

Anuga Food tec 2015, Cologne Germany : An overview

Efficiency and convenience trends dominate at Anuga FoodTec

Anuga FoodTec was held in Cologne at the end of March, offering a cross-process exhibition spectrum oriented to all branches of the food and beverage industries. The show meets the requirements of manufacturers for integrated and flexibly applicable technology concepts across all levels of processing. Leading international companies from the mechanical engineering, food and beverage technology, process technology, packaging and filling sectors were present. In addition to this, numerous smaller and medium-sized companies were represented, whose highly specialized technologies and services are indispensable for the branch. Also, a series of major corporations that don't seem connected to the branch at first glance, for example, Exxon, with food-compatible lubricants and Bilfinger with automation solutions.

I visited the fair from the dairy perspective. The key technologies to be highlighted are robotics in picking and placing, high speed packaging machineries (with multiple application on cups, cones, bottles, calypo, push ups), Small to medium sized skid mounted milk processing systems with pasteurization, separation and homogenization, Technology transfer for Greek yogurt, specialized cheese, functional foods, fermented milk products, sterilised milk , UHT milk and aseptic packaging in bottles and cartons.

There was an exposition of India specific dairy technology from Italy, Germany, Turkey , Poland, Cyprus , UK and China.

The plate based technology to build cheese mould was another area with potential for panir processing in India. There were a few technologies for creating an aseptic environment in milk processing and Yogurt processing. This leads to an amazing improvement in shelf life of milk products.

Special analysers with capability to test adulterants and neutralizers which are found in Indian raw milk with a special feature to identify a non milk adulterant were the key highlights of the food analysis section.

There were large number of companies for providing project engineering services for conducting audits for hygiene, leakages, fouling and food safety. One of the company was also offering a state of the art online cloud based solution for food safety and HACCP which could act as a blessing for Indian companies aspiring for high quality standards and documentation.

Latest trends in world market could be listed as follows :

1. From clean to clear label
2. Convenience for foodies
3. Marketing to millennials
4. Snacks rise to the occasion
5. Good fats, good carbs
6. More in store for protein
7. New routes for fruit
8. A fresh look at frozen
9. Private label powers on
10. Rich, chewy & crunchy

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Following are brief excerpts from the Innova report which got released during the exhibition.

Climate protection and sustainable economic development are key challenges in food production and among the major themes on display this year. Energy costs only account for an average two percent of revenues in the food industry. But sustainable solutions to reduce energy consumption are essential for producers if they want to survive in the market over the long term. “Energy efficiency plays a key role in this regard,” says Prof. Dr. Antonio Delgado from the University of Erlangen-Nuremberg. This scientist sees the food industry in a particular area of conflict because “any measure taken to increase energy efficiency may neither be detrimental to food quality or food safety” – which means nothing else than many of the measures developed in other industries are not suitable.

Delgado sees one way to greater energy efficiency in the use of energetic interactions between the production process and infrastructure. First and foremost, large savings potential results from the synergetic effects between heat generation and refrigeration. How creative companies can become in this regard is demonstrated by Maggi in Singen. The plant uses the waste heat from the nearby cupola furnace of a foundry. The energy extracted from the exhaust gas is stored in a thermal oil and pumped through a

Packaging technology

Caliz is an innovative aseptic multilayer packaging carton. It has a smooth surface, is easy to handle, slender and perfectly ergonomic as a bottle. With its new and unique shape in the aseptic packaging market, Caliz is claimed to give you more ways to position and differentiate a brand on the aseptic carton shelf. The new eye-catching shape is designed to meet the changing of market segment that looks for superior and functional package for today’s needs and tomorrow’s trends. Caliz is available in different sizes, from 200ml to 1000ml, fitting a broad range of products and consumer needs. It is promoted as “the perfect packaging for drinking products like juices, drinks and milk, and is especially designed for high quality or added-value beverages such as: nectars, enriched milk, milk for infants, drinking yogurt, energy and isotonic drinks, coconut water and coffee-based products

E_c_o_l_e_a_n_ presented their new Ecolean Air Aseptic Clear package. The company offers an improved filling machine EL4+ with a 33% higher speed and also presented a one of a kind “lighter store” (22m²) to see products from all over the world distributed in Ecolean’s innovative packaging solutions. Ecolean’s brand new EL4+ aseptic filling system, an updated version of the successful EL4 system, ran continuously on Ecolean’s stand throughout the exhibition, producing more than 80,000 packages per day. Visitors could drink a refreshing juice from the latest innovation, the Ecolean Air Aseptic Clear package, and also experience the full range of lightweight packages in various sizes for chilled and ambient distribution. Their award winning reclosing device SnapQuick, with its 0.5 gram, is claimed to take lightweight packaging and reclosing to a completely new level.

K_H_S_’ extremely compact, operator-friendly Innosept Asbofill ESL machine series not only offers maximum product safety but also exceptionally high flexibility when it comes to planned product changeovers. Whether milk, mixed milk, yogurt beverages or fruit juices, ESL technology fills all types of beverage sold through the cold chain quickly and efficiently. The compact design is additionally capable of processing a very wide range of bottle shapes, materials and closure types. Likewise compelling is the exceptionally small size of the sanitary room in the Innosept Asbofill ESL product series. The ESL 611 series requires a mere 0.7m., while the ESL 711 takes up only 1.2m. of space. You thus benefit not only from cost-effective maintenance but also from fast machine sanitizing.

Ever lighter PET bottles have been gaining ground in the water segment in particular for some time now. At the Bottles & Shapes center at KHS’ production site in Hamburg, Germany, a lightweight 1-liter bottle for milk and mixed milk beverages has now been made ready for market and successfully tested. Frank Haesendonckx, head of Technology at KHS Corpoplast, reveals: “With this light PET bottle we can now offer the milk industry an interesting alternative to carton.” As with all packaging developments KHS’ PET specialists have managed to identify a perfect balance between economy, market acceptance and product quality in this ultralight milk bottle, too. Like the beverage industry,

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the milk industry also has to produce under great cost pressure while satisfying the highest demands for product safety. In this context the light PET bottle for milk and mixed milk beverages can boast the following plus points: It can be filled aseptically; protects the product; lowers production costs and is 100% recyclable. The reduced amount of materials and lower energy consumption are in the full interest of milk producers. The 1 liter bottle recently developed by KHS, with a thread diameter of 32 millimeters, weighs just 20 grams. In comparison, other bottles of the same size common to the market usually notch up 22 grams on the scales. Thanks to a substantial material saving of 2 grams of PET a bottle, at a production rate of 50 million bottles up to €140,000 can be saved per annum. The bottles can also be easily processed as shrink packs. This means that costs are no longer incurred for secondary packaging such as trays, which are much more expensive regarding materials and transportation. Being light on a stretch blow molder before being conveyed by their neck ring, aseptically filled and sealed.

Sleeve International has innovated with the launch of LWPET, which enables manufacturers to reduce shrink sleeve carbon footprint by 50%. On the dairy products market (drinking yogurts, probiotics, white and flavored milks, milkshakes and creams) the use of polyethylene bottles associated with shrink sleeves tends to become a standard in shelves, especially for premium ranges. In view of this rapid development, manufacturers are showing concern about the environmental impact of their plastic packaging and are trying to reduce it. Sleeve International's LWPET allows for a 50% carbon footprint reduction.

Sleeve International also claims to have launched the first shrink sleeve made from low density PET, which enables recovering of used PET bottles. LDPET is a response to the recyclability objectives of beverage manufacturers. Beverage manufacturers can benefit, for the first time ever, from a solution that allows for the separation of sleeves from bottles without any manual operation. The printed film uses inks that are specifically designed to withstand the materials segregation treatment with no risk of contamination for the PET flakes. This major innovation, a result of the cooperation between Sleeve International's technical platforms, allows them to obtain a recycled PET of materials that meets most of the recyclers' expectations.

The film producer and refiner Maria Soell GmbH, Nidda presented the Eichelsdorfer Shrink Shape. The new film combines deep draw technology and shrink film which is ideal in view of materials savings, performance and sustainability within the packaging process. Its top web and bottom web provide extremely high seal strength and a skin-tight wrap around the food to be protected: meat, cold cuts, poultry or cheese. The food is wrapped by machine, meeting maximum hygiene requirements and ensuring a considerably extended shelf life.

Cryovac Proaseptic packaging solutions function as an aseptic stand-up pouch as an alternative to rigid aseptic containers. These pouches offer differentiation by bringing packaging innovations to stand out from the crowded retailers' shelves. The system offers differentiation and product enhancing through trendy shapes, a large artwork area and transparent option for product visibility. There is added value through organoleptic property protection, ambient temperature storage and a long shelf life. There is convenience through a tactile, safe package that is easy to handle and allows easy opening and closing. It is environmentally friendly through the use of aluminum-free, high-barrier materials and light package. Commercial applications have included a cream and a yogurt from French brand Elle & Vire.

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Lamican is an innovative, contemporary, aseptic liquid paperboard based carton packaging system that includes Aseptic Packaging Machines, Aseptic Packaging Materials & Machine Maintenance Services. Some of the liquids that LamiCans can be filled in include: dairy products, milks made of oat, soy and rice, water, flavored water, sport and energy drinks, ice tea, coffee drinks, juice, smoothies, tomato soups and alcoholic drinks (less than 22%). The latest brand to adopt the packaging concept is Russian beverage brand Bear Fruit, a line of functional juices that includes an aloe vera & grapefruit flavored enhanced water.

Analysis technology

In the food processing industry, seamless tracking needs to be ensured all the way from incoming raw materials to the finished product. The chain of production and processing operations must be monitored at all times. The aim of traceability is to create transparency and a rapid flow of information remove right along the chain of production and manufacturing, with a view to preventing damaging incidences or limiting their consequences when they occur. The complete solution that comes with the knife series is an all-round system consisting of hardware and software, and is obtainable from RFIDICK GmbH. The aim of the RFID system is to guarantee the quality of working processes, by providing automatic contactless documentation without any additional effort. This provides users with a complete system for the seamless and fully automated tracking of the tools and protective clothing that are used in the workplace, allowing for quality guidelines to be observed and documented.

In a way similar to the human tongue, the ASTREE electronic tongue (Alpha Mos) performs a global analysis (taste fingerprint) of a complex mixture of dissolved organic or inorganic compounds. The ASTREE analyzes all components responsible for taste in liquid samples. Its detection system consists of 7 ChemFET sensors and a reference electrode. The Electronic Tongue is specifically designed for applications in R&D, formulation and product development: quantification of taste masking efficiency, bitterness or taste attributes measurement, development of placebo with a taste similar to the active formulation and benchmarking of competitive products.

Processing technology

In recent years, JBT's IQF technology has advanced to the extent that optimal production capacities of between five and 16 tons per hour can be achieved on the company's Frigoscandia FLoFREEZE, with the ability to easily modify the airflow for different product types and sizes. The FLoFREEZE uses "true" fluidization which enables the product to behave like a liquid, suspending each particle individually in supercooled air, while simultaneously freezing them. By doing so, each particle maintains its shape and freshness without sticking together, a key benefit when freezing "difficult" foods such as fine herbs, cheese, vegetables, shrimp, cooked rice and pasta.

Fraunhofer-Institut für Grenzflächen und Bioverfahrenstechnik IGB offers a system for drying with superheated steam at atmospheric pressure. Due to the superior heat transfer properties of superheated steam to air and no resistance to diffusion of the evaporated moisture in its own vapor, higher drying rates can be achieved. This not only has a positive impact on the short process time, but also results in more homogenous drying. Therefore, superheated steam dryers are usually more compact in design and involve less investment costs compared with hot air dryers. Additionally, it is feasible to reuse the energy of excess steam for other purposes in the facility. In such cases, high overall energy efficiency can be achieved for the entire process chain. The method was successful for drying mineral raw materials, construction materials and both food and feed stuffs in a gentle manner and was proved energy-efficient. Systematic tests have proven that steam drying is also suitable for the hygienization of foodstuffs.

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The PGSS (Particles from Gas Saturated Solutions) process is a high pressure process for the generation of particles. Fundamentally, meltable solids can be processed into non-caking powder. With the process, solids and fluids can also be encapsulated by means of supercritical fluids – and in such a way that different release profiles are created. The supercritical fluids are utilized as aids for this in order to spray and solidify low-viscosity and high-viscosity substances such as chocolate. Gaseous smelts are homogenized and pulverized by mixing the liquefied individual components with compressed carbon dioxide and subsequently releasing them e.g. via a nozzle. This way, the smelt is torn apart into the smallest of droplets and at the same time cooled, due to physical effects. The finest of powders is generated which – due to its targeted adjustable size (micrometers), morphology, and composition opens up new applications for the foodstuffs, cosmetics and the pharmaceutical industry.

When it comes to authentically re-creating the golden crispy coating of “homestyle” coating on an industrial scale, the revolutionary GEA MultiDrum is claimed to offer a real advantage. And in recognition of this machine’s ability to do this, the company received a prestigious FoodTec Gold Medal at Anuga FoodTec 2015. This award also acknowledges the coating machine’s other benefits to significantly reducing the manpower needed on the processing line and a less dusty and therefore healthier working environment. In addition to the gold medal, the GEA MultiDrum has been well received by customers using the technology who see it as a golden opportunity to strengthen their position in the competitive processed food market. It also boosts line efficiency, contributes to a cleaner work place and reduces manpower, which all save money. GEA also offers the possibility to try products and recipes on the GEA MultiDrum in their superbly equipped Technology Center in the Netherlands.

The Gram Equipment LIFE and LIFE- 3D units have added new dimensions to extruded products. The addition of large inclusions into extruded ice cream products – stick or stickless – is now possible with 3D stamping with LIFE-3D. With the LIFE unit, ice cream producers can now meet the demand for extruded ice cream products with exciting new combinations and design. Any large inclusion, even whole biscuits that can be fed through an Ingredient Feeder, can be added to extruded products. The inclusion integrity is kept intact and the inclusions of the finished product will almost have the same size as when they were fed into the Ingredient Feeder. The LIFE unit is based on the patented Cryo-ZAT (Zero Adhesion Technology) when forming, cutting and stamping the extruded ice cream.

Gerstenberg Services A/S has launched a new high pressure tubular scraped surface heat exchanger – the Polaron – that crystallizes all types of margarine and related products by direct cooling with CO₂. To margarine manufacturers this results in energy savings and products of very high quality. In the fat crystallization industry, global margarine manufacturers are facing a growing demand for optimizing the production and saving energy. Gerstenberg Services A/S has recently launched the Polaron, a high pressure tubular scraped surface heat exchanger that uses the natural refrigerant CO₂ in the cooling system. For conventional margarine production, the Polaron is, however, also available for the traditional refrigerant types ammonia and Freon. Gerstenberg Services A/S has designed the Polaron with a rescue tank inside the cabinet, which allows the fast removal of the refrigerant in case of production shutdown and fast restart of production.

Multi-Fill’s MPFSC120 volumetric filling system has been developed with the food processor in mind. The more compact design responds to the needs of food processors with limited space on their production lines. The MPF fillers deposit products such as: cooked pasta (short & long goods), cooked /IQF rice, various fruits and vegetables, refrigerated salads, and others, into many types of containers (trays, plates, cups, bowls, cans, bags, jars, etc.) at speeds of up to 120 containers per minute. These mobile units can be quickly cleaned and moved to a different production line in minutes, ready to fill a different product into a different container with no or few change parts. They can be positioned over many different container conveying systems, including vertical and horizontal bagging units. The incorporation of new technology into the MPF fillers allows for faster changeover, tighter accuracies, and increased cleanliness of fill, resulting in less down time.

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DC Norris & Company Ltd has launched the DCN Cook-Chill Systems to produce fresh tasting convenience food of the very highest quality with a shelf life of up to 45 days. The system utilizes specially designed cooking, packaging and chilling equipment capable of processing both small and large volumes of ingredients with the minimum number of operators. The Cook-Chill system allows customers to make 250,000 meals a day or more. User friendly control systems monitor production and product status at all stages of the process to ensure delivery of a reliable safe refrigerated product.

Kasag Langnau AG offers a new system where the waste water and process heat arising from food industries in surges is collected in a retention volume and exploited energetically for heating and cooling purposes by means of heat exchangers. For continuous discharges and process heat, no retention volume is necessary. It is ideal to draw advantage from this energy potential at the point where it arises. The decisive parameter hereby is to ensure the transfer of heat in the heat exchanger. This requires special solutions.

For the handling of non-flowable products Jung Process Systems has invented the HYGHSPIN H, where the feed screws of this pump series are extended. So they feed the product from underneath of the hopper as an extruder towards the pumping section. This new design is especially suitable for dough, cake stuffing, peanut creams, pastes, sausage meat and all other products which are usually supplied to pumps by auxiliary devices. Feeding, pumping and cleaning can be handled by one pump.

THIMONNIER, a French designer and manufacturer of flexible packaging machines presented two machines: the first one for DOYPACK applications: the SF200, Spout Filling machine and the second one, the THP7300, vertical form-fill-seal machine for pillow pouches. The SF200 (Spout Filling) allows the filling of liquid, semi-solid or pasty products, with or without pieces, in DOYPACK pouches (stand up pouch from 0.1 up to 5 liters with a speed from 5 to 240 pouches/ min) through the spout. This adjustable shelving machine provides a capacity from 50 to 2000ml. It fits all the requirements regarding the spout location (whether on the top or on the side), or concerning the shape of the pouch. In order to suit to the different needs of cadences, the SF200 is available in 2, 4 or 6 lines of filling, which gives the ability to reach up to 220 pouches/min. The THP7300 is a VFFS machine for both liquid and viscous products (milk, kefir and yogurt) to pack in polyethylene "pillow" pouches. The THP7300 is used for pasteurized, ultra-clean, aseptic (UHT) milk. THIMONNIER offers a wide range of models, with capacities from 400 to 12,000 pouches per hour.

Fava Giorgio Axel S.R.L. has developed a worldwide manufacturing system that reduces the number of employees, increases the energy efficiency, reduces wastes and production cost. It uses both the advantages of the single mold in molding and de-molding phases and the advantages of the multiple molds in transport, cooking and cooling phases. Moving single molds during molding and de-molding requires less room than any other multi-molds system. In this way there is not only the structural and plant reduction, but also the energy saving for air conditioning, because when spaces and volumes are smaller there is a lower energy dispersion. It is suitable for under vacuum cooking, with or without weight loss; thanks to heating and cooling water use it warrants treatment homogeneity even because of the lower flow resistance due to the special LEGOMOLDS piles' structure that optimizes heat exchange. The small dimensions reduce the heat dispersion and the re-circulation and storage plants permit really high water saving.

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Stephan Continuous Cooker and UHT systems for the dairy industry are designed for all kinds of processed cheese from low to high viscosity. Stephan Machinery offers complete turn-key processing lines including up-stream equipment starting from raw material handling and down-stream equipment down to filling. Single UHT-lines are available from 500l/h up to 6000 l/h. The company will present the STEPHAN UHT Line UHT 1000 D consisting of a Stephan Continuous Cooker, a UHT double head execution, as well as a flash cooling and creaming tank. The processing line has been designed for a capacity of 300-1000 l/h processed cheese.

Bosch presented its Ampack AF 8/8 inline cup filling machine dedicated to the needs of dairy, baby food and clinical food manufacturers. The machine can be equipped with either pulsed light or hydrogen peroxide as a cup decontamination system for ultra-clean applications to suit customer and product requirements. Pre-assembled cell-plates for two different diameters allow for fast changeovers in 15 minutes. This not only increases format flexibility for different cup shapes and sizes, but also reduces changeover and cleaning times. All major movements are propelled via servo motors, enabling quick and easy adjustments to the set-up, enhancing overall equipment effectiveness (OEE) and enabling speeds of up to 40 cycles per minute. Stations for additional features, such as snap-on lids, can be easily integrated, further enhancing flexibility. PET blowing for material savings and shelf differentiation. For dairy and beverage producers seeking to minimize material use and energy consumption while still providing a wide range of package shapes and sizes for differentiation at the point of sale, Bosch showcased its linear PET blowing module. With speeds of up to 32,000 containers per hour, it can be combined with hygienic filling technologies for aseptic applications such as dairy-based yogurt and coffee drinks. Other application examples are mineral water and further noncarbonated beverages. The machine produces lightweight, thin-walled containers with the smallest bottle neck rims on the market, reducing material requirements and costs. An intermittent step-by-step production feature ensures high flexibility, access to multi-flavor simultaneous production and the production of short neck bottles with lid closure.

Bosch Packaging Technology launched the new horizontal cartoning machine CFC 2012. It was developed especially for large scale secondary packaging formats of the food industry with a width up to 12 inches. "The development of the CFC 2012 is based on our long-term experience with bag-in-box machines and in-feed solutions, and backed by profound line competence. "Thanks to an optimized control and conveying technology, the cartoning machine ensures quick format changes, as well as safe and reliable product handling," explains Daniel Sanwald, product manager at Bosch Packaging Technology. Due to a wide range of in-feed systems, the machine can be flexibly used for many different products, such as bags with or without side gusseting, as well as stand-up bags with gable top. Even with the largest folded carton and product formats, for instance for cereals, the machine achieves an output of up to 200 folded cartons per minute. Modern servo technology guarantees supported, fast and reproducible format changes.

To meet the growing demands of the cheese industry, Sapal SA, a company of Bosch Packaging Technology, launched its redesigned DCS 1000 processed cheese conditioner. The machine has been redesigned to ensure uninterrupted production of individually wrapped slices (IWS) with an output of 1,000 slices per minute. "The demand for cheese is growing rapidly worldwide, with International Dairy- Deli-Bakery Association projecting a 25 percent growth from 2015 to 2018. The processed cheese market is expected to follow this trend," explained Louis Monnickendam, senior manager business development at Sapal SA. "The next generation DCS 1000 is the latest in a series of high-speed machines and shows our commitment to delivering solutions that allow producers to capitalize on this growing market." A fully redesigned forming group, with now integrated cooling system, provides full control of the product at any given speed. This results in an excellent distribution of the cheese mass and a perfect and precise slice shape even at the lowest slice weight of 13 grams (lowest available on the market).

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The R 105 MF (MultiFresh) is the latest addition to the MULTIVAC thermoforming packaging machine portfolio, and is a compact model designed for the production of vacuum skin packs in small and medium scale batches. The machine has been equipped with an upper web chain guide and heating at the top for this purpose. The demand for vacuum skin packs has remained at a consistently high level for years. This is no surprise, as this pack format reliably protects products and allows them to be presented attractively at the point of sale. Manufacturing these packs requires a special machine that places the upper web around the packaged goods like a second skin, without any tension. This ensures they retain their natural appearance. The full surface of the upper web is sealed to the lower web, ensuring no liquid can escape from the product. The packaged food is held in place in the pack, allowing it to be presented upright, hanging, or placed flat.

SPX's latest innovation in heat transfer technology is the P2P THE. This is a new tubular heat exchanger (THE) design that uses clever manufacturing techniques to enable product to flow on both primary and secondary sides with assured hygienic performance. Based on SPX's vast experience of food and beverage processing and heat transfer technology, this latest product brings a step-change in hygienic aseptic design and sterility safety for this type of equipment. A key differentiator between the new SPX P2P THE and standard THE designs is that the secondary sides are absolutely smooth with no crevices where bacteria can hide. This enables product to flow on both sides of the tubes while maintaining hygienic performance, and so increasing the production efficiency of the unit. As the unit does not require a secondary heating/cooling water circuit loop, installation costs are also reduced and energy consumption lowered.

Stäubli has launched the TP80 Fast Picker. The highly original four-axis kinematics are set to revolutionize food applications, avoiding the inherent drawbacks of conventional high-speed kinematics. This is a machine that can cope with well with over 200 picks per minute, handling weights of up to 0.1 kilos. Even higher loads up to a maximum of 1.0 kilos hardly impair its performance. Under these conditions and in continuous use, the TP80 still approaches the 200 picks mark. This makes the four-axis model ideal for use in the food industry where there is a demand for turnover, sorting and packaging in the shortest possible cycle times. At the same time, the Fast Picker has been designed for consistent reliability and precision. The four-axis robot can operate in large work spaces with a diameter of 1.6 meters and achieves an impressive repeatability rate of ± 0.05 mm. High precision is guaranteed, even after many thousands of operating hours. The rigid design of the kinematics reduces wear in continuous operation virtually to zero. In addition, all tubes and cables are encased within the arm, thus obviating the need for failure-prone external leads.

Ingredient technology

Fraunhofer-Institut für Grenzflächen-und Bioverfahrenstechnik IGB has launched high-quality whey proteins for foodstuffs. Whey resulting from cheese production contains valuable proteins that still often remain unused. In addition to lactose and minerals, whey contains above all valuable milk proteins. The proteins could be used in the food industry as a natural binding agent and as emulsifiers. To enrich proteins selectively and to add them to foods in accordance with their nutritional or technological-functional properties, a project intends to further develop an electromembrane process. The method combines pressure filtration through a porous membrane with an electric field. The proteins are not only separated according to their size, but at the same time according to their charge. Compared with ultrafiltration, this increases the yield and reduces the cleaning required.

“Sojaprotein” A.D. has launched TRADKON SPC-TEX, which are textured products produced by texturing traditional soy protein concentrate and available as minced and flakes. They are a source of protein – i.e. essential amino acids and protective substances – minerals and vitamins. The production process of traditional soy protein concentrates involves deactivating anti-nutritional factors and thus increasing the utilization of the proteins, as well as the removal of part of the soluble carbohydrates, which contributes to making these textured products more neutral in taste and lighter in color compared to soy flour based textured products. TRADKON SPC-TEX products have high nutritional and biological values. They are characterized by structural integrity, which is maintained even during

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rehydration, cooking, sterilizing and other similar procedures. They have a high capacity for absorbing water, fats and meat juices, stabilize the system and prevent fat separation and act as an antioxidant.

Under the leadership of Fraunhofer UMSICHT, 212 project partners are developing components that contribute to the sustainable processing of milk and a redesign of the dairy industry via their use in existing dairy infrastructures under the SUSMILK EU project. The processing of the milk requires different sources of heating and cooling. A core idea of the research consortium is the substitution of steam with hot water, which is generated by means of renewable energies or internal sources. The supply of heat and cold is intended to be ensured via integrated concepts, taking into consideration the coupling of power and heat, heat pumps, solar collectors, adsorption-type refrigeration systems, and energy produced at the respective location, e.g. from utilization of waste. Water can also be saved as a result.

Doehler presented natural ingredients and ingredient systems for food and beverages that are characterized by an outstanding multi-sensory product experience. The globally active company introduced ingredient solutions that fulfil the technological requirements of specific applications and harmoniously appeal to all the senses in the final product. A special focus was put on natural color alternatives, botanical extracts and authentic fruit flavors, as well as on fruit and vegetable ingredients for technologically demanding food and beverage applications. In addition, Doehler highlighted modern culture media for the microbiological detection of beverage-spoiling microorganisms under the brand name Doehler Microsafety Design. Under the DMD brand, Doehler provides innovative culture media for microbial detection in almost every segment of the beverage and brewing industry. The ready-to-use media are impressive thanks to their ease of handling as well as fast and reliable results. For example, the TransFast system makes it possible to obtain initial results from the microbial detection in non-alcoholic beverages after just 48 hours. The TransFast system includes a broth used for pre-enrichment, in addition to a transparent gel for direct detection in the Incubation Lightbox, allowing contaminations to be detected quickly and easily at a glance.

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