Solutions based on customer's requirements

Based on customer requirements, the company offers turnkey project solutions including high speed filling and bottling line for glass and PET bottles, batch code printing, labeling and shrink wrapping that helps save filling and bottling time and allow customers to convey the final product with better aesthetic

Quadra Fill, an automatic drum and barrel filling machine with machine vision displayed at Packplus Expo, New Delhi



look and hygienic conditions. The package is also leak-proof, easy to handle, storage and transport.

According to Mahant, he is receiving many queries regarding the machine and he see good demand for it going ahead. Adding to the company's offerings to its customers, he said, "We offer our customers a solution based on their budget requirements and as well as depending on their competitive needs. For example, they can choose a fully automatic line or a semi-automatic line. In addition, we also offer customized options like an anti-explosion version for hazardous areas, customized filling nozzles, CIP cleaning system and conveyor belts for movement of pallets to make it fully automatic."

Mahant shared that KB Associates is among the few leading companies in India with a capability to provide turnkey solutions for beverage and non-beverage production lines. He said, "We have a team of experienced and dedicated professionals for customer support and after-sales service that make our projects a big success. Our machines are technologically advanced to provide productivity in terms of space utilization, maximizing output and simplifying changeovers, accuracy, efficiency and repeatability."

He added that the company has sold a couple of machines recently to MNCs located in India and these companies have also shown interest to order these machines for their overseas locations. ■

HMPL offers a gateway to liquid packaging solution

Filling solutions for water to honey – liquid of varying viscosity

Ahmedabad-headquartered HariKrushna Machinotech (HMPL) is a 19-year-old organization having more than 8000+ installations in around 49 countries including India. The company is a manufacturer and exporter of advanced liquid packaging and processing machinery for pharmaceutical, food and beverages, cosmetics, distilleries and other liquid-based manufacturing industries.

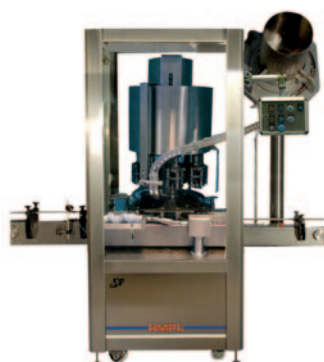
Free-flowing aqueous to viscous liquids

Speaking about the company Maulik V Dave, managing director at HariKrushna Machinotech said, “We are the leader in the liquid packaging segment. Since our establishment, we are focusing on the liquid segment. Today we offer our packaging solutions to pharmaceuticals, dairy, beverages, cosmetics, pesticides, edible oil and other liquid products manufacturing industries. Our solutions are useful for free-flowing aqueous to viscous liquids with a volume range between 0.1 ml and 5 liters.”

Dave further added that the company also offers complete packaging lines based on the need of customers. These include washing machines, filling machines, capping machines, labeling machines, shrink sleeve applicators, measuring cup placing machines and packing conveyors.

MANDEEP KAUR

*Maulik V Dave,
managing
director at
HariKrushna
Machinotech*



*Automatic Cap
Sealing
Machine*



*Automatic Six
Head
Volumetric
Filling Machine*



*Four head servo
filling machine*

Filling systems

Several innovations are taking place in the filling system segment. Dave shared that HMPL offers automatic and semi-automatic filling machines, for example, vacuum filling machines, timer filling machines, peristaltic filling machines, piston filling machines, volumetric liquid filling machines and filling machines with servo system. Explaining the filling machines with servo systems, he said, “This machine is user-friendly and requires very less maintenance because of less usage of the mechanical part. It can fill volumes from 10 to 1000 milliliters without changing part of the syringes, with a viscosity of water to honey.”

Capping and sealing

According to him, HMPL is a leading manufacturer and supplier in the liquid packaging segment and capping machines in India. The company offers capping systems such as automatic rotary or screw capping machine, vial capping machine for aluminum cap sealing and flip off cap sealing, automatic bottle capping machine and induction cap sealing machine. The capping machines claim to give an output speed of 40 to 150 BPM/VPM while the sealing machine claims to give an output speed of 20 to 30 seals per minute for semi-automatic and 90 to 120 seals per minute for automatic.

Speaking about the affordability of these packaging

solutions, Dave said, "Every industry is looking for reasonable and cost-effective solutions without compromising on quality and getting a good output speed. We take care of all these parameters and because of this HMPL is getting repetitive business from the last 18 to 19 years."

Safety comes first

Commenting on the safety and quality parameters of the HMPL machines, Dave said, "Since the inception of our business we have kept our focus on all the quality aspects. We follow all guidelines for good manufacturing practices. Safety is the first feature for our team. Today, customers are looking

for automatic solutions that require less labor. We use latest technologies in our machines to map the quality of the machine as well as consumers' requirements."

He further added, "We are using high switching frequency fiber optic sensors in our machines. To ensure human safety we take care of all the operating parts which should not be open. We cover all those parts and measure the quality parameters for the same."

HMPL is the first company in the liquid filling segment who has received CE certification in 2001 and they are maintaining it and moving ahead with all these certifications.

Clients and vision

The company started its business in 2000 with a sticker labeling machine. Commenting on the future vision, Dave said, "We want to develop high-end, high-speed machines using the latest technologies."

The company is managing a huge client base in pharmaceutical, food and beverages, cosmetics and distilleries. This includes Dabur, Carlsberg, MTR, Amul, Glenmark, Dr Reddy's, Cipla, Britannia, Sun Pharma and more. ■

KHS to exhibit smart beverage filling systems at the BrauBeviale trade show, Germany

New glass filler platform sets standards in efficiency

KHS is exhibiting intelligent beverage filling technologies at the BrauBeviale trade show in Nuremberg, Germany from 12 to 14 November 2019. The new high-performance KHS glass filler claims to have a capacity of up to 80,000 bottles in an hour. According to the press statement, with this new glass filler, KHS is aiming to help the beverage industry move towards more efficient, more sustainable and increasingly digitized beverage production.

In November the international beverage industry will again meet in Nuremberg. At this year's trade show KHS' main focus will be on process efficiency, digitization and saving resources. Johannes T Grobe, chief sales officer at Dortmund machine and systems manufacturer says, "The entire production process

A new high-performance glass filler with a capacity of up to 80,000 bottles per hour will be the center of attention at KHS' trade show booth



is becoming increasingly smarter. As a trusted and reliable partner to the beverage industry, we're applying our extensive experience and line expertise to cater for this development. At BrauBeviale we're thus presenting intelligent technologies which will map out the direction KHS will take both now and in the future."

Considerable savings in energy and resources

KHS will be showing the new generation of glass bottle fillers

to the public for the first time at the exhibition. With it, the turnkey supplier is consistently advancing its aim of continuously reducing the amount of energy and resources consumed within the beverage industry. Among other features, the filler claims to have a unique ECO system and special evacuation and CO₂ purging process for glass bottles. With this, the system uses up to 50% less CO₂ compared to conventional methods. KHS has also cut the

energy consumption by a maximum of 20% with its optimized vacuum pump.

"The protection of the environment is one of the determining issues of the moment. We thus offer our customers systems which specifically make their production lines sustainable and efficient," explains Grobe.

Smart KHS systems noticeably optimize production processes

The press release also mentions an important role played by smart engineering which noticeably simplifies, optimizes and automates production processes. To quote one example, a diagnostic assistance system monitors the entire filling process to the evacuation and CO₂ purging processes, for instance, to considerably minimize the amount of oxygen pickup. Broken bottles are also detected in all filling phases and containers automatically channelled out of the system. "We're constantly improving the efficiency of production processes. This, in turn, brings

This year KHS is making process efficiency, digitization and saving resources its prime focus.



about a clear improvement in the line performance," Grobe states.

Commitment to sustainability

In the future, too, one of KHS' prime concerns is to significantly reduce our carbon footprint. Service plays a central role in the persistent pursuit of this goal. KHS enables its customers to operate systems for as long as possible and keep them in line with the latest technical, economic and ecological state of the art. Its bottle washing machine optimization program is exemplary in this respect. This aims to successively lower the

amount of water and energy the bottle washers use.

In this context, the Dortmund engineering company provides various smart service packages from the capacity-dependent freshwater controller to weight-optimized bottle pocket carriers. "We take a holistic view of our customers' production and maintenance processes. With our extensive service program, including line optimization measures to boost efficiency and throughput, together we find the best possible solution and in doing so also help protect the environment," declares Grobe.

KHS is exhibiting its plant engineering in Hall 8. ■

All-in-one Visitron Filler on its way to Australia

GEA's smart solution reduces the time for reconfiguring complex filling equipment

GEA will present its efficient, multifunctional processing technology for the beverage industry at this year's leading trade fair, BrauBeviale, in hall 7 under the motto – 'Refreshingly Different'. The GEA Visitron Filler all-in-one will be on display, which can fill bottles, cans and PET containers on a single filler. BrauBeviale in Nuremberg is a short stopover for the filler before it continues

on its way to Australia – where GEA customer, Australian-owned Moon Dog Craft Brewery, is eager to integrate the ultra-flexible filler into its new plant.

Originally set up in the Melbourne suburb of Abbotsford, Moon Dog has now outgrown that facility and is on the move to Preston where the team has just opened a 12,000 square meters facility. The site claimed to house a unique 725-person venue with a large new brewing facility about to be commissioned, which will allow

them to produce over 10 million liters in a year. Moon Dog is known for pushing limits with beer styles and flavors and according to the press release, the new facility with a designated souring kettle will allow them to continue to diversify and grow market share within Australia and globally. Seeing the need to bring more efficiency into its processes, Moon Dog ordered a GEA Visitron Filler all-in-one in August 2019, as well as a water deaeration system Varidox, a Dicar-B carbonation system, an

eco-flash pasteurizer, and a Plug and Win 100 centrifuge from the technology group.

Sustainable bottling and canning

Breweries are particularly interested in GEA Vipoll filling equipment because this sector typically has the highest demand for glass bottles and cans. Customers benefit from GEA's commitment to support and improve production processes end-to-end, from brewing to bottling and storage. Likewise, GEA offers many solutions to help breweries lower their CO2 emissions, which is critical for helping this high-consumption sector meet the ambitious climate protection goals it has set for itself. Highly efficient manufacturing, as well as responsible packaging methods, are therefore key, which means glass containers and cans will play an even greater role in global environmental strategies; refillable bottles will become a cornerstone of reuse initiatives and cans a valuable recyclable material.

One for all

GEA Vipoll developed the all-in-one monoblock filler that is claimed to be a direct response to sustainability requirements and is a prime example of just how lean and flexible filling solutions can be. The compact all-in-one rinses fill and caps products all within a small production footprint. Its sophisticated process design claims to save time during filling and format changeovers; within a matter of minutes, the machine can switch to handle different products and container formats. This is made possible by the all-in-one's multifunctional elements - the rinser is equipped with universal grippers; the filler uses an electro-pneumatic filling valve and a single capping turret can accommodate different closure types.

Moon Dog uses GEA Visitron Filler all-in-one as well as a water deaeration system Varidox, a Dicar-B carbonation system, an eco-flash pasteurizer, and a Plug and Win 100 centrifuge



"We chose GEA because the company has a great reputation for manufacturing high-quality machines. The all-in-one filler allows us to operate a single filling line for both cans and bottles with quick change over between formats. This gives us benefits in terms of floor space utilization and simplicity in maintenance and operation," Josh Uljans, co-founder and chief executive officer at Moon Dog Craft Brewery said.

Jakob Salamun, sales manager at GEA Vipoll said, "The all-in-one's multifunctional system is unique in the world because it allows for an unprecedented level of flexibility; it can be used to fill glass, cans and PET containers; handle different formats and seal them with diverse cap types. It can fill carbonated or still drinks, using a hot or cold fill method." ■

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At KHS, we are thus always proud of what we have achieved – but we also immediately start to question it and think ahead. With the aim of constantly advancing and always improving – and of providing our customers with new, intelligent systems time and again. Which we then, of course, develop further. khs.com/products

K-Show 2019
October 16 - 23
Hall 13 | Booth A75

Artificial Intelligence in logistics improves customer X

AI can save time and cost

According to research reports, expenses incurred by the logistics industry currently account for 14% of the GDP of India, a figure higher than other developing nations. The reason is high transportation costs, minimum integration of information technology in the infrastructure and poor material handling methods. Consequences include lack of customer satisfaction and poor inventory control and manpower deployment.

Artificial Intelligence in logistics

Artificial Intelligence (AI) is an area of computer science that creates intelligent or automated machines to tackle some of these problems. At the very least it can help to analyze the bottlenecks and constraints in a given system.

Booking orders – An AI bot¹ can be used to read emails and classify them according to departments for example if a booking order is made via a bot, an automated tool can book the shipment and forward the to the appropriate operations team or teams and periodically enquire if action has been taken.

Reduces manual work – Any escalations in the supply chain can also be dealt with by AI, which can route the emails to concerned departments so that escalation management is done within the agreed service-level

ABHILASH REDDY
YERASI

Ezyhaul's digital road freight platform offers easy bookings for B2B domestic shorthaul, longhaul and cross-border shipments



agreements (SLAs) and estimated time of arrivals (ETAs). This can save approximately half of the manual work.

Monitor sales – AI can also be used to draw up a mathematical relation between variables and the target. This predictive analysis can be used to monitor sales. Generally,

sales leads are managed and monitored in customer relationship management (CRM) systems. With AI, it is possible to predict the likelihood of converting a lead into a sale, which will help predict the future revenue of the organization and improve weak leads.

Freight prediction – AI can also be used for freight



used to make accurate predictions after analyzing the effect these factors have on freight movement.

Major costs are incurred during the transportation of freight, which is a time-bound process. By implementing AI, costs can be cut by predicting the shortest and quickest routes after analyzing real-time traffic, capacity planning, and delivery schedules.

Driver safety – During transportation, the safety of drivers is extremely important. A study by the Central Road Research Institute states that 40% of accidents are caused by exhausted drivers who sleep at the wheel. Computer Vision, which helps computers see and understand digital images, can be used to improve driver and road safety. A security camera can be implanted in the driver's cabin, which will ring an alarm if his eyelids close beyond a specified time.

Delivery – The last phase of transportation, last-mile delivery, has a direct impact on the customer experience. Normally, a customer service executive monitors the process and predicts the ETA based on available dynamic data. With AI, it will be possible to leverage all data platforms and create datasets that will regulate patterns and anomalies. Artificially intelligent drones can

also be used in some cases to improve last mile delivery.

Saves time in acceptance process – After the cargo is delivered to the customer, it is checked for any damage that might have occurred during transit. If the damage is within permissible limits, the customer will accept the cargo. If it is beyond these limits, it will have to undergo a predefined process that requires multiple approvals. This leads to a decision-making gap. Computer vision can be implemented to train the model to tell if the damage is within feasible limits or not, hence, saving valuable time.

If AI is implemented in all stages of the supply chain, a significant decrease will be seen in the expenses incurred by the logistics industry.

Abhilash Reddy Yerasi is a manager - Implementation and Analytics at Ezyhaul. Bengaluru-based Ezyhaul, founded in 2016, is a log-tech startup company. It has offices in Singapore, Malaysia and Thailand. Recently, the company has received a series B funding of US\$ 16 million (approximately 100 crore) to further grow its digital freight and logistics management solution in South Asia. ■

Glossary: 'A bot or chat robot is a computer program that simulates human conversation or chat through artificial intelligence

prediction, which is normally tricky as factors like road conditions, zones, weather conditions and seasons affect freight movement. Manual prediction is tedious while machine learning can be used to simplify the estimates. Machine learning is the part of AI that recognizes patterns in data and makes observations. It can be

Pic courtesy – Ezyhaul



Toppan and Amcor combine to supply InTact

Capsule for wine and spirits with integrated NFC tag

Toppan Printing, a global leader in communication, security, packaging, décor materials, and electronics solutions, and Amcor, a leading global packaging company, have recently announced an agreement to collaborate on providing an anti-counterfeiting solution for the wine and spirits markets.

According to the press release, two companies have combined Toppan's strength in the development of near field communication (NFC) tag-based high-security technologies with Amcor's manufacturing and supply capabilities to develop InTact, a capsule for wine and spirits with an integrated NFC tag that detects opening or tampering. Practical testing of InTact at a French winery commenced in late 2016 and the creation of a robust supply chain has now enabled the launch of full-scale sales. Toppan and Amcor will be offering InTact as a high-security solution to combat damage caused by counterfeiting in the market for alcoholic beverages.

The NFC enabled capsule claims to represent a high-security closing solution to help prevent fraudulent refilling and grey market diversion of original bottles, which was a growing problem in the wine and spirits industry. The combination of Toppan's original antenna structure and an integrated circuit (IC) chip with a break detection circuit enables breakage or tampering with the capsule to be detected. As the

The InTact capsule incorporates an NFC tag that detects breaking and can be authenticated using a smartphone



capsule claims to store a unique digital certificate to authenticate the bottle, it can also be used for targeted sales promotions and various consumer engagement campaigns.

The NFC tag is discretely integrated with the inside of the capsule, allowing alcoholic beverage producers to adopt it with minimal change to their existing filling and packaging process. Most capsules for premium alcoholic beverages are made from metal, but because metal tends to interfere with the RFID tag's radio wave communication, Amcor has developed a new capsule with a unique structure combining metallic and non-metallic films. The capsule claims to enable wine and spirits producers as well as final consumers to confirm each bottle's authenticity with the tap of an NFC-enabled smartphone.

Commenting on this Nicolas Freynet, general manager at Amcor Capsules said, "Our customers have an ever-increasing demand for functionalities such as product authentication, opening detection, and consumer engagement and we have been working to develop a capsule construction that can incorporate an NFC tag with seamless communication."

"Toppan has been

developing RFID tags for wine and spirits since 2014. A thorough understanding of the market and extensive insight regarding customers are required to enable propositions that ensure customers are able to make full use of RFID tags," said Yoshiyuki Mizuguchi, general manager - Global Business Development at Toppan's security products business.

Toppan showcased the InTact capsule developed with Amcor as well as other cutting-edge solutions at Luxe Pack Monaco, the premier show for creative packaging, at the Grimaldi Forum held from 30 September to 2 October 2019. ■

Learn more about active and intelligent food and beverage packaging at the upcoming Packaging Design Innovation and Technology conference (PDIT2) on 13 December 2019 at Pragati Maidan, New Delhi, India. The conference will be co-organized by IPPStar and Messe Dusseldorf India and it will be partnered this time by the Active and Intelligent Packaging Industry Association (AIPIA), Netherlands.

<https://ippstar.org/2019/08/27/the-2nd-packaging-design-innovation-and-technology->

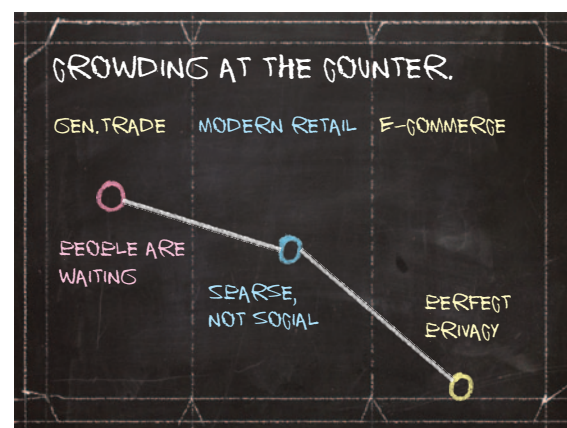
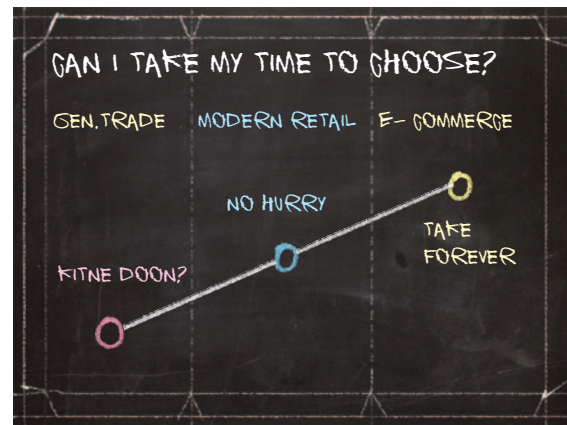
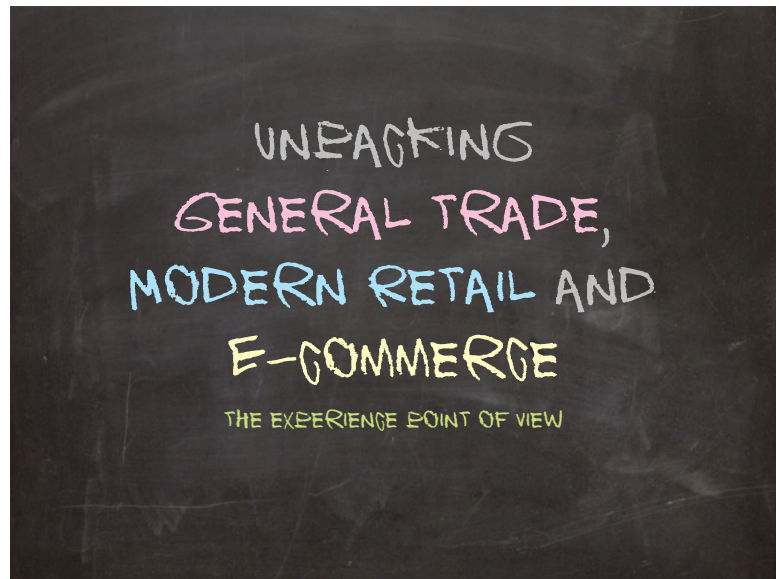
The customer experience

At a conference alongside the PackPlus exhibition in Pragati Maidan a few years ago, ITC Chaudhuri of ICD made an interesting presentation about packaging in the fast changing retail scenario in the country.

He began by characterizing the consumer's or our own experience in the three retail formats – general trade (the local karyana store); modern organised retail (hypermarket or supermarket); and eCommerce. Projected below is a rough approximation of Chaudhuri's remarks.

At a general trade store, a shopper has little time to choose from what the shopkeeper shows from his limited stock. A buyer cannot effectively compare two or more products. On the other hand, the modern supermarket has an abundance of options neatly shelved to choose from.

eCommerce, on the other hand, can be the ultimate time saver and convenient format since the buying decision can be from anywhere and the product is delivered anywhere. It can also be the ultimate time-killer; you can browse for months and never buy. eCommerce allows the buyer to virtually see the product and not just the packaging. Price, details and specifications provided by the seller under the image of a product, together with customer reviews make effective objective comparison possible. Comparative tools are also provided. In recent years eCommerce has become even more clever.



The general trade store can at times be a less than pleasant experience as customers compete with each other to complete their transactions in a smaller space and with a single cashier. Whereas, modern supermarkets have multiple

counters with conveyors, barcode readers and self-checkout systems aimed at multiple product transactions at high speed. eCommerce transactions are only limited by the conveniences and irritations of digital payment methods.

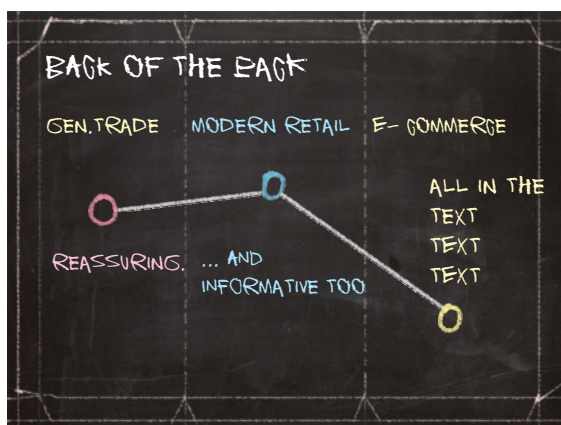
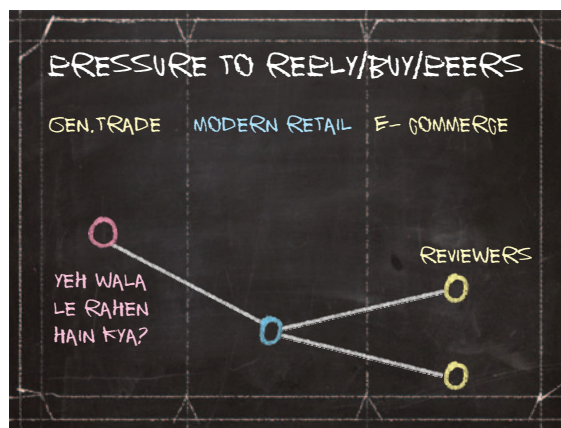
The pressure to buy, and the salesperson's influence is highest at a general store. Since there is little privacy, there can occasionally be some peer pressure. Modern retail is generally free from overt influences apart from the strategic positioning on the shelf or connection with media advertising. Special offers can of course also influence.

Online, one can read product reviews. Advertisers' products are listed first. However, the strategic placement fails if a buyer decides to browse through the complete list of products. Professional customers will even go and examine the product in a brick and mortar store and then shop online for the best price.

The information provided on the back of the packaging functions as a reassurance tool in a general trade shop. It assures a buyer of its authenticity and ingredients. In a modern retail store, the information provided on the back of a product is the only source of information about the product and is highly essential in closing the purchase. However, in the eCommerce scenario, a customer mainly has to rely on the text provided in the description.

Chaudhuri presented his 'hypotheses for modern retail.' According to him, effective packaging makes "modulated shelf throw permissible." It will catch the eye of a customer from afar and has the capacity to stand out from rival products, a prerequisite in a modern retail store. In the absence of salespersons in modern retail, the product has to provide a "deeper narration" of its origin and manufacturing. "Disruption can be amplified by clever packaging in modern retail."

Continuing the hypotheses, Chaudhuri remarked that the correct use of design, shape,



color and special effects of packaging can evoke the appearance and feel of a premium product. Modern retail also gives play to bulk packaging of a product with strategic design and pricing; they appear more attractive in terms of cost and utility. Smaller counterparts may stand out for their convenience. Large units also allow additional information to be portrayed on the packaging opening up opportunities for brand owners in modern retail.

Chaudhuri explained a couple of hypotheses for eCommerce as well. When considering eCommerce, the impact of packaging is diminished since the option of touch-and-feel is missing. Small pictures displaying big brand units may work well for retailers in eCommerce. Since the photo of a product on an online store

may not be clear, there is a need for "compelling facts" to be put in the description to help the buyer understand the product.

eCommerce provides an even playground for big and small producers and retailers alike. A small business can compete with comparatively larger businesses. Chaudhuri said that it is possible to narrate a compelling brand story through visuals and graphics on packaging.

Lastly, he emphasized on packaging basics. Unique shapes of containers and distinct typography can play an important role in creating brand identity. Quality marks on packaging convey the authenticity of a product and encourage trust. eRetailers can emphasize quality marks in their product photos on an online store to prove the authenticity of their product. ■

Itu Chaudhuri is a principal at ICD who writes broadly on design, taking in connected subjects. Sometimes he will offer a way of thinking about problems clients may be facing, and sometimes propose new problems. He promises not to say 'design thinking' unless it's a takedown. <http://icdindia.com/>

Mondelez India launches Cadbury Dark Milk

A new chocolate taste

Mondelez India has introduced a new taste experience to its bouquet of premium chocolates with Cadbury Dark Milk. Cadbury Dark Milk is bringing a new taste to the world of chocolate with a superior product experience for those with sophisticated and matured sensibilities. Aishwarya Rai Bachchan is the face for Cadbury Dark Milk in India, who further reaffirms the company's commitment to defining the evolving taste of chocolate for a more progressive consumer by providing them with a choice while creating new experiences.



Cadbury Dark Milk claims that it appeals to an advanced, matured audience who enjoy varied experiences in their 'me time' indulgent moments. According to the company, Cadbury Dark Milk will help to grow the chocolate category through premiumization. Also, the sweet spot between milk and dark chocolate, Cadbury Dark Milk claims to offer a smoothly intense and good taste.

Anil Viswanathan, director - Marketing (Chocolates) at Mondelez India said, "Mondelez India sees a major opportunity in developing a new taste experience in the chocolate category and Cadbury Dark Milk gives us the first-mover advantage of becoming the category innovator. Our brands play a special role in people's lives. Cadbury Dark Milk is a unique product that offers a heightened delight of grown-up chocolate."

Speaking on the association, Aishwarya Rai Bachchan said, "It is a privilege to be a part of Mondelez India's new category innovation with Cadbury Dark Milk. Cadbury has always given us a reason to enjoy chocolates the way we like it. Cadbury Dark Milk is a new, premium taste that will surely appeal to chocolate lovers. I like its special packaging and most of all I love the taste, it's richer, darker, creamier. It has been great fun working on this campaign and I am very excited to share this experience with you and see it come to life!"

The launch of Cadbury Dark Milk will be supported by a 360-degree communication campaign which will include a new TVC, innovative outdoor and digital campaigns and strong in-store visibility. Priced at Rs 99 for 72 grams available in Original – Rich & Creamy variant and Rs 199 for 156 grams available in Original – Rich & Creamy and Salted Caramel – Rich & Creamy variant. ■

Mondelez India launches new dark chocolate to empower Indian consumers with more choices and a new eating experience (pic courtesy - Mondelez India)

Protinex Kesar Badam claims traditional Indian goodness with nutritional benefits while addressing needs of the Indian consumer (pic courtesy - Danone India)

Danone India launches Protinex Kesar Badam

Exclusively for Indian palates

Nutricia International (Danone India), with its mission to deliver health through food to as many people as possible, has announced the launch of Protinex Kesar Badam in September. According to the company, this new launch is a salute to the rich heritage of India and its vibrant tradition with special ingredients like Kesar Badam for wellness and health. Protinex has been addressing the protein needs of Indian consumers for six decades. Launch of Protinex Kesar Badam is claimed to be the brand's constant endeavor to serve the Indian consumer with innovations that resonate with them emotionally, strengthening the promise of daily nutrition suitable for the local palette.

Speaking about the launch of Protinex Kesar Badam, Deepali Agarwal, marketing director at Danone India said, "At Protinex, we focus on innovation by anticipating the nutritional needs of consumers in the Indian market. With this launch, Protinex aims to address protein deficiency among Indians by providing palatable solutions that resonate well with the local choices. Kesar Badam doodh creates a sense of nostalgia and is an all-time favorite for most Indians. Kesar is one of the rarest Indian spices with multiple health benefits while Badam is known to build immunity and is well known in Indian households. Protinex Kesar Badam is not just a flavor, it is an emotional bond with our consumers."

Protinex believes in innovation and makes constant efforts to appeal to the evolving Indian palate. With back to back recent innovations of Protinex Mango and a Zero Sugar offering, the brand's aim is to offer tailored solutions to cater to customized nutritional preferences. Protinex Kesar Badam is the latest addition to the Protinex portfolio. It is available in 250gm and 400gm packs and is priced at Rs 350 and Rs 560 respectively, available in leading modern trade stores and eCommerce platforms. ■



Ball launches recyclable aluminum cups

Sustainable beverage packaging solutions

Ball Corporation, a supplier of innovative, sustainable packaging solutions for beverage, personal care and household products, has recently announced the launch of a pilot of infinitely recyclable aluminum cups. The US Ball has developed the aluminum cup over the past several years as an

alternative to plastic cups for use at home and in other areas where plastic cups are common, including indoor and



Ball has developed the aluminum cup over the past several years as an alternative to plastic cups for use at home and in other areas

outdoor venues across the country. The pilot will produce a limited supply of aluminum cups through 2020 for use in such locations, which include entertainment venues and major concessionaires.

Commenting on the new launch, John A. Hayes, chairman, president and chief executive officer said, "As our customers and consumers increasingly seek sustainable beverage packaging options, the launch of the aluminum cup is a significant moment for our company. It is our responsibility as a leader in aluminum beverage packaging to continuously innovate and provide solutions for our customers. We're excited to bring the aluminum cup to market and expand the product line next year and beyond."

In September 2019, Ball will roll out a number of pilots with major venues and concessionaires across the US to replace their plastic cups with aluminum cups. Ball's research shows that 67% of the US consumers say that they will visit a venue more often if they use aluminum cups instead of plastic cups and that 78% of consumers expect beverage brands to use environmentally friendly containers in the next five years.

According to the company's statement, infinitely recyclable and economically valuable, aluminum is the most sustainable beverage packaging material and, like aluminum cans, aluminum cups can be easily recycled. In fact, 75% of the aluminum ever produced is still in use today.

In addition to its sustainability and recycling strengths, the aluminum cup is sturdy, durable and cool to the touch, and it can be customized with logos and graphics. The cup is currently available in a 20-ounce (approximately 550 grams) size and Ball aims to introduce additional sizes in the future based on market demand. Ball expects to ramp up production in its Westminister, Colorado, innovation

Cremica launches 7 new flavors of Mayonnaise in the foodservice category - Mount Fuji Japanese Mayo, Wild Spice, Mushroom Willow, Tomakhan Mayo, Creamy Basil Pesto, Pickle Tickle and Frontier Josh Mayo

facility by the end of 2020, and it looks forward to the opportunity to expand adoption of the cups to restaurants, bars, convenience stores, breweries and retail locations. ■

Cremica launches new flavors of Mayonnaise

Combination of classic Indian and International flavors

Cremica has unveiled new flavors of Mayonnaise at the Indian Restaurant Congress and awards 2019 at New Delhi. Cremica is known for its innovative offerings and commitment to quality. The company has unveiled 7 new flavors of Mayonnaise in the foodservice category - Mount Fuji Japanese Mayo, Wild Spice, Mushroom Willow, Tomakhan Mayo, Creamy Basil Pesto, Pickle Tickle and Frontier Josh Mayo. According to the press release, these are a good combination of both classic Indian and International flavors to meet the evolving taste of Indian customers.

Speaking on the occasion Akshay Bector, managing director at Cremica said, "The restaurant industry must focus on quality, supply chain and standardization of their offerings. Cremica's effort has always been towards introducing innovative product range that ranks high on taste and quality. We have a fairly good understanding of the evolving Indian palate. These new flavors of mayonnaise will help niche category restaurants to redefine their offerings. Flavors like Creamy Basil pesto and Mount Fuji Japanese mayo would be good for Italian and Sushi Restaurants."

According to the press note, Cremica has been the title sponsor of Indian Restaurant Congress (IRC) since its inception. IRC is considered to be the leading business and knowledge platform for the restaurant and food industry. The Indian restaurant congress is known to be a key event for the industry where Influential executives, thought leaders, innovative exhibitors and industry titans come together. In addition to this, the show claimed to provide intriguing insights on updates from industry leaders and visionary experts. Themed as 'Restaurant leadership Conference' the show attracted more than 500 stakeholders



and key thought leaders from top restaurants and F&B brands from India and global markets. ■

Nestlé launches world's largest Milo factory in Malaysia

Expanded production capacity for export to over 20 countries

Nestlé Malaysia has recently launched its expanded Chembong factory in Negeri Sembilan, to establish the facility as the world's largest Milo manufacturing site and global Center of Excellence. According to the company, this expansion upgrades the manufacturing facility with state-of-the-art production lines to optimize capacity and efficiency to deliver higher productivity and competitiveness. The 30% production capacity increase will cater to growing domestic demand and for export to over 20 countries.



Since the start of operations in 1993, the Milo Chembong factory has been a key contributor to the local economy, offering work opportunities to its surrounding local communities. The Chembong factory complex currently employs Nestlé's largest factory workforce among its six factories in Malaysia, says the press release.

Speaking at the launch ceremony, Chris Johnson, executive vice president and chief executive officer of Zone Asia, Oceania and sub-Saharan Africa, said, "Malaysia is a key market for Nestlé globally and a key manufacturing hub in our Asian region. This expansion is a testament to our drive to ensure strong, profitable and sustainable growth, in tandem with our commitment to continue investing in Malaysia as a key manufacturing hub for the Nestlé Group."

Milo product variants produced in the Chembong factory include Milo powder, Milo 3 in 1 and Milo Kosong.waste." ■

A 30% capacity increase will meet expanding domestic demand and exports to over 20 countries for Milo, the world's leading chocolate malt beverage (pic courtesy - Nestlé)

PepsiCo organizes 'Nagpur Cleanathon'

Maharashtra achieves 100% PET recycling milestone

As a part of its Extended Producer Responsibility (EPR) program, PepsiCo India announced the milestone of achieving 100% PET collection and recycling for the State of

100% PET recycling milestone achieved as part of Extended Producer Responsibility (EPR) program in collaboration with GEM Enviro - leading waste management company (pic courtesy - csrmandate)

Maharashtra. PepsiCo India worked with GEM Enviro Management, a waste management company and set up 100 collection points across 36 districts of Maharashtra for the effective recycling of used PET bottles. The program worked on strengthening the existing informal collection network involving more than 10,000 waste-pickers and ensuring higher income by incentivizing collection efforts.

To celebrate this achievement, PepsiCo India and GEM Enviro in presence of senior officials from Nagpur Municipal Corporation (NMC), organized 'Nagpur Cleanathon' at Ambazari lake garden. The cleaning drive is part of an effort to continue the momentum of encouraging all stakeholders to collectively come forward and work towards responsible management of post-consumer plastic waste.

Nanda Jichkar, mayor of Nagpur city, Ram Joshi, Hon'ble Additional Municipal Commissioner, Nagpur Municipal corporation; Hema Deshpande, sub-regional officer at Maharashtra Pollution Control Board; Sachin Sharma, director, GEM Enviro and Juhi Gupta, head-Sustainability, PepsiCo India participated in the 'Nagpur Cleanathon' cleaning drive. Additionally, the drive also witnessed an overwhelming response from 100 volunteers, college students and professors.

Nagpur Cleanathon also included Nukkad Natak (street theatre) performances, poster competition, art exhibition and recycling kiosk to showcase the items made of recycled PET.

Speaking at the occasion, Nanda Jichkar said, "I am so glad to witness such a great response at Nagpur Cleanathon. From electric vehicles to recycling plants, the city of Nagpur is proactively working towards making it clean and green." She further urged all the students to become plastic brand ambassadors and spread the message of reducing, recycling and reinventing plastic wherever they go.

Commenting on the occasion, Juhi Gupta said, "At PepsiCo India, we have been taking a proactive approach to address the issue of plastic waste, and as part of our Winning with Purpose vision, we're striving to help build a world where plastics need never become waste. As part of the same vision, we have been actively working across multiple states to collect, segregate, & sustainably manage the equivalent of 100% of our



plastic packaging by 2021. Maharashtra is the second city after Delhi to achieve 100% PET Recycling target.”

Gupta further added, “The Cleanathon is aligned with Govt of India’s ‘Swachhta Hi Sewa’ campaign, that focusses on plastic waste management in the country through nationwide Shramdaan on October 2, 2019. We are encouraged by the kind of response received from college students to clean the Ambazari lake garden. Such collection drives will go a long way towards creating mass awareness on plastic waste management and making Nagpur cleaner and greener.”

Sachin Sharma said, “Our partnership with PepsiCo has been highly productive. We have been working together from the last year to enable greater recycling of used PET packaging in the city. We have proactively established collection centers, collection points across all districts of Maharashtra to collect PET plastic waste and recycle the same into utilitarian products.”

In 2018-19, under EPR program, GEM Enviro on behalf of PepsiCo India collected 6500 metric tons of post-consumer PET. The collected PET was 100% recycled ensuring no landfill.

*These numbers are based on the EPR certificates issued by GEM Enviro, which have been submitted by PepsiCo with the Maharashtra Pollution Control Board (MPCB). ■

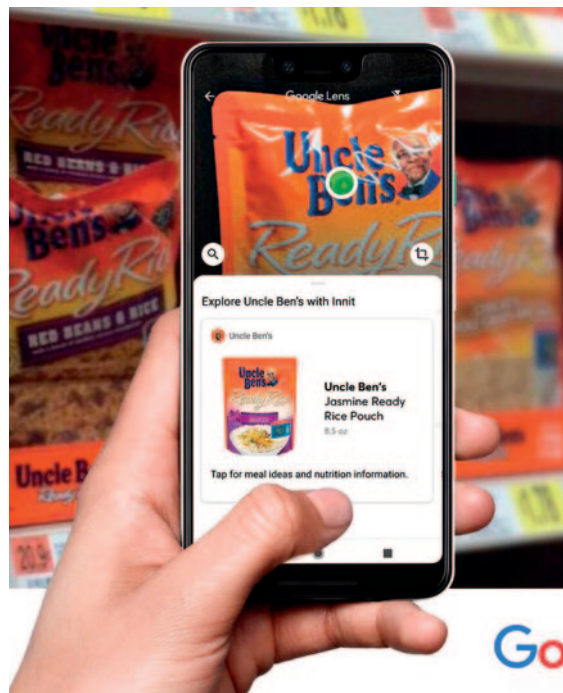
Uncle Ben’s partners with Innit

Revolutionizing consumers engagement with the food industry

Mars Food’s Uncle Ben’s brand is partnering with Innit, a connected food platform, to launch an AI-driven innovation that will forever change the way consumers engage with food. According to the press release, Uncle Ben’s is the first food brand to leverage Google lens, Google’s visual search technology, to connect helpful digital information to physical products and unlock dinnertime solutions in-store and at home.

In an effort to reach as many consumers as possible this September – during Family Meals Month – hundreds of thousands of Uncle Ben’s products will feature Google Lens stickers inviting them to use lens on the product. Using the Google app on iOS or Google lens app on Android, consumers can simply point their phone at Uncle Ben’s Ready Rice packages and retail displays in the US to discover content powered by Innit, including recipes with ingredient lists, nutrition advice and step-by-step videos to make cooking

The Uncle Ben’s-Innit Google lens experience is designed to help families cut through the clutter to provide recommendations, inspiration and information where and when they need it (pic courtesy - Innit)



simple, release mentions.

Fiona Dawson, global president at Mars Food, Multisales and Global Customers said, “Purpose is at the heart of Mars Food and we are driven by delivering better food today for a better world tomorrow. We bring this to life everyday through our Uncle Ben’s brand by providing healthy, tasty and convenient dinnertimes. Working with Google and Innit, we have created a powerful new way to help consumers navigate the journey from store-shelf to dinner plate, all while enabling families to enjoy the benefits of cooking together.”

For consumers who use Innit already, the experience claims to go one step further with personalized recommendations based on the consumer’s preferences and dietary needs. Innit can even calculate a personalized score for each product, based on its fit for the user, claiming to help making healthy choices and find best products. In addition to that this also helps consumers who struggle with the eternal question -- “What’s for dinner?” -- the experience instantly suggests meals that can be built around the product, along with guided cooking instructions to make it happen.

Commenting on this, Eugenio Minvielle, founder of Innit said, “Innit was founded on the principle of unlocking information within food, and using it to empower people to live and eat better. We’re proud to work with Google and Mars Food to create a new way of engaging with food, helping consumers along every step in the journey.”

“With Google Lens, we want to help people search what they see to get things done throughout their day,” said Alan Joyce, product manager - Google Lens at Google. “By working with UNCLE BEN’S and Innit to connect their own digital information to the physical world, we think

we can provide helpful information in context to help people with dinnertime."

Powered by the latest computer vision technology and AI, Google Lens is a visual search tool that lets users search what they see, get stuff done faster, and interact with the world around them in an entirely new way. ■

Huhtamaki acquires South African flexible packaging company Everest Flexibles

The deal has an enterprise value of EUR 58 million

Global flexible packaging major Huhtamaki has entered into an agreement to acquire the majority of Everest Flexibles, a privately owned flexible packaging manufacturer in South Africa. The product range and customer portfolio of Everest are complementary to those of Huhtamaki.

"With Everest we will be able to serve our current and new customers in South Africa and the surrounding region even better, offering them a full range of flexible packaging solutions with faster lead times," says Olli Koponen, executive vice president at Huhtamaki's Flexible Packaging division. "We will have two flexible packaging manufacturing units in Africa, Everest and the recently opened facility in Egypt. With these two sites we will be in an excellent position to tap into the growth opportunities of this exciting region."

Everest's manufacturing unit and an adjacent cylinder making facility are strategically located in Durban, close to a seaport and major freeways. The annual net sales of the business to be acquired is approximately EUR 40 million and it employs altogether approximately 420 people. The business will be merged with Huhtamaki's current flexible packaging sales organization in South Africa and it will become part of the flexible packaging business segment.

The business will be acquired for an enterprise value of EUR 58 million. The consideration for 70% ownership of Everest will be paid partly in cash and partly in shares, as the sellers of Everest will enter into a joint venture also with Huhtamaki's Foodservice and Fiber Packaging operations in South Africa. The transaction is expected to be finalized within a few months, subject to the approval of competition authorities.

Patanjali to acquire Ruchi Soya

Ruchi Soya shares hit 5% upper circuit limit

Patanjali Ayurved, Baba Ramdev-led company received the National Company Law Tribunal (NCLT) approval last week to acquire Ruchi Soya in an insolvency process with certain modifications. However, details of the modifications are not clear yet. According to reports, the company will infuse Rs 4,350 crore as equity and debt to settle dues of creditors of the debt-laden Ruchi Soya.

The NCLT order stated that Patanjali will infuse the amount of Rs 4,350 crore in the special purpose vehicle 'Patanjali Consortium Adhigrahan' that will be later amalgamated with Ruchi Soya.



According to Ruchi Soya reports, Patanjali group will infuse Rs 204.75 crore as equity and Rs 3,233.36 crore as debt. Also, it will infuse another Rs 900 crore through the subscription of non-convertible debentures and preference shares in the special purpose vehicle. Moreover, it will provide a credit guarantee of nearly Rs 12 crore.

Ruchi Soya shares on the BSE hit 5% upper circuit limit on 9 September 2019, after the company announced that the NCLT has approved Patanjali's resolution plan. Shares of the company were trading at Rs 4.84 in early trade, which saw a jump following the announcement, against the previous close of Rs 4.61.

In one of our earlier articles, 'NCLT approves Patanjali's takeover of Ruchi Soya,' that NCLT has approved Patanjali's plan to buy Ruchi Soya, but it demands some clarifications. Ruchi Soya owes over Rs 9,345 crore to financial creditors and another Rs 2,750 crore to operational creditors. According to PTI reports, this resolution comes at over Rs 60% haircut to the lenders. ■

Bühler expands insect portfolio by mealworms

Yellow mealworm offers interesting market opportunities in food applications

Bühler announced that it has developed a string of technologies and capabilities to offer total rearing and processing solutions for the insect industry. "Our proposition to the market is to support the industry through solutions that produce and process a range of insect species," says Andreas Aepli, chief executive officer at Bühler Insect Technology Solutions. The first industrial black soldier fly plant has already opened in June this year. Bühler is now in the execution of a new facility for a second species, the yellow mealworm.

Livestock production, especially the pig industry, is under enormous pressure because the already tight margins continue to decline – in particular in Europe. While retail prices for pork have remained broadly stable, farm gate prices for pigs have plunged to levels where many producers are struggling to break even. Furthermore, production costs are on the rise, since grain prices have increased substantially, and feed makes up 75% of the cost to produce pig meat. That is why the number of pig producers, who have already destocked or are leaving the industry completely, is rising. These producers are now looking for alternative but more sustainable businesses, in which they can leverage their animal farming skills.

First project for the new species

A first project has been started in the Netherlands with a farmer who already worked on the concept of producing yellow mealworm in an old pig farm. Bühler will now support the project and design, installation and commissioning of a complete mealworm production facility in a 2,300 square-meter facility. "With this project we will set the bar on modularized mealworm production in an automated and hygienic way," says Aepli. "Our technological solutions can be readily integrated into existing farms, but larger-scale facilities can also be realized. Once the first plant is completed and producing profitably in the Netherlands, it will offer livestock farmers an alternative option for gaining a sustainable business with attractive margins."

Yellow mealworm as an alternative

The yellow mealworm (*Tenebrio molitor*) offers interesting market opportunities in predominantly food applications. They have a great nutritional value which includes proteins, fatty acids, vitamins, minerals, and dietary fibres. Thus, they are already used in various food products with very attractive

marketing concepts. While the mealworm market has shown significant growth in the last years, the global market size is predicted to even exceed its current growth rate. In addition, mealworm farming could offer a new and stable production and commercialization outlook for farmers. Another interesting aspect of mealworm farming is the resource use. Mealworms can grow on for instance wheat bran and rice husks, by-products that many existing Bühler customers produce and could get increased value out of.

Globally, the pressure on protein is rising fast as the worldwide population is expected to rise to nearly 10 billion by 2050. The global supply of protein is under pressure due to land erosion, ocean depletion and climate change. Alternative proteins are in high demand and innovative sources such as algae, fungi, single-cell bacteria as well as insects are on the rise. Insects offer one of the biggest potentials as they can be produced anywhere in the world and can be used almost directly as a high-quality source of nutrition and protein. ■

Huhtamaki acquires Mohan Mutha Polytech

Acquisition allows Huhtamaki to speed up its growth in India

Huhtamaki has agreed to acquire the assets and operations of Mohan Mutha Polytech (MMPPL), a privately-owned flexible packaging manufacturer located in Sri City, Andhra Pradesh, India. According to the press release, the acquisition will allow Huhtamaki to speed up its growth in India by improving its capability to serve customers in South India.

MMPPL has approximately 160 employees and its net sale in 2018 was approximately EUR 9 million (approximately Rs 70 crore). The business will be consolidated into the group's flexible packaging business in India. The debt-free purchase price is approximately EUR 10 million (approximately Rs 77 crore). The transaction is expected to be closed by the end of 2019.

Huhtamaki is a global specialist in packaging for food and drink. With a network of 79 manufacturing plants and an additional 24 sales only offices in altogether 35 countries. The company claims to be well placed to support its customers' growth wherever they operate. Approximately 18,100 employees develop and make packaging that helps products reach more people and more easily. In 2018, Huhtamaki stated its net sales of EUR 3.1 billion (approximately Rs 24,000 crore). ■

October 2019

19-21 October, 2019

Food Fest

Lucknow, India
Contact: Key2Green Private Limited India

19-21 October, 2019

Dairy Fest

Lucknow, India
Contact: Key2Green Private Limited India

21-23 October, 2019

Food ingredients & Health ingredients India (FIHI)

Bombay Exhibition Centre (BEC), Mumbai, India
Contact: UBM India Pvt. Ltd. India

29-31 October, 2019

Gulfood Manufacturing

Dubai
Contact: Dubai World Trade Centre UAE

November 2019

07-09 November, 2019

Bio Fach India

India Expo Centre, IEM, Greater Noida
Website: <http://biofach-india.com/home>

08 - 10 November 2019

India Food Expo (IFX), Lucknow

Indian Industries Association Bhawan, Lucknow, India
Organiser: Indian Industries Association India

13th November, 2019

Next Gen Consumer Fulfilment Summit

The Lalit, New Delhi, India
Email: upendra@questconferences.com

14-16 November, 2019

Baker's Technology

Hitex Exhibition Center, Hyderabad, India
Organisers: Synergy Exposures & Events India Private Limited India

November 2019

21-23 November, 2019

World Tea & Coffee

Expo-Mumbai

Bombay Exhibition Centre (BEC), Mumbai, India
Organisers: Sentinel Exhibitions Asia Pvt Ltd India

28-29 November 2019

Food Quality and Safety Congress India (Conference)

Holiday Inn Delhi
Website: inventiconbusinessintelligence.com

28-30 November 2019

India International Tea and Coffee Expo

Khudiram Anushilan Kendra, Kolkata, India
Email: RadiaantExpositionsLtd@india.com

14-16 November, 2019

Baker's Technology

Hitex Exhibition Center, Hyderabad, India
Organisers: Synergy Exposures & Events India Private Limited India

21-23 November, 2019

World Tea & Coffee

Expo-Mumbai

Bombay Exhibition Centre (BEC), Mumbai, India
Organisers: Sentinel Exhibitions Asia Pvt Ltd India

December 2019

4-6 December, 2019

India Cold Chain Show

Bombay Exhibition Centre (BEC), Mumbai, India
Organiser: Reed Manch Exhibitions Private Limited India

05-06 December 2019

India Food Safety Summit (Conference)

Vivanta by Taj, New Delhi, India
Organiser: Synnex Business Media Pvt. Ltd

11 December, 2019

CII Food Safety, Quality and Regulatory Summit

Le Meridien New Delhi, India
Organisers: Confederation Of Indian Industry, Delhi India

December 2019

12-14 December, 2019

Pacprocess India

Pragati Maidan, New Delhi, India
Website: <https://www.pacprocess-india.com/en/Home/Home>

12-14 December, 2019

Food Pex India

Pragati Maidan, New Delhi, India
Website: <https://www.foodpex-india.com/en/Home/Home>

13 December 2019

PDIT 2

Pragati Maidan Delhi
Website: www.pacprocess-india.com / www.foodpex-india.com

12-14 December 2019

Drink Technology India

Pragati Maidan Delhi
Organiser: Messe Munchen

January 2020

08-09 January 2020

Indus Food

India Exposition Mart, Greater Noida, India
Organisers: Trade Promotion Council of India (TPCI) India

09-10 January 2020

World Mithai & Namkeen Convention

Brilliant Convention Centre, Indore, India
Organisers: Advance Info Media & Events Group India

08-09 January 2020

Indus Food

India Exposition Mart, Greater Noida, India
Organisers: Trade Promotion Council of India (TPCI) India

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World Mithai & Namkeen Convention

Brilliant Convention Centre, Indore, India
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Share prices of food & beverage related companies in India

In Rupees, October 2019

Company names	NSE	BSE	Company names	NSE	BSE
Food and beverage processing companies			Tea producers and suppliers		
ADF Foods	259	258.75	Bombay Burmah	1069	1068.15
Apex Frozen	206.9	206.60	Mcleod Russel	7.15	7.21
Beeyu Overseas	—	0.36	Goodricke Group	—	165.05
Britannia	3037.8	3,037.45	Rossell India	58.85	58.95
Chaman Lal Seti	—	46.90	Jay Shree Tea	51.05	51.9
Chordia Food	—	135.00	Dhunseri Petrochem & Tea Limited	66.95	66.75
Coffee Day	41.75	41.75	Assam Company India Limited	0.6	0.59
Dabur India	439.3	439.75	James Warren Tea Ltd.	—	87.8
DFM Foods	246	248.15	Warren Tea Limited	—	40.75
Flex Foods	—	48.00	Harrisons Malayalam Limited	51.2	51.35
Foods and Inns	—	47.70	Lykis	—	19.85
Freshtrop Fruit	—	95.05	B & A Limited	—	137.95
Future Consumer	23.9	23.8	Terai Tea Company Limited	—	31.35
GlaxoSmith Cons. Healthcare	8434.35	8464	Kanco Tea & Industries Limited	—	34.9
GRM Overseas	—	188	Diana Tea Company Limited	—	9.58
Hatsun Agro Products Ltd	627.15	630	Tyroon Tea Company Limited	—	28.7
Heritage Foods Ltd	333.35	334.9	Asian Tea & Exports Ltd.	—	7.99
Himalaya Food International Ltd	—	5.65	Packaging manufacturers and suppliers		
Hindustan Foods	531.8	540.95	Ester industries limited	30.55	31.45
Kovilpatti Lakshmi Roller Flour	36.5	29.6	TCPL PACKAGING LIMITED	265.5	281.65
Kohinoor Foods	11.75	11.8	FLEXITUFF INTERNATIONAL	6.7	6.42
Kothari Fermentation and Bioch	—	61.1	TIME TECHNOPLAST LIMITED	57.6	57.1
KRBL Ltd	215.9	216.3	UFLEX	209.2	209
Kwality Ltd	1.55	1.63	JINDAL POLY FILMS LIMITED	224	224.6
Lotus Chocolate Company Ltd	—	15.3	MAX INDIA LIMITED	64.9	64.75
LT Foods	23.6	23.55	ESS DEE INDIA	3.55	—
Mahaan Foods	—	13.11	BALMER LAWRIE & COMPAN	165.6	165.65
Manorama Industries	—	320	Cosmo Films	205.75	—
Manpasand Beverages	7.4	7.45	J K Paper	117.5	117.5
Milkfood	—	304	Rajoo Engineers	—	14
Modern Dairies	—	3.99	Huhtamaki PPL	232.6	232.45
MSR India	—	6.9	Supermarket or retail chains		
Nestle India Ltd	13819.85	13842.5	Big Bazaar	381.85	—
Oceanaa Biotech Industries Ltd	—	7.42	Spencer's Retail	66.85	66.4
Parag Milk Food	159.25	158.75	Future Retail	381.55	382.1
Prabhat Dairy	78.3	78.25	Agriculture		
Prataap Snacks	875	874.15	Kaveri Seed Company Ltd	463.95	462.2
Ravalgaon Sugar Farm Ltd	—	1980.1	Goodricke Group Ltd	—	165.05
Sampre Nutrition Ltd	—	12.65	Mcleod Russel India Ltd	7.15	7.21
Sheetal Cool Products Ltd	—	123.8	Rallis India Ltd (TATA)	168.85	169.2
Tarai Foods	—	2.8	Tata Coffee Ltd	74.65	74.9
Tasty Bite Eatables Ltd	9993.55	10005	Pesticide manufacturers and suppliers		
Tasty Dairy Specialities Ltd	—	18.4	Aimco Pesticides Ltd	—	108.15
Umang Dairies	33.25	33	Bayer CropScience Ltd	3278.95	3310
Vadilal Enterprises	—	1181	Bharat Rasayan Ltd	5681.8	5760
Vadilal Industries Ltd	787.65	785.5	Dhanuka Agritech Ltd	305.5	305
Varun Beverages	608.6	607.25	Insecticides India Ltd	565.4	563.3
Vikas Proppant	3.25	2.98	Meghmani Organics Ltd	50	50
Virat Crane Industries Ltd	—	19	NACL Industries Ltd (Nagarjuna)	28.45	28.5
ITC	244.75	244.7	PI Industries Ltd	1302.8	1305.85
Jubilant Life Sciences	473.5	473.4	Agro fertilizers manufacturers		
Edible oil			Coromandel International Ltd	403.45	404.3
Ajanta Soya	—	20.20	National Fertilizers Ltd	24.75	24.75
BCL Limited	—	74.90	Chambal Fertilisers & Chemi	147.55	147.45
IVP Ltd	64	57.6	Rashtriya Chemicals & Fertilizers Ltd	45.05	45.05
Jatalia Global Ventures Ltd.	—	4.01	Zuari Agro Chemicals Ltd (Adventz)	86.1	86
Zydus Wellness	1577.2	1585.75	Gujarat Narmada Valley Fertilizer	202.6	202.75
Marico Ltd	382.7	382.25	Deepak Fertilisers & Petrochem	92.65	92.55
Distilleries and wineries			Nagarjuna Fertilizers and Ch(Nagar)	2.95	3.1
United Spirits Ltd (A Diageo Co)	615.15	614.8	Mangalore Chemicals & Fertilizers	32.5	32.7
United Breweries Ltd (UB)	1275.2	1281.4			
Radico Khaitan Ltd	295.65	294.6			
Globus Spirits Ltd	117.2	117.45			
GM Breweries Ltd	374.9	373			
Empee Distilleries Ltd (Empee)	3.4	3.24			
Jagatjit Industries Ltd	—	32.05			
Tilaknagar Industries Ltd	12.65	12.63			
Mohan Meakin Ltd	—	—			
IFB Agro Industries Ltd	377.45	376			

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