

Sensational atmosphere at interpack 2014

Visitor numbers top 175,000 at this year's interpack

The approximately 2,700 exhibitors and 175,000 visitors in the 19 halls at this year's interpack were treated to an outstanding atmosphere. Being the world's most important trade fair for the packaging sector and associated process industries, the show was sold out early and attracted high-ranking visitors from all over the world, even at the start of the exhibition.

Many companies experienced such a rush that their stands reached their capacity limits several times, the organisers reported. The level of visitor interest and qualification as well as the willingness to invest were reportedly even higher than at the excellent previous event. Many exhibitors rated the concrete business deals and sales concluded – some of which were absolutely spontaneous – as particularly positive.

Commenting on this, Friedbert Klefenz, President of the interpack Exhibitors' Advisory Board 2014 and President of Bosch Packaging Technology, said, "We were very satisfied with the quantity and quality of visitors at our stand. The interest taken in our technologies that make a vital contribution to global health and nutrition was enormous. We are pleased with the large number of leads produced, including many top executives and potential new customers. Similar comments came from other exhibitors. We were equally thrilled by the high number of international visitors and exhibitors – some 75% of the exhibiting enterprises were headquartered outside Germany. This confirms interpack's reputation as the world's leading trade fair for the packaging sector."

With visitors from abroad accounting for as much as 66% of total visitors, interpack 2014 not only set a new record for itself but also holds the top rating across all Messe Duesseldorf events. Visitors from a total of 120 nations travelled to Duesseldorf for the show.

The dominating themes at interpack 2014 were resource efficiency for plant and machinery as well as for packaging material usage, quality and safety to guarantee perfect and counterfeit-proof finished products – especially in such touchy segments as Food/Beverage – as well as diversity and flexibility for ever wider ranges and shorter product cycles. A particularly large number of innovations presented in the halls addressed these issues.

interpack underscores its importance not only through the sheer multitude of innovations and breadth of its exhibitor ranges but also through especially innovative themes. This year saw the debut of the Innovationparc Packaging and the METAL PACKAGING PLAZA which met with a very positive response from their target groups.

SAVE FOOD proved a particularly attention-grabbing theme at interpack. The initiative of the same name combats food loss and waste and involves such partners as the Food and Agriculture Organisation of United Nations (FAO) and the United Nations Environmental Programme (UNEP) as well as over 110 members from the industry. Even more impressively than at the kick-off event three years ago the SAVE FOOD Congress showed how the problem of global food losses and waste can be fought across the entire value chain.

Contributions came from prominent guests and participants such as FAO and UNEP representatives, the Senegalese minister and musician Youssou N'Dour and the former German Federal Minister Renate Künast in addition to the numerous lectures and panel discussions that identified practical approaches. More than 450 delegates participated in the Congress. For the entire duration of interpack 2014 Innovationparc Packaging presented solutions and ideas for fighting food loss and waste.

Here, a selection of exhibited products.

Cereal dryer and nut roaster

With four patents pending and more than 30 other innovations, the new Bühler Ceres dryer provides the highest level of sanitary production for coated RTE cereal products available on the market today, says the company. The Ceres features more hygienic product contact surfaces and more reliable, better-performing and lower-risk components. Manufacturing techniques and processes have been retooled and revamped to produce a dryer that lowers the risk of contamination at every opportunity. Pitched floors and roofs, an integrated CIP system, a continuous belt washing system, a comprehensive water management system and many other hygienic design elements combine to not only reduce the average cleaning downtime from eight hours to two hours, but also significantly increase the effectiveness and ease of cleaning. Even with challenging products like sugar coatings,

the Ceres can be thoroughly cleaned in far less time than existing technologies, allowing processors to quickly change products without risk of cross-contamination.

The Ceres' unique design enables a high-velocity airflow unrivalled in current technologies. This means more production can be packed into a smaller footprint, reducing the need for valuable factory floor space. This increased airflow is also effectively controlled, making it possible to produce product to specification more efficiently, uniformly and consistently, resulting in higher yields and better product quality.

The new Ceres also uses the latest technologies to minimise energy costs. From the new direct drive fans, to internal baffles, air curtains, insulated doors, floors and roofs, every step of the product and air flow has been reimagined to increase both energy and operational efficiency.

Bühler's high-capacity AeroRoast Dry Roaster delivers uniform heat and airflow distribution, producing superior product quality, colour and moisture content. The dual plenum dryer is designed for uniform drying of peanuts, tree nuts such as almonds, pistachios, macadamia nuts and walnuts, and sunflower seeds. Allergen cleaning is simplified with a host of sanitation features including full welds, complete interior access and the elimination of debris collection points.

The AeroRoast Dry Roaster uses controlled airflow to assure consistent processing across the product bed, preserving product roasting characteristics. The airflow is delivered both above and below the product layer, enhancing moisture removal and roasting characteristics while minimising processing time. Separately controlled roaster temperature processing zones ensure effective heat transfer as the product moves through the conveyor dryer. This results in highly efficient operation and lower utility costs. Sloped, smooth inner surfaces allow product to flow through the roaster without collecting or becoming a safety or sanitation risk. Easy access via large doors and removable panels allows cleaning to occur more often and more quickly during routine operations.

Energy and material efficiency, retrofitability

At interpack 2014, Theegarten-Pactec showcased a new unit that groups together individual products for secondary packaging and completes product groupings. Normally, entire product groupings have to be rejected if a single product is found to be defective when it reaches the secondary packaging machine interface. This results in the loss of perfectly good product. With the HCW4/FPC5 combination, manufacturers no longer need to write off entire groupings. Any individual products that are not wrapped or spliced are rejected by the HCW4 upstream from the secondary packaging stage. The new solution is based on a machine with three grouping units, each equipped with its own servo motor.

The latest model in the HCW range features a number of other innovations. Product is removed from the removal wheel while wrapping materials are fed in there simultaneously. This method of organising the wrapping process minimises the number of transitions, thus ensuring particularly gentle handling of product. The HCW4 is also a more compact machine than its predecessor and increases the wrapping capacity from 1,300 to 1,500 operating cycles per minute.

Compared to its predecessor, the CWM2 wrapping machine for chocolate products offers a variety of different wrapping styles and provides a much higher level of user accessibility. The improved ergonomics make it quicker to change between wrapping styles and formats, while also making them more reproducible.

Theegarten-Pactec offers manufacturers twenty wrapping styles across its machine portfolio. The MCC wrapping machine, for example, is the first continuous-operation machine to offer vienna-fruit fold wrapping.

The FPC5/280 horizontal flowpack machine wraps chocolate bars in flow packs before transferring the products to an LTM-K from industry partner LoeschPack, which adds secondary packaging in the form of individual cardboard boxes.

A classic in the field of forming, cutting and wrapping machines that has had a substantial market impact over many decades is the U machine range. Theegarten-Pactec's U1-DCW boasts a new operating speed of 2,000 articles per minute, 25% faster than in the past.

As part of its extensive service capabilities, even 30-year-old systems from Theegarten-Pactec or Nagema can also be overhauled and retrofitted to meet changing needs and technologies.

The EK4 wraps preformed candies in double twist wrap and remains unparalleled to this day with its 2,300 operating cycles per minute. An EK1 was also on display as an example of the company's retrofitting service. The first EK1 was showcased by Nagema in 1981.

Everything waffle bakers and confectioners need

Visitors to the Haas stand had plenty to see at this year's interpack where the waffle baking equipment specialist displayed more than 60 machines on over 1,400 m². The line-up at the show included a new Centre-Filled Cake Line that features a small footprint and high output rates. Centre-filled cake is a well-known product that originally came from the Japanese market.

In response to growing demand in the healthy snacking field, Haas' high-capacity Veggie Snack Ovens are designed to produce crisps, chips and crackers at rates of 100 to 300 kg/hour. And Haas' new MPRD (Multi Piston & Rotary Depositor) is a piston depositor with each nozzle continuously fed by its own piston. It offers new ways for using different fillings in different industries and makes the MPRD a one-of-a-kind solution for the wafer, chocolate, biscuit, confectionery and dairy industries. Even highly aerated masses can be deposited. Being the fastest depositor with highest weight accuracy per deposit on the market, the MPRD ensures stable and constant product quality. A CIP (Cleaning-In-Place) version designed especially for applications in the chocolate and dairy industry will be available in the near future.

The Laser Cleaning Unit offers a completely new method for cleaning baking plates gently and thoroughly. It can be used on all ovens from the SWAKN, SWAKT and SWAKT-HC series and is suitable for all baking plates, plate dimensions, all flat and almost all hollow wafer engravings. The cleaning unit is highly flexible and can be used with all new machines due to a standardised interface. Furthermore, it can be retrofitted to previous models.

The ECO oven from Haas uses a new burner type that consumes less energy and generates fewer emissions. The burners in the ECO system are mounted over the product line, making it easier to clean the unit since product can no longer fall onto the burners.

Other systems on display included the new FSTM-HC-2 high-capacity film spreading system for flat wafer products, the new Free-Shape Cutter that uses two cutters in a three-step process to produce wafers of any shape, the compact SWAK-GEKKO_HW hollow wafer baking oven for rectangular hollow wafer bars and pralines, the EWB-R fully-automatic baking oven series for wafer sticks, the new compact Batter Mixing Plant that includes a raw material feeding silo (flour or sugar) with a weighing function, the Haas-Meincke cracker line with improved sanitary designed, accessibility and cleanability, the Wire Cutter 6100 which can be equipped with a fixed wire cutting frame or an oscillating knife, the V60-2 system for single, twin or triple depositing, wire-cutting and extruding, and the SWM series for producing all kinds of cream-filled biscuit sandwiches, said Haas.

Variety with a universal filling unit

Known for their high quality, cost-effectiveness and stability, FRITSCH machines particularly stand out for their flexibility in production. FRITSCH lines allow customers to produce a wide variety of products with minimal changeover times.

FRITSCH's new MULTIFILLER S universal filling unit is interesting not only for medium-sized operations but also for industrial baking companies. It rounds out the two existing FRITSCH systems: the spot filling unit and the MULTIFILLER.

The MULTIFILLER S offers compact stainless steel construction and hygienic design for quick, wash-down cleaning. Up to six rows can be controlled individually for spot or strip filling as well as for continuous operation. Weight accuracy is guaranteed by a feature for setting filling material volume. The MULTIFILLER S can process different fillings with variable viscosities and particle sizes and compensates for differences in filling quantities between rows. The system features individual lane control with servo drive plus short product changeover times. As an option, the MULTIFILLER S can be delivered with a connection for automatic hopper filling, the company pointed out.

Sustainable packaging options for the future

BASF's high-performance Ultramid® (polyamide) is made from renewable raw materials, replacing up to 100% of the fossil resources used at the beginning of the integrated production process with certified biomass. The share of renewable raw materials in the product being sold is then indicated in the respective quantity. Third-party certification confirms that BASF has used the required quantities of renewable raw materials as ordered by the customer.

Ultramid is identical to polyamide in terms of formulation and quality. However its production generates fewer green house gas emissions and conserves fossil resources. Also, existing plants and technologies do not have to be changed in order to use it.

One user, Van Genechten, has developed WLC Food Safe, a new type of folding carton with a migration barrier based on BASF's Ultramid®.

Other BASF options include the Joncryl® FLX and Joncryl® HSL water-based product lines that enable the conversion from solvent-based to water-based technologies. These products are used for printing and converting flexible packaging such as potato chips bags, dairy lids and pharmaceutical blister packs. They meet the highest requirements as to printing quality, optimisation of substrates and packaging functionality.

Epotal® FLX products are used as lamination adhesives for flexible packaging. They are a water-based, efficient alternative to solvent-based and solvent-free PU adhesives. They do not contain aromatic isocyanates, do not cause any issues with primary aromatic amines (PAAs) and allow an immediate processing of the laminates.

BASF also offers pigments for printing on compostable packaging. The pigments are suitable for aqueous, solvent-based and UV-curing printing systems, comply with standards such as EN 13432 in terms of limit values for heavy metals and eco-toxicity and are approved for contact with food (ISEGA certificate), said the company.

Packaging for liquids and confectionery

Wolf's new VPC-L 250 vertical form, fill and seal machine for packing liquid products is a continuous packaging machine for packaging medium-to-large-volumes (up to 5l) of free-flowing, pourable or paste-like products in pillow, gusseted or block bottom bags made of any heat-sealable wrapping material or PE film.

The VPC-L 250 uses a special motor-driven roller system above the sealing jaws that ensures 100% product-free seals. The film is pulled from the reel and fed over a fully-adjustable oscillating crank to the forming shoulder where it is made into a film tube and closed by a vertical sealing station. A special draw-down system with a pneumatic tensioning device and automatic adjustment of the belts on the filling tube advances the film tube carefully downward to the closing station where the bottom seal of the empty bag and the top seal of the filled bag are produced at the same time. The VPC-L 250 offers IP 64, nearly wear- and maintenance-free operation, quick and easy size change, electronic control of bag length, photoeye control for accurate eyemark reading of printed film, hygienic design, a servo-driven sealing station and programmable control.

The cost-effective VPC-H 250 from Wolf was developed for packaging confectionery, including delicate products. With its low product drop height, the stainless steel VPC-H 250 offers speeds of up to 200 bags/min. Features include electronic control for bag length, photoeye control for accurate eyemark reading of printed films, servo-driven cross-sealing station and film drawn-down belts, adjustable sealing time, adjustable stroke of the cross-sealing jaws (depending on bag size), mechanically driven longitudinal jaws, operators-friendly safety doors with locking magnets. The VPC-H 250's control software can store up to 100 production programmes. All adjustments and settings can be made quickly and easily on the front side of the machine, said Wolf.

Filling, palletising and packaging technologies

The new BEUMER fillpac is equipped with a weighing unit that continually communicates with the filler neck via dedicated software. The automatic bag weight adjustment function determines the exact filling weight of the bags, ensuring exact filling. This increases packaging line efficiency as it is no longer necessary to remove underweight or overweight bags from the line. In addition, the quantity indicated on the bag always corresponds to the actual volume. The BEUMER fillpac is designed for capacities ranging from 300 to 6,000 bags per hour and can fill various bag types.

BEUMER's high-capacity layer palletpac stacks paper, polyethylene or polypropylene bags gently and precisely layer by layer to create very stable stacks. Multiple pallet loads created with the BEUMER palletpac can even be stacked one on top of the other to save storage space. Users can now easily adapt the palletiser to different pallet sizes without the use of tools. The BEUMER palletpac palletises bags up to a pack height of 2,400 millimetres, in all technically possible packing patterns, on pallets of any commonly used size. With the BEUMER palletpac, users can palletise up to 2,500 bags per hour and up to 5,500 bags per hour by using the high-capacity version.

Designed for stacking bundles such as bags, cardboard boxes, crates, canisters or trays safely and economically, the BEUMER robotpac is a space-saving, fully automatic articulated robot that performs complex palletising and de-palletising tasks reliably and efficiently. The fully automatic gripping systems are easily exchangeable.

Special tools enable simultaneous processing of secondary tasks, including sheet or empty pallet placement on the conveying systems or barcode reading. Should the needs of the user be so specific that none of the standard grippers is suitable, BEUMER can design a system specifically for such unique requirements. The BEUMER robotpac combines remarkable precision and availability with gentle product handling. An ultrasonic system provides accurate measures of the stacking height, making it possible to calculate the exact placing position of the packaged items and stack these precisely and carefully.

BEUMER's new stretch hood[®] high-capacity packaging system wraps loaded pallets with a special polythene film. This extremely weather-resistant packaging ensures the safety of the products during storage and shipment.

The BEUMER stretch hood can be equipped with the BEUMER OptiStretch system. The crimping bow, made of high-quality steel, swivels in even closer to the package, thus substantially improving the controlled application of film to the package.

The new system can also be equipped with the BEUMER multistretch system to enable the use of different films and a variety of packaging processes such as understretch or high-rack stretch.

The BEUMER Warehouse Management System (WMS) is a web server application which controls and coordinates the entire packaging process, storage and preparation for shipment of products. Control of materials flow, warehouse management and also the interface to the customer's superior ERP (enterprise resource planning) system are integrated in the system. All information from the packaging line, labelling, storage and shipment converges in the WMS, ensuring complete transparency of all products and processes.

The Warehouse Management System includes also a main control system for fork-lifts. This ensures that the palletised and packaged goods can be loaded quickly without prolonged intermediate storage. Therefore, the Warehouse Management System checks if the pallet is ready for collection at the belt conveyor, reads the barcode, assigns a specific storage space for the pallet and controls the corresponding fork-lift. During all of these processes, the BEUMER Warehouse Management System is continually exchanging data with the ERP system, the company announced.

Flexible, sustainable and cost-saving packaging

The KHS Innopack Kisters TSP A-H-TPFO packaging machine is extremely flexible in its use, saves costs during production and also sets new standards when it comes to sustainability. This packer from the Advanced series was designed to deal with all kinds of containers and packs and can process classic cans, glass and plastics containers as well as individually formed packs and pre-packed product groups. The KHS Innopack Kisters TSP A-H-TPFO can turn products into tray packs, tray shrink packs, pad shrink packs or shrink packs.

The machine is modular and thus also able to meet future demands and consumer requirements, with additional functional modules quickly and easily added if required. The innovative Advanced series also comes with a full range of added benefits. For instance, the cubic machine frame provides good visibility and great ease of operation. The machine's design makes it possible to operate the packer with up to four lanes. Centrally-suspended guide rails facilitate format changeovers.

One highlight of the machine on display at interpack was the targeted web edge control function for film processing, which is also implementable in multiple-lane production. Sensors permanently scan the position of the film. As a result, film widths can be precisely designed right down to the last millimetre. This greatly reduces the amount of material consumed compared to previous systems. Tests show that over 5% of film can be saved using film web edge control alone.

The KHS Innopack Kisters TSP A-H-TPFO has relocated the film spreader upstream of the film cutting and film wrapping stations, enabling reductions of up to 90% in the amount of compressed air required. Significant energy savings are also possible through new features on the shrink tunnel such as a new heating system, adjustable hot air nozzle equipment and an optional roller shutter that automatically closes the product infeed and discharge openings when the packaging machine has stopped, said the company.

Retain product quality, extend shelf life

Multisorb put the spotlight on its Drop-In, Fit-In, Built-In sorbent solutions which can be customised to meet specific food preservation challenges. Drop-in solutions – FreshPax[®], MiniPax[®], and StripPax[®] packets – are dropped into the product package or container where they protect food from the damaging effects of unregulated moisture and oxidation. These products help extend the shelf life of processed meats, bakery items, nuts, confections and more.

Multisorb's FreshPax and StripPax packets are inserted into product packaging using Multisorb dispensing equipment, providing the most reliable system for sorbent dispensing. Multisorb dispensing equipment offers easy integration of sorbent delivery into a variety of packaging lines. Many features and options are available.

To maintain fresh case-ready meat in prime condition, the MAPLOX[®] programme is an easy-to-use, low-oxygen packaging programme that extends shelf life by significantly reducing oxygen inside the master bag and primary tray with the use of a Drop-In solution - FreshPax CR packets. For higher-speed applications, such as ground beef, FreshPax CR dispensers are available.

Fit-in solutions - FreshCard[®] oxygen absorbing multifunctional cards, and FreshMax[®] self-adhesive oxygen absorbers - eliminate loose sorbent sachets and canisters, protecting the flavour, colour, aroma, and shelf life of processed meats, baked goods, dairy products, snack foods and more.

Intelligent design for confectionery equipment

WDS exhibited its FSC (Flash Shell Cooling) cold stamping process. For hollow chocolate figures FSC offers an effective alternative to conventional production with classical shell forming. WDS has continued developing this method and it is now possible to form very large, complex shells with precision in just a few seconds. The process produces a uniform shell thickness of less than 2mm. It

also enables the production of other chocolate products such as bars, tablets or pralines with this type of machine.

The latest generation of WDS lab depositors is equipped with special depositing heads that allow the production of articles with up to three different masses.

Celebrating its 100th anniversary this year, WDS presented its new **SMARTEFFICIENCY** concept at this year's interpack. This forward-looking efficiency-driven concept provides the starting point for all WDR machinery and plants. Its aim is to ensure the best cost-benefit ratio for customers throughout each machine's life cycle by applying design principles that target effectiveness and efficiency and implementing intelligent production solutions that use energy-efficient components and optimised processes.

SMARTCONSTRUCTION is an element of the **SMARTEFFICIENCY** concept that uses modular design for maximum flexibility, ease of operation and good accessibility. Thanks to the EasyClean concept developed by WDS, the time required for mass changes and cleaning is reduced to a minimum. All parts to be cleaned on a WDS confectionery machine such as a mould bar, dosing unit or even an entire mass hopper can be disassembled easily and quickly and driven with a service cart to a cleaning area. At the same time, a second set of the parts to be cleaned can then be installed in their place 'on-the-fly', reducing changeover times to less than 15 minutes.

The **SMARTENERGY** element of the **SMARTEFFICIENCY** concept focuses on exploiting energy-saving potential. For example, conventional three-phase motors are replaced by the latest servo-electric drives to reduce power consumption. The use of intermediate circuit coupling also helps reduce energy costs. Motors in braking mode release energy which is then transferred to other motors via the intermediate circuit. Further savings can be achieved by selectively switching-off parts of the system that are not in use. Other areas of focus for **SMARTENERGY** include reducing the weight of moving parts while maintaining or improving stability; optimising kinematic design for more efficient movement; replacing pneumatic consumers with servo-electric actuators; and creating data and function interfaces with energy management systems.

Packaging chocolate, chewing gum and confectionery

Every chocolate product requires the right feeding system and LoeschPack has several different types to offer - the LOMATIC automatic feeding and distribution system for bars, the IR-2D two-axis transfer unit or the chicane conveyor for small chocolate products, vibratory feeders for roll wrapping round chocolate pieces and feeding systems that can be individually tailored to the respective application. The LOMATIC can be used for almost all chocolate products. It features a standard belt width of 400 - 1200 mm and a maximum feed rate of 35 moulds per minute or 150 rows per minute.

The compact LRM fold wrapping machine wraps enrobed and moulded chocolate bars and tablets, small tablets and Napolitains, wafers and similar products in one wrapping at speeds of up to 350 packs per minute.

The LRM-S single-station fold wrapper offers a performance range of up to 600 packs a minute. The LRM-S has proven successful in combination with LoeschPack LTM-K-SA for multipacks.

The RPM-S single-station roll wrapping machine features product-friendly loading mechanisms such as a vibratory feeder and the RPM-S core machine. The system guarantees hermetically sealed roll wrapping of up to 300 rolls per minutes with round chocolate products and up to 400 roll per minute with tablet-shaped products.

In the secondary packaging field, LoeschPack offers the LTM-K fold wrapping machine for pre-packaged chocolate bars in cardboard labels, the LCM for cellophane sealing of multipacks, and the LRM-DUO twin-station fold wrapping machine for small chocolate multipacks in the high performance range.

For tertiary packaging needs, the modular WKM-2 wrap-around display cartoner offers speeds of up to 65 cartons per minute, while the LRK top-loading robotic cartoning system is used for applications that require high flexibility and precision in pre-grouping products in display folding boxes. It offers speeds of up to 80 display cartons per minute.

The automatic high-performance GW06 fold wrapping machine is the latest machine generation for primary packaging of TabGum chewing gum sticks and can pack up to 2,500 sticks a minute. The GW06 optionally features rotating breakers for single sticks, particularly for multilayer gum. This presents an advantage as no shear forces impact on the different layers.

The servo-driven, cutting-edge LOGAMAT fold wrapping machine packs traditional chewing gum sticks at speeds of up to 1,300 sticks a minute. Chewing gum sticks can be individually wrapped in paper-backed aluminium foil, optionally stacked and then wrapped in a paper sleeve. Alternatively, they can be transferred to a downstream multipack cartoning machine such as the LRM-DUO to produce innovative pack styles.

The LHW1 packs chewing gum pellets in sticks in a sealed full wrap at speeds of up to 400 packages a minute.

In the confectionery segment, the RPM-S is a completely new, modular roll wrapping system with particularly product-friendly feeding mechanisms and the RPM-S core machine. The RPM-S packs round chewing gum products, tablet-shaped and oval hard and soft compressed tablets, wine gums and round boiled sweets in hermetically-sealed roll packs.

The LRM-DUO twin-station high-performance fold wrapping machine packs pre-grouped products in cardboard box multipacks which are then wrapped in tightly sealed cellophane at rates up to 230 multipacks per minute. It can also fold wrap up to 200 chocolate bars per minute.

For smaller-sized multipacks for traditional stick chewing gum, TabGum and other rectangular pre-packed chewing products, LoeschPack developed the LSW which groups individual sticks and then wraps them in hot-sealable film. The flexible concepts allow the production of flat, stacked or upright packs. Up to 500 multipacks per minute can be produced.

The WKM-2 is a compact, high-performance display cartoning machine capable of speeds of up to 65 cartons a minute. The extremely flexible wrap-around cartoning machine in hygienic design packs accumulable and non-accumulable articles with an output of up to 65 cartons per minute in open display cartons. It can be used for chewing gum, confectionery and chocolate articles.

Handling chips, sticks, crackers and fresh or frozen foods

After stackable chips have come from the fryer through the seasoning station and have been flipped, Hastamat's distribution chain link conveyor transports the chips to the dosing station. Ejection flaps on each lane at the end of the chain link conveyor remove any rejected product. The chain link conveyor comes with eight to 24 lanes divided between one to three blocks.

At the dosing station the product streams are distributed across the individual locks of the dosing station. Product is dosed precisely on weighing belts to prevent underfilling and minimise give-away. During the weighing process, each lane is autonomous and feeds onto the weighing belt.

In this segment, there are six to nine lanes per block. The dosing range is 40 - 200 g. No mechanical conversion is necessary for format changes.

In the can filling station, trays and/or cans of different sizes are fed in, buffered and then filled. Using vibration, the stackable chips are fed up to the horizontally positioned can and inserted mechanically into the can. After filling the can is uprighted and forwarded to the transport system.

Cans with a diameter of 64 - 73 mm and a height of 90 - 260 mm can be processed. A station can be equipped with six to nine lanes per block, with an output of up to 15 cans per lane/minute. Format changes require less than five minutes per block.

The system also has a buffer for trays. The trays are unstacked automatically and fed into the filling position. After filling, the trays are transferred along with the cans to the secondary packaging station. The system can process trays with a length of 90 - 230 mm and cans with a height of 120 - 260 mm and diameter of 64 - 73 mm. With six to nine lanes per block, it can process 15 trays/cans per minute/lane.

For sticks and crackers, the Hastamat RM series of vertical form, fill and seal machines offer outputs of up to 250 bags per minute. The cascades, rotary plates, pivoted bins and swivel transfers used in the transfer systems ensure that product is conveyed gently and directly. Gravimetrically-controlled distribution systems and buffers minimise product damage and increase the productivity and efficiency of the entire system. The feedback control system guarantees a constant product stream to the packaging process at all times. A data exchange with the packager's BDE system ensures complete monitoring and control of the packaging process at all times.

Hastamat's CP high-performance combination weighers precisely weigh and count piece and stick-shaped products. The patented dosing process increases output for stick-shaped products by up to 40% over conventional weighers. With a simple change of the format parts, sticks and bulk goods can be weighed or counted on the same weigher.

The ZA series of high-performance counters were designed for the gentle and precise counting of high-quality, sensitive stick products like chocolate sticks. Product is fed into the modular counting stations using synchronised bins, special bucket conveyors, feeding chutes or belts.

Hastamat distribution systems for fresh and frozen foods are optimally designed for cleaning in wet areas. This special construction guarantees short downtimes even during product changes. The connected buffer systems guarantee trouble-free production with automatic return of the products to the packaging process. Hastamat's CP series of high-performance combination weighers precisely weigh and count a wide variety of products. The electronics are separate from the frameless machine housing, a feature that optimises accessibility and reduces cleaning effort. The IP 65 protection class machines are specially designed for operation in wet areas. The control cabinet can be positioned anywhere, including outside of the product area. All format parts can be removed for cleaning or changed without tools, explained Hastamat.

Mixers, dividers, roundmoulders and ovens

In the mixing segment, the President wheel-out spiral mixer from WP BakeryGroup uses the proven 3-zone mixing method. This creates fluffy, easy-to-process dough as the mixing process is performed in three separated areas. This method adds more air – in other words, more oxygen – to the dough to create dry, plastic and fluffy dough.

President mixers are available in six sizes for the processing of 75 kg to a maximum of 250 kg of wheat, mixed wheat, mixed rye and rye dough.

The TEWIMAT dough divider and roundmoulding machine was designed for industrial 24-hour operation and, depending on the weight of the dough pieces, can achieve an hourly output of up to 3,000 pieces/row. It is available in two versions: the TEWIMAT L with three to six rows, and the TEWIMAT S with three to ten rows. Its weight range is between 28 and 300 g per piece, depending on the number of rows.

The TEWIMAT's suction dividing technology works without intake rollers or dividing blades and allows even delicate dough structures to be maintained. The drum moulding system also handles the dough very carefully. A range of interchangeable chamber drums are available for different weight ranges.

The V 700 SR/CleanTec dough divider was developed for medium-sized to industrial bakeries that produce a wide range of products and therefore process different doughs, make frequent product changes and place high demands on weight accuracy. The V 700 can produce up to 9,600 pieces per hour in a weight range from 25 g to 2,550 g. The machine can produce all types of bread (including gluten-free), as well as pizza, high-protein bread, toast, baguette, pan bread and rye bread.

The heart of the V 700 is its innovative dough-dividing chamber, which is made from a high-grade material that is resistant to acidic, sweet and aggressive ingredients. This almost doubles the service life of the dough-dividing chamber compared to conventional products.

The hydraulic unit of the dough dividing mechanism ensures that the pressure is minimised when back-pressing the dough. Consequently, very soft doughs with a long bulk fermentation time can also be processed without difficulty.

The VARIOBAKE SNK tunnel oven from WP can be configured for a very wide product range because both radiation and convection are used: The air heated by a heat exchanger is directed through a blower into the nozzle boxes for upper and lower heat and then blown through nozzles into the baking chamber. Not only can the convection intensity can be set; the ratio of radiation to convection can also be adjusted.

One variant of the tunnel oven is the VARIOBAKE SNK-DG. "DG" stands for directly gas-heated. The air circulated in the baking chamber is heated by a line burner and passed directly into the nozzle boxes and from there into the baking chamber. This oven variant can be operated at higher temperatures, which also enables the baking of products such as crackers and flat breads.

The ZPM is the only industrial continuous mixing system with shafts that run in the same direction.

This allows it to perform a special dough movement, enabling its use for virtually all types of dough. Its thorough yet gentle mixing and kneading process produces dough of consistently high quality.

The double-jacket mixing chamber and the hollow-cast mixing shafts can be cooled or heated to maintain the temperature required during the mixing process. It is also possible to apply a vacuum for mixing special dough.

Despite its high output of between 500 and 7,000 kg per hour, the ZPM mixer features a compact design with a small footprint that is beneficial for bakeries with limited floor space.

With its heavy-duty drive, the TITAN spiral mixer from WP Kemper ensures high throughput and optimal mixing results at the same time. Equipped with a double spiral, the TITAN mixer model 250 is capable of processing 3,200 kg dough per hour; the smaller model 150 variant can handle up to 2,000 kg per hour. If very gentle mixing is required, the throughput can be reduced and very sensitive or challenging dough can be carefully produced with the single spiral mixing tool. The TITAN mixer is suitable for all kinds of wheat, mixed wheat, rye and mixed rye doughs.

IDA, the new continuous fryer developed by WP Riehle, produces deep-fried doughnuts in various shapes on an industrial scale with the best artisan quality: large volume, the desired white ring at the circumference of doughnut balls, perfect crust and low fat pick-up. This high-performance unit comes in various sizes with 15 to 40 baking rows. It has an hourly capacity of between 900 and 4,000 doughnuts with a frying time of six minutes.

Innovative process technology for productivity gains

A leading partner to the global food and beverage industry, SPX provides innovative process technology solutions designed to help improve performance and profitability, giving its customers the edge in increasingly competitive markets. At Interpack 2014, SPX showcased a wide range of products from its well-known brands in food and beverage processing, including Anhydro, APV, Bran+Luebbe, e&e Series, Gerstenberg Schroeder, Johnson Pump, Lightning, Seital Separation Technology and Waukesha Cherry-Burrell.

SPX has in-depth experience in food and beverage applications, including the production of margarine, butter, mayonnaise, ketchup, sauces, dressings, baby food, oils & fats, dairy products, wine, milk and coffee powder. Its vast product portfolio ranges from single components to complete, integrated food processing equipment and fully-customised solutions with core technologies which include scraped surface heat exchangers, homogenisers, separators, evaporators, dryers, mixers, blenders, pumps, valves and equipment for emulsification and butter making. SPX also offers the use of its Innovation Centres and pilot equipment to optimise processes, develop new products and test systems prior to production scale-up.

Solutions for all products

AcmaVolpak, a member of the Coesia group, exhibited a complete line for coffee, consisting of the Acma Qi320 capsule filler, the brand-new Acma MiniWrapper and the R.A Jones Legacy3, the latter dedicated to the secondary packaging, all using FlexLink conveyor systems.

Strong interest was also shown in the Tecnomeccanica T4 Modula which produces double-chamber 'knotted' bags. In the confectionery and bakery segment, AcmaVolpak featured its Sp1 flowpacker, in combination with an advanced feeding unit, and the M888, patented multi-style automatic wrapping machine, that is both fast, flexible and suitable for a wide range of pre-formed candies and chocolate products. In the area of flexible packaging, Volpak offers the SC-190, part of the new range of HFFS machines with continuous motion technology, and the Volpak SI-280 which was designed to maximise overall equipment effectiveness and is capable of working in triplex configurations. Volpak also demonstrated the Enflex-brand STD-22 for customers looking for ease of use and low maintenance cost.

Dosing, filling, packing

OYSTAR Hassia recently added the ergonomic P300 FFS machine for mini-portions and cups to its product portfolio in the lower-to-mid-level output range. The P300 can handle up to 35 strokes per minute depending on format and product characteristics. In addition, the variety of dosing systems makes the machine suitable for a broad range of applications for all liquid and pasty food and dairy products. The P300 can handle all thermal plastic and sealable materials, including PET and PP for the bottom web. The technical design also makes it possible to use thinner packaging materials, to fill products of differing consistency with the exact volume and placement with minimised waste.

OYSTAR Hassia's new S450 FFS machine for StickPacks is suitable for a wide range of applications: In addition to liquids and pasty products, the machine can handle powders and granules with customised filling systems. It can produce StickPacks up to 50 mm wide and 200 mm long in various designs.

OYSTAR Hassia also offers a wrap-around labelling system in 4-row version which is appropriate for cups of circular to rectangular basic shapes and usable for up to 48-up format. Besides significantly enhancing output, and thus profitability, at a speed of 30 strokes per minute, the wrap-around labelling unit is compact and also features an attractive price-to-performance ratio.

OYSTAR Erca's popular M-F 14 FFS machine for multipacks can now also produce cups made of polypropylene (PP). Not only does this reduce costs, it offers the advantage that individual cups are significantly more robust and the multipacks can be separated more easily. The PP option can be seamlessly integrated into existing M-F 14 machines. The compact M-F 14 produces up to 12,000 cups per hour. It also fills a wide range of products, from tomato paste to fruit compote all the way to conventional dairy products.

OYSTAR Group's new MFS 30 filling and sealing machine for pre-formed cups with a chainless drive allows automated format changes in less than 20 minutes, significantly improving equipment availability for production and consequently the OEE. Maintenance costs are also reduced because there is no need to replace the transport chain or carry out any of the adjustment work needed for chain stretch. The MFS 30 can be equipped with up to three dosing systems. Equipped with a single dosing system, the machine transports preformed cups with a fill volume of up to 600 ml and a cup height of up to 150 mm. It can process up to 32,400 cups per hour. The machine operates without lubricant and using optional UV-C disinfection for cups and lids makes it ideal for hygienic production applications.

OYSTAR Benhil's new Ecopack F1000/F1500 wrapping machine features a modern drive concept, CIP-capable dosing system and exceptional filling accuracy. In addition, the front-fold principle saves up to 30% packaging material over the conventional bottom fold.

OYSTAR A+F's new FlexoPack packer uses a 4-axis Delta 3 robot to group portion cups, thermoformed trays, pouches and blister packs into cartons. It is also the perfect packing solution for products in secondary packaging. The packer can handle trays and wrap-around cartons as well as

cases with lids and two-piece trays. Depending on the box type, the packer can provide an output up to 40 cartons per minute in single lane and 70 in dual lane, the company reported.

Green supply chain management

Global leader in the manufacture of label papers and flexible packaging papers, Brigl & Bergmeister presented PackPro 7.4, the latest addition to its high-quality, one-side coated flexpack product family. PackPro 7.4 is made from chlorine-free bleached cellulose without the use of any optical brighteners. Green Supply Chain Management plays a major role at B&B. Consequently, the entire PackPro series revolves around environmentally sustainable flexible packaging solutions, providing competitive advantages for FMCG products, brand reputation in terms of proactive sustainability, and proven innovation when it comes to minimising risks.

B&B firmly believes that those customers who are increasingly concerned with environmental issues such as global warming will also be the customers who will in future increasingly enquire after the origin of products.

Implementing GSCM entails numerous benefits for FMCG products. However, many people still erroneously believe that environmentally sound action involves additional costs only. Yet it has been demonstrated that the benefits inherent in sustainable, environmentally sound packaging represent, in the medium to long term, a positive net effect on the financial performance and brand performance of companies.

Pending approval by relevant authorities, Brigl & Bergmeister recently acquired the Uetersen paper mill from Stora-Enso Group. The paper mill, (formerly known as Feldmuehle Papierfabrik) manufactures one-side coated specialty papers (labels and flexible packaging) as well as high-quality two-side coated graphical paper and board and has a production capacity of 240,000 tonnes per year. In 2011, Roxcel paper trading group purchased B&B with its paper mills in Niklasdorf (Austria) and Vevèe (Slovenia) as their first move into the paper production field. The annual capacity of Niklasdorf is 78,000 tonnes, and that of Vevèe is 120,000 tonnes of specialty papers. Among the company's customers are printers and converters that mainly supply the beverage and food industry with high-grade label and packaging papers.

Confectionery production line

A specialist in integrated production solutions for the confectionery industry, Hosokawa Bepex presented for the very first time a complete confectionery production line with hygienic design from start to finish. The line featured the Ter Braak universal kitchen, Bepex-Hutt forming and cutting machines, the Kreuter enrobing machine and the cooling tunnel.

The versatile Ter Braak universal kitchen can prepare virtually any type of mass. It offers convenient operation, hygienic design for easier and faster cleaning, a minimum number of parts, expansion options, and reliability for trouble-free operation for years to come. The Rockwell PlantPax™ process automation system uses a Rockwell ControlLogix™ safety SPC including SCADA System Factory Talk SE™.

Hosokawa Bepex's forming machinery works entirely without pressure when producing pressure-sensitive or whipped masses.

The new universal form press drive has been completely redesigned. The smooth roller former GP 200 N can be operated on the drive to form nougat. All three rollers are individually adjustable for the respective production requirements. Servo drives (Kinetix™5500), Safe PLC (ControlLogix™ L71), Ethernet network and RAPID line integration function block ensure greater flexibility and safety.

In the area of cutting technology, Hosokawa Bepex's strand slitter design increases both hygiene and safety. The primary cutting surface is still on the counter roller but as in previous designs slitting can still be conducted on the in-feed conveyor when needed for certain products. As a result of the machine redesign, adjustments are easier to make and access for cleaning and maintenance is improved.

The flexible, hygienic belt conveyor offers a broad range of groove widths, starting at 12 mm. Belts and spacing configurations can be easily changed with a set of change parts. In addition to the adjustable belt disc, Hosokawa Bepex also offers a one-piece guide roller which is especially suited to allergenic cleaning. Access to all critical points is assured because of the rotatable clamping unit of the belt.

With the MS guillotine cutting machine, it is possible to use different cutting modes such as FAST-CUT, BOX-MOTION, and PINCHCUT without making any mechanical changes to the machine. Almost every speed range can be achieved from 10 cuts/min to 200 cuts/min. The redesigned cutting machine is now completely servo-driven and equipped with an intelligent system. Five servo axes guarantee perfect cutting of all confectionery products.

Hosokawa Bepex has completely redesigned its enrober with ease of access, preventive maintenance and hygienic design as its primary focus.

Hosokawa's redesigned cooling tunnel is more efficient and even more hygienic than its standard version. The HD cooling tunnel is made completely from stainless steel, all welds are continuous and the specially designed coil sections offer air speeds up to 12 m/s.

The coil section and hoods have been upgraded as well. Both feature continuous welds and removable silicon seals. The additional air chamber reduces the return air velocity to a minimum prior to the MERV 14 filtration which increases the efficiency. The catch pan and condensate piping can be removed for cleaning.

The blowers and motors are constructed of stainless steel, the air handling zone is completely separated from the product zone and all unnecessary components are located outside the airstream.