

MEATING POINT

magazine

SUSTAINABLE TECHNOLOGY, PROCESSING & PACKAGING



CONSUMER CONFUSION

A STRESS-FREE JOURNEY
FROM SHED TO SHACKLE

FOOD SAFETY
MANAGEMENT

HYGIENIC MEAT PROCESSING ON
STAINLESS STEEL CONVEYORS



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We welcome all guests to CFIA, in hall 8, at booth B24.A23, Parc Expo Rennes, France.

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MEYN
Innovating the future

Dear reader,

Now that Brexit is official, the most heatedly discussed question in the global meat industry on the impact and possible pros and cons of Brexit for the industry is still ongoing. The EU is the UK's main meat trading partner. Over 80% of Britain's imports came from the EU, with the Netherlands, Ireland, Germany and Denmark as main suppliers. On the other hand, meat and livestock make up a considerable share of UK-EU27 trade, and the UK plays a central role in the EU meat market, as a supplier and, more importantly, as a consumer. While the EU is currently the most important trade partner for meat, it is possible that the UK will seek to expand competition by allowing additional imports from other countries, such as Brazil and the US. However, Britain's high standards in terms of animal welfare and food safety may be a hurdle to expand trade agreements.



Jenny Smart

Although the negotiations are not finalised yet, as those on agricultural commodities such as meat are always the slowest and the most complex, both entities are facing certain fears and challenges. The most significant task they have is to decide what the relationship will look like, and how it will change after this long and difficult divorce. How the trade relations will be affected will depend on future custom duties. Yet, there was some relief in the industry, after list published on 13th March 2019 provided an overview of import duties and quotas that would come in force after Brexit without agreement with the EU - 27. According to the list 87% of UK imports are free of protectionist measures. Another good news is that tariffs which will apply to meat and sausages will be much lower than initially expected, which makes the situation seem much more favourable than originally assumed. The standard tariffs for both pork and beef would be significantly lower too than the current EU tariffs.

These alone give some ground to recapture the spirit of optimism, as Brexit doesn't mean that the EU - the world's largest trading block and the UK - a large economy will be any less reliant on each other to continue their own interests, which gives some ground for optimism. Both for importers and exporters alike, the deal reached when Brexit is finalised will have wide-reaching ramifications, though could work out favourably for all involved.

Enjoy your read!

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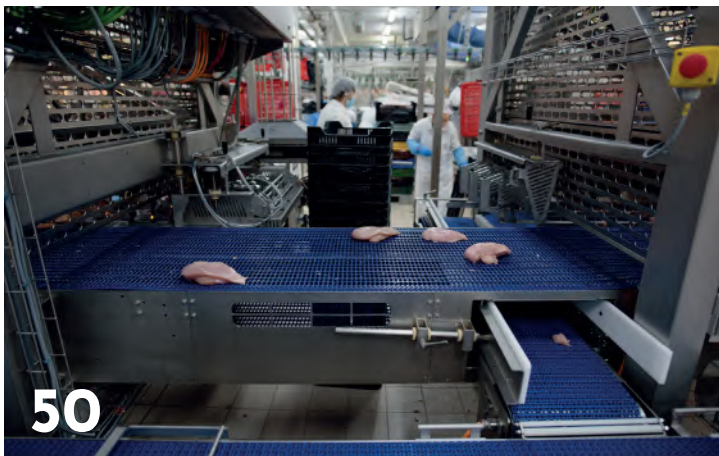
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MICHEL PICANDET IS APPOINTED EXECUTIVE VICE PRESIDENT AND HEAD OF TOMRA FOOD



Michel is a French national and has an Engineering degree from the University of Clermont-Ferrand as well as a Master in management from ESCP Business School.

Michel Picandet has been appointed Executive Vice President and Head of TOMRA Food. He joined the company on January 1st, 2020 and will be based at the TOMRA Food headquarters in Leuven, Belgium. In his new role, he will be in charge of the company’s three brands: TOMRA Food, Compac and BBC Technologies.

Stefan Ranstrand, President and Chief Executive Officer of TOMRA, stated: “I am delighted that Michel is joining our management team. He is a highly strategic, global business executive with strong experience in the food and beverage industry, as well as capital equipment and related services. I am confident that under his leadership, the TOMRA Food team will continue to build on our three pillars of technical leadership, food trust and digital transformation, in order to achieve a more circular economy and safeguard the future of food. Michel and the global team will drive to always deliver high customer value and satisfaction, proving TOMRA Food to be a solid long-term partner focused on helping our customers increase their competitiveness and profitability.”

On being appointed Michel Picandet stated: “I am thrilled to have been given the opportunity to lead a forward-looking company such as TOMRA Food, which is spearheading the resource revolution as a sustainability leader. This is a company that continually strives to find innovative ways to reduce the world’s waste and optimise the use of its resources, and I am looking forward to the challenge of helping customers reduce food waste and improve yields in their operations, and build a reputation for their sustainability credentials.”

Michel Picandet brings to his new role a strong track record developed in various roles of increasing scope and responsibility covering markets across the world.

www.tomra.com

BETTCHER INDUSTRIES, INC. ANNOUNCES THE APPOINTMENT OF TIM SWANSON AS NEW CEO



Tim Swanson New CEO Bettcher Industries, Inc.

Bettcher Industries, Inc. (“Bettcher”), a leading developer and manufacturer of innovative equipment for food processing,

foodservice, industrial, medical, and other operations, has announced that Tim Swanson has joined Bettcher as its Chief Executive Officer. Swanson has also become a member of Bettcher’s Board of Directors. Swanson took over from Don Esch, who retired at the end of 2019 after having served as Bettcher’s CEO since October of 2014. Esch will continue to serve as a member of Bettcher’s Board of Directors.

Tim comes to Bettcher from the Barnes Group where he served as President of the global Engineered Components business. Prior to that, he spent 10 years at Illinois Tool

Works (ITW) serving in General Management roles within the Global Automotive and Welding segments. AT ITW, Tim’s businesses focused on creating value through innovation and customer intimacy to achieve above-market growth. Tim began his career at Whirlpool Corporation.

“Tim is a talented executive with a demonstrated history of driving growth, innovation and operational excellence in market-leading, global businesses”, said board chair Peter Taft. “We are welcoming a new leader who will embrace the culture and capabilities that have contributed

to Bettcher's historical success, while bringing the skills to guide it through its next chapter of growth and expansion."

"I'm both pleased and comforted to be succeeded by such a proven and capable leader," said Don Esch, former CEO and current Director. "Tim's impeccable track record and insightful perspectives

give me tremendous confidence in his ability to lead Bettcher during this transformative and exciting time for the company, its employees and its customers."

"Within the Bettcher family of businesses, I see an enterprise that puts its customers and employees first and has a rich heritage of delivering value

through product innovation," said Tim Swanson, CEO of Bettcher. "I look forward to extending our market-leading reputation on a global basis by leveraging our differentiated product portfolio and acquiring new capabilities that address customer needs. I'm thrilled to join the Bettcher team."

www.bettcher.com

HANDTMANN GROUP OF COMPANIES ACQUIRES INOTEC



Signing of the contract Handtmann and Inotec

The Handtmann Group of Companies acquires the Inotec Group and thus strengthens the international sales organisation of both companies.

Inotec is a leading manufacturer of innovative mixing and emulsification technology for the food processing sector. Tying and separating machinery for sausage production complement the product range. The company was established in 1988 and employs around 270 people at four locations in Reutlingen and

Herzebrock-Clarholz (Germany), Hluk (Czech Republic) and Saverne (France).

As an independent company within the Handtmann Group of Companies, the Handtmann Maschinenfabrik develops and produces filling and portioning systems for the food production and is the world leader in the meat processing segment.

The merger will allow the realisation of automated production lines across several process steps. "We

thus offer our shared customers significant added value. And at the same time, the international sales and service organisations of both companies will be strengthened. Moreover, we have identified synergies for the development of additional fields of application outside the meat processing industry. Both business units, and above all our customers, will benefit from it," says Company Director Thomas Handtmann.

Inotec will continue under the operational leadership of the current management team. Frank Gekeler, Managing Director of Inotec, is pleased: "Handtmann and Inotec have already had a successful sales cooperation in the USA and Canada since 2017, and since last year also in Russia. The products complement each other very well and the philosophies of both companies are on the same wavelength when it comes to quality, innovation and culture. Being part of the Handtmann Group of Companies thus lays the foundation for Inotec's positive long-term development, offering excellent prospects both for our customers and our employees as a result."

www.handtmann.de

BETTCHER ESTABLISHES DIRECT SALES, SERVICE AND PARTS STRUCTURE FOR ITS MEAT PROCESSING CUSTOMERS IN POLAND



Bettcher team responsible for the Polish market. From left to Right: Rene Hansen - International Sales Manager; Anna Zdanuk - Customer Service; Daniel Białożył - Senior Customer Adviser; Przemek Kotewa - Senior Customers Adviser

Bettcher GmbH announces that it is establishing a direct sales and service structure for its customer base in Poland.

“The meat industry has always had a strong presence in Poland and continues to grow each year. By implementing the direct sales of

equipment and parts, as well as factory-direct service, will supply our customer base with an even higher level of individual and expert support, as well as a first-class service with rapid response times,” expresses René Hansen International Sales Manager of Bettcher GmbH.

Customers in Poland will also have quick and easy direct access to Bettcher equipment and parts housed at Bettcher’s European facilities in Dierikon, Switzerland.

The company’s innovative offerings include two products introduced recently. The Quantum Flex® Trimmer is a lighter-weight and faster tool for improved cutting efficiency. The handpiece is compatible with any of Bettcher’s motor offerings: Quantum, UltraDrive® and UN-84.

No matter which Bettcher system is installed in a plant, the Quantum Flex handpiece adapts seamlessly. The new design utilizes the RPMs of any Bettcher motor, resulting in increased blade speed and less operator fatigue along with easier cuts and higher meat yields.

The Quantum Skinner®, another recently introduced product, leverages the proven power and efficiency of Bettcher’s Quantum Motor and Driveline combination to improve overall skinning performance in meat, poultry and seafood processing plants. Designed as a direct replacement for similar pneumatic products, the Quantum Skinner provides a quiet, safe and productive skinning experience while reducing energy costs significantly.

www.bettcher.com

TYSON FOODS INITIATES COALITION TO ADVANCE THE FUTURE OF SUSTAINABLE PROTEIN

Tyson Foods, Inc. announced the creation of the Coalition for Global Protein, a multi-stakeholder initiative to advance the future of sustainable protein.

To mark the launch of the Coalition, Tyson Foods is convening leaders from the global protein industry, which includes all forms of protein, as well as academia, non-governmental organizations and financial institutions this week at Davos, Switzerland, alongside the 50th World Economic Forum Annual Meeting. The goal is to unite stakeholders across the food and agriculture sector to identify

and implement new and creative solutions to sustainably feed the world’s growing population.

“Efforts to make the production of high-protein foods more sustainable must continue,” said Dr. Haddad, executive director of Global Alliance for Improved Nutrition.. “These foods, many from animal sources, are vital for the healthy growth of young children, especially those who already have poor quality diets. So, it is vital that their production can be undertaken in a way that respects planetary environmental boundaries. This Coalition promises

to be a valuable addition to our collective efforts to square this circle.”

Sustainability throughout the food ecosystem is fundamental to Tyson Foods’ core values, which call on the company to “strive to serve as stewards of the resources entrusted to us.” The company has previously committed to improved land stewardship practices on two million acres of corn, partnered with the World Resources Institute to set Science-Based greenhouse gas reduction targets, committed to reduce water use intensity

12% by 2020, and is working with PROFOREST to identify deforestation risks across the company's global supply chain. "We're focused on uniting the

world's most influential, food-focused stakeholders around a shared purpose to build a future of protein that is sustainable and equitable across global

communities - at every link in the supply chain," said John R. Tyson, chief sustainability officer of Tyson Foods.

www.tysonfoods.com

MARELEC ENTERS INTO STRATEGIC COLLABORATION WITH SCANVAEGT SYSTEMS



Piet Rommelaere
Director MARELEC CEO

greater value and improve their competitiveness.

Scanvaegt Systems and MARELEC have had good cooperation for over a number of years in the sales of weighing solutions for the marine sector in Denmark. With the new strategic collaboration, the customers will get access to the combined product programme of Scanvaegt and MARELEC, including complete solutions. Combined with the extensive service network that Scanvaegt offers all over Europe, the new collaboration will provide great gains for customers.

that this strategic collaboration has become a reality and we look forward to being able to offer the market and our many customers in Denmark, Norway, Sweden, Germany, Finland and Austria new optimised solutions that support the changed needs of the market, both with our direct customers and with consumers. The solutions offered in Poland, Romania and South Africa will be a teamwork between our companies and the local MARELEC distributor.

An Extra Dimension to the Products

MARELEC has been in the market since 1983, and Piet Rommelaere, Director and Co-owner, says about the new collaboration: "We see a number of similarities between MARELEC and Scanvaegt. They are comparable in size and they have the same professional approach to customers. They can open the market for us in Scandinavia and they have a competent and well-developed service network all over Europe that can add an extra dimension to our range of products. In addition, we know them already from the collaboration concerning the marine sector in Denmark. A collaboration that has been good. Therefore, I look forward to contributing to offering the best service to the market and I am very pleased with the new formalised collaboration."

www.marelec.com
www.scanvaegt.com

The Customers Win

With the new strategic collaboration, the food industry will get one supplier with overall experience of more than 100 years within complete solutions with hardware, industrial software and service. Thus, the customer will get the value chain from the same supplier at a competitive price.

The food industry has an ever increasing need for automation - both in consideration of food safety, the environment and costs. The trend with more single families and less food waste results in a need for meat, poultry and fish products as well as plant based protein products in more variants/portion sizes than we know today.

Jan Elgaard, CEO from Scanvaegt Systems says: "We are pleased



Jan Elgaard
Scanvaegt Systems A/S

MARELEC and Scanvaegt Systems A/S enter into strategic collaboration concerning hardware and software solutions for the food industry. Both enterprises are market leading suppliers of automation solutions for primarily the food industry worldwide. With the new strategic collaboration, the customers are offered an enlarged programme of process solutions that will create

FROM FILLING AND PORTIONING THROUGH TO PACKAGING

Handtmann Minced-Meat System for Premium-Quality Minced Meat Products

Handtmann production solutions for minced meat provide high evacuation, gentle grinding and highly accurate portioning. Characteristics that are key for the production of fresh, top-quality minced meat. The Handtmann minced meat portioners, in conjunction with Handtmann vacuum filling and inline grinding system technology, make up the ideal production that meets the stringent requirements for modern minced meat production. Hygiene and bacteriological aspects play a significant part in this. Since the Handtmann inline grinding technology does not generate any substantial product heating and the minced meat portioning lines can be directly integrated into downstream packaging units, the risk posed by heating or contamination through manual handling is practically eliminated. Handtmann is therefore the right choice for those who value first-class minced meat quality. An automatic process without non-productive times or risk of contamination. From automatic feeding, through to the constant vacuum filler product flow and exact portioning using the minced meat portioner, to precise positioning of the product into the tray.

The requirements for an automatic portioning system for minced meat are demanding and varied. Handtmann therefore offers a modular system that adapts to the individual production circumstances. One component of the system is the integrated



Minced meat solution incl. GMD 99-3

inline grinding technology. The minced meat portioning line from Handtmann therefore represents a technical and technological overall concept for increasing product quality and the economic efficiency of production.

The type of grinding is crucial for the quality of the products. Key factors are as little mechanical handling as possible and very gentle cutting. With the Handtmann inline grinding system concept, the product is ground to its final grain size and simultaneously portioned in one process step. Independently controlled feed and cutting speeds facilitate flexible adjustment of the cut size. The tried-and-tested Handtmann vane cell feed system ensures a constant, positive flow of product. This results in a cleaner cut. The gentle separating system does not heat up the product. At the same

time, air is removed efficiently from the vacuum filler feed system. The Handtmann inline grinding system concept also allows for a variety of preferences in terms of minced meat product presentation: “eye-shape” hole plates can be used for a looser minced meat portion presentation or “letterbox” hole plates for a compact product structure.

The tried-and-tested combination of VF 800 vacuum filler, GD 451 inline grinding system with GD 452 minced meat grinding attachment and GMD 99-3 minced meat portioner is easy to operate via the VF 800’s monitor control system. Only a handful of parameters need be set in order to operate the minced meat line reliably. Full production capacity with outstanding weight accuracy is available immediately. For minced meat production with



Inline Grinding System GD 451 with new volume separator

maximum production hygiene. Minced meat, a sensitive product, is efficiently evacuated in the VF 800 vacuum filler in order to

substantially reduce the residual air content in the final product. The result of this is a far longer shelf life. The coarsely pre-ground product is only ground to its final grain size when it passes through the Handtmann VF 800 and the inline grinding system. Appealing product presentation and reliable colour stability are thus guaranteed.

The minced meat portioning line from Handtmann is a flexible basic module for integrated processes for automatic minced

meat production. Integration into compact process solutions through to packaging makes professional automation and rationalisation options possible, e.g. in conjunction with the tray feeding automation option or depositing into thermo-forming machines. The integration of the Handtmann Weighing system WS 910 offers cost reduction through minced meat products with guaranteed accurate-to-the-gram weights in every packaging unit.

www.handtmann.com

REX TECHNOLOGIE - VACUUM FILLER & PORTIONING SYSTEMS

The UFM 300-6 is the universal solution for hamburger and dumpling production in combination with the REX filling machine. The modular structure enables a wide variety of products to be processed and shaped in a simple and economical way.

The new hamburger shaper is the optimal machine-based solution for producing hamburgers using the low-pressure process. The pneumatic form cutter cuts the portions. The portions are then pressed into perfect "home-made" burgers via the form belt with optimal dimensional stability. The water spraying unit prevents the product sticking to the blade or conveyor belts. An optional imprint roller can be mounted to the end of the conveyor belt to structure the burger surface.

By converting the form cutter for dumpling production, the form roller is able to shape single rows



of beautifully round dumplings. The form rollers are available in various diameters for a range of dumpling sizes. Beautifully round dumplings can be created from meat, potato, bread and various other food products.

Optional UV sterilisation for the FB 300 conveyor belt guarantees the highest possible level of bacterial eradication thus enhancing hygiene standards, giving machine suitability in high risk environments.

www.rex-technologie.com

INTRODUCING THE ELECTRICALLY POWERED QUANTUM SKINNERTM BY BETTCHER - IMPROVED PERFORMANCE AND ENERGY SAVINGS



Picture: Bettcher GmbH

Quantum Hand-Held Skinner™ - Running on electric power, the tool can save as much as 90 percent of energy usage



Picture: Bettcher GmbH

Quantum Hand-Held Skinner™ - Adjustable depth of the blades makes it flexible and delivers a controlled, clean operation.

Bettcher GmbH, located in Dierikon, Switzerland, is the European subsidiary of US corporation Bettcher Industries. With its latest generation of the Quantum Skinner being launched in Europe in 2018, the electrically powered tool offers substantial energy savings. It complements the company's range of value-driven, cost-efficient solutions for the meat processing industry.

Faster, Labor-Saving Processes

The new Quantum Skinner is engineered to remove skin and

fat from pork, poultry and fish, and is ideal for de-rinding several pork primals. It easily and quickly removes hair roots and skin patches. The adjustable depth of the blades makes it flexible and delivers a controlled, clean operation that eliminates knife gouges.

Electrically Powered Innovation

The skinner ensures improved skinning performance and a quieter operation thanks to the Quantum® High-Speed Motor and Driveline. In comparison to

skinners that require compressed air to operate, the Quantum Skinner leads to dramatic energy savings. Running on electric power, the tool can save as much as 90 percent of energy usage, an important saving in the meat processing industry.

Easy to Handle

The Quantum Skinner weighs just over 1 kg, making it lighter and easier to handle than other skinners. This means that processing line workers do not tire as quickly, which in turn leads to improved productivity and increasing product yields. As an additional benefit the Quantum Flex Skinner can now be used with the new motor, so that only the handpiece needs to be changed in order to switch applications.

Bettcher's Quantum Skinner sets new standards of energy efficiency while improving performance.

www.bettcher.com

INNOVATIVE 3D PLANNING TOOL

3D glasses offer a visual experience that walks clients through complex production planning processes before they are even created. This new service provides important decision-making support. As a specialist in the field of production planning for the food industry, Lissner Engineers + Architects uses VR technology to simplify, accelerate and reduce concept design and fine-tuning.

Professional Planners with More Than 30 Years of Experience

Lissner Engineers + Architects is ushering in a new era with the innovative use of VR technology. The family-owned company, now with the second generation at its helm, is headed by industrial engineers Dennis and Tobias Lissner. It has been designing newbuilds,



modifications and expansion of production facilities in line with the most advanced standards for over 30 years. One of the unique

LASKA

14½ years

Setting new benchmarks in hygienic design, reducing cleaning time and expense.



Absolute hygiene

A newly-refined machine design and EHEDG-certified components guarantee simple, fast and thorough cleaning.

Standardised control panel

To make Laska grinders even easier to control, all our grinders are equipped with a standardised, simple-to-use control panel.

Intelligent control

Automatic speed control of the feeder screw depending on the requirement. Prevents operating errors, protects the machine and boosts output by 50%.

Angle design

Careful handling of the cut material with minimal heat exposure. Improved geometry ensures complete emptying.

*This certificate evaluates the degree of implementation of hygienic design requirements of an entire plant in accordance with the EU Machinery Directive and all other current and relevant standards.

strengths of the company is the implementation of construction work during operation. Dennis Lissner emphasizes: "We don't see ourselves as a classic firm of architects. As a specialist in production planning and in particular for the meat industry, we plan optimal operational processes. We ensure smooth workflows of product and staff by designing the shortest possible paths and avoiding points of intersection. Only when planning for the production area is completed, can the planning of technical equipment and construction be continued. The new VR technology provides a very effective support for this process."

Virtual Reality Brings Planning Concepts to Life

The VR planning tool, presented for the first time by Lissner Engineers +

Architects at IFFA 2019, enables the three-dimensional representation of complex 2D plans and thus makes them easier to follow. With the help of 3D glasses, customers can immerse themselves in the virtual world of construction planning. They can visually experience the locations and dimensions of machines and systems in their intended position and take a virtual walk through the facility before construction begins.

The comprehensive digital model reproduces large and complex machines in their intended locations and to scale. This enables a realistic, spatial view of machine installation, layout and dimensions, and provides a run-through of process workflows. By using the VR planning tool, Lissner Engineers + Architects' solutions for production systems in the food industry are

perfectly adapted to each location in order to maximise productivity.

At the same time, system limitations can be determined. Tobias Lissner explains: "VR technology offers realistic implementation of our concepts and gives our customers the feeling of being in the middle of the planned production environment. Our 3D tool makes complex relationships and interfaces understandable and can pinpoint planning risks right from the outset - this makes it much easier for our customers to make important decisions." The new 3D planning tool therefore simplifies and speeds up processes at Lissner Engineers + Architects. Customers benefit from an added increase in planning security, which in turn helps reduce costs.

www.lissner.eu

ALLERGEN-FREE ALTERNATIVES. NEW GENERATION OF PLANT - BASED FOODS - WITHOUT SOY OR WHEAT



Hydrosol Vegetarian Nuggets

A look at current sales figures and growth projections quickly reveals the importance of plant-based alternatives to meat and dairy products. "The plant-based revolution" is not just one of this year's top trends according to Innova Market Insights, it's also a rapidly expanding category in food

retail. Worldwide, the market for plant-based products is showing double-digit growth. However, consumer expectations are rising commensurately. In addition to flavour, texture and indulgence, a short ingredients list is also increasingly important, as is the absence of soy and other allergenic

ingredients. Accordingly, Hydrosol has long been using other plant protein sources instead of soy.

Meat Alternatives with Peas, Potatoes or Fava Beans

"Due to the GMO issue and its allergenic potential the demand for soy in Europe is declining sharply," says Florian Bark, Product Manager at Hydrosol. "In its place, protein sources like peas, potatoes and fava beans are coming to the fore, along with newer sources like chickpeas, sunflower and algae. For example, we use these proteins in our plant-based meat and sausage alternatives." Allergen- and soy-free stabilising and texturing systems based on



—STEEL—BELT— —CONVEYORS—FOR— —HYGIENIC—MEAT— —PROCESSING—

Upgrade to an IPCO steel belt meat conveyor for easy sanitizing, reduced cleaning costs and 'best practice' hygiene.

As a world leader in the supply of bacteria-resistant stainless steel conveyor belts for the food industry, we can help to ensure that you maintain the highest standards of hygiene and at the same time reduce your cleaning costs. Ask us for a copy of the VTT Expert Services report confirming the superior cleanability of steel belts, and for details of how our Application Team can support your upgrade process.

potato and pea protein can be used to make a wide range of products, from cold cuts to salami to bacon.

For plant-based convenience foods, Hydrosol offers its HydroTOP VEGAN Patty PP range, based on fava bean and pea protein, and free of soy, wheat and other

allergens. Together with the plant-based texturate it enables users to make vegan burger patties that are very similar to meat products in taste, texture and mouth feel. The plant-based nuggets made with HydroTOP VEGAN Patty PP and a rice texturate likewise feature a meat-like structure with

appealing bite. They have the familiar white colour of chicken nuggets. With the HydroTOP VEGAN Patty range, Hydrosol provides a modular system that can be used to serve the convenience market with a wide variety of plant-based foods.

www.hydrosol.de

DIGITISATION BRINGS MAJOR BENEFITS FOR POULTRY SPECIALIST

A bespoke IT system from food and drink specialist CSB-System has helped a Slovenian poultry processor to double its growth, improve cost-efficiency and increase production volume by 40%.

Today Pivka Perutninarstvo d.d. has a turnover of €38 million and has become Number Two in the Slovenian poultry market.



Key to achieving these operational improvements was to overcome the challenge of the time gap of several hours that existed at Pivka between the slaughter of the animals and the processing of customer orders. While slaughtering starts at 5am, the first orders do not come in until after 1pm. This had led to extreme peaks and inefficient processes in the production and packing departments.

In collaboration with CSB, Pivka therefore sought to establish an all-encompassing digitisation and optimisation solution. This involved the combination of an ERP system and a buffer inventory to create a perfect balance throughout the push and pull of production.

The processed animals are now packed into crates and transferred to the warehouse on a single-item basis; from there they are moved just

in time to the lines for packing and labelling. The process is overseen using CSB-Inventory Management which acts as the central control unit to ensure that the correct raw materials go to the right lines.

On each line a CSB-Rack® workstation, which combines automated data capture for weighing, pricing and labelling in a single operation, ensures maximum transparency of operations through online communication with the ERP system in order to provide staff with the relevant data for order processing. At the same time, all data originating in production are transferred directly to the ERP system. This real time data flow, with information available at the touch of a button, enables managers to keep track of activities, and provides intelligent business management, covering areas such

as inventory consumption, sales figures and production volumes. Key benefits for Pivka are a fast and significantly more efficient operation than a few years ago. In particular, the interaction between the ERP system, buffer inventory and data entry points helps to make processing of the orders a lot less stressful. Equally important, Pivka can better fulfil the wishes of its customers in terms of availability and freshness thanks to the improved reconciliation of data on inventory, capacity and demand.

“When we introduced the CSB-System here, we were a very small company in the Slovenian market,” comments Janez Rebec, Managing Director, Pivka Perutninarstvo d.d. “But in the last ten years, we’ve been growing twice as much compared to the past, also with the help of CSB.”

www.csb.com

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VIKAN EXPANDS FOOD-HANDLING RANGE WITH THREE NEW PRODUCTS



Vikan, the global leader in hygienic cleaning and food-handling tools, is pleased to announce a major

expansion of its range of hygienic, ergonomic food-handling utensils. The new products provide the food industry with an even more extensive range of application-specific tools that meet the most exacting needs.

Scooping, Hoing, Pouring

The new products - an Ergonomic Scoop, a Push-Pull Hoe and a new Measuring Jug - all come in 5 colours and feature market-leading ergonomics, durability and functionality. Product-specific benefits include:

The Single-Source Advantage

The new product launches make it easier than ever for food producers

to rely on Vikan as a single-source supplier of all the hygienic food-handling utensils they are likely to need. "Food factories and processing plants have a lot to gain from buying all their food-handling utensils from a single supplier. For example, a single-source approach ensures colour-coding consistency and saves everyone time in the procurement process," says Jette Fruergaard, product manager for Vikan's Hygiene range.

New Guide to Food Handling Tools

In addition to the new products, Vikan has published a dedicated guide to understanding and selecting the right food-handling tools for different applications.

www.vikan.com

NEW INK ADDED TO LINX RANGE TO MEET INCREASING CUSTOMER DEMANDS FOR RETORT APPLICATIONS



Linx Printing Technologies has introduced an ink specially formulated to resist moisture, colour change and transference. It is ideal for consistent coding through pouch and can retort applications where the contents

are cooked in the packaging after they are coded.

The new Linx Black retort ink 1077 has been specifically developed for the company's market-leading Linx 8900 and 8800 Series continuous ink jet (CIJ) coders and is a dye based MEK ink. This specialist ink is specifically designed for use in typical sterilisation and wet retort process conditions. Its special formulation enables the printers to code through a thin layer of oily film or grease. In addition, it contains components that enhance its adhesion under moist and high-temperature conditions, delivering good adhesion and good transfer resistance, as

well as excellent durability and legibility on a range of materials after processing.

Typical applications for Linx Black retort ink 1077 include a variety of food packs, such as ready meals, vegetables, beans, fruit, soup, rice, meat and fish products and pet foods. This includes any products that are coded before a cooking process.

The ink is suitable for use on many materials including metal cans, formed aluminium and plastic packaging such as polyester (PET) pouches.

www.linxglobal.com

SAVING ENERGY WITH INTELLIGENT VACUUM TECHNOLOGY

Image: Busch Vacuum Solutions



The new intelligent COBRA PLUS screw vacuum pump: ready for Industry 4.0

At Interpack, Busch Vacuum Solutions will present its new COBRA NX 0950 A PLUS screw vacuum pump, suitable for many applications in packaging and packaging manufacturing. It is a dry, oil-free vacuum pump, which can run with pressure control or at a constant rotational speed, making it exceptionally energy-efficient. The COBRA PLUS can thus precisely maintain the desired pumping speed at a prescribed rotational speed. It can also accurately sustain the required vacuum level, regardless of how the process conditions change.

Thanks to its variable speed drive, the vacuum pump covers a pumping speed range from 200 to 950 cubic meters per hour and reaches an ultimate pressure of 0.01 millibar. All operating data is constantly recorded and saved. This data can be accessed directly on the built-in display or transferred via a Modbus TCP/IP client/server protocol. As a result, the vacuum pump can also be controlled remotely from a PC. This makes the new vacuum pump from Busch fully prepared for Industry 4.0.

The COBRA PLUS is designed to be operated in two different modes. Following an intuitive menu structure on the display, users can choose between the constant speed mode or pressure control mode. The most suitable operating mode depends on the type of application. If, for example, a process requires constant pumping speed, this can be set using the 'Constant speed' operating mode and changed again at any time.

In contrast, pressure control uses a defined ultimate pressure setting. The vacuum pump precisely maintains this ultimate pressure, regardless of how the pumping speed changes. This means that this operating mode is always used if constant ultimate pressure or a constant vacuum level is needed. Once the required vacuum level is in place, the COBRA PLUS continues to run at a minimum speed of 20 Hertz, enabling it to respond to a sudden need for increased pumping speed by increasing the rotational speed. In the event of extended breaks, the vacuum pump can also switch on and off automatically, thanks to Ecomode.

Both operating modes thus help the COBRA PLUS operate in a way that perfectly suits the process, resulting in extreme efficiency as only the power that is actually necessary is consumed.

The COBRA PLUS vacuum pump is based on the proven screw vacuum technology from Busch. The fluid-free operating principle makes it possible to

avoid using oil or other operating fluids when generating vacuum. This makes it particularly well-suited for applications requiring that the pumped medium not be contaminated by operating fluids, or those that require clean-room conditions.

The COBRA PLUS can be used both as an individual vacuum pump or as a vacuum module in a central vacuum supply. The internal master/slave control facilitates communication between the individual modules and enables them to adjust their total output to the actual requirements without additional controls.

In addition to dry COBRA vacuum technology, Busch will also be showcasing the newest R5 RD rotary vane vacuum pump, which is primarily used in vacuum packaging due to its high efficiency. With the MINK MV Synchro, Busch will be presenting an additional oil-free vacuum pump with integrated intelligent control. It has proven to be particularly suitable for use in tubular bag packaging machines or pick-and-place applications.

All showcased vacuum pumps are also perfect as individual vacuum modules in vacuum systems for centralized vacuum supply. Vacuum supply systems from Busch can supply vacuum extremely effectively to entire production facilities or several packaging lines at once. In special cases, the most suitable operating principle must first be determined.

www.buschvacuum.com

LEYBOLD LAUNCHES TWO VACUUM CALCULATION AND SIMULATION TOOLS

Vacuum technology specialist, Leybold, has developed two new online tools to assist customer's pump choice and layout of complete vacuum systems: The Pump Finder and the calculation tool LEYCALC. With these new web-based tools, users can select and build their vacuum solutions online. They are designed to be used for two different use cases: The homepage <https://calc.leybold.com/en/lp> leads to both the Pump Finder and LEYCALC, the vacuum system calculation tool. Users with vacuum know-how can use LEYCALC to calculate the behavior and performance of vacuum systems in detail. The Pump Finder guides even beginners to suitable products by a questionnaire.

vacuum chamber pump down. A process gas flow is a continuous gas flow where the constant pressure is conveyed. A vacuum chamber pump down is an application where the chamber is pumped/evacuated to a specific target pressure. The result is a selection of vacuum pumps that meet the customer's requirements.

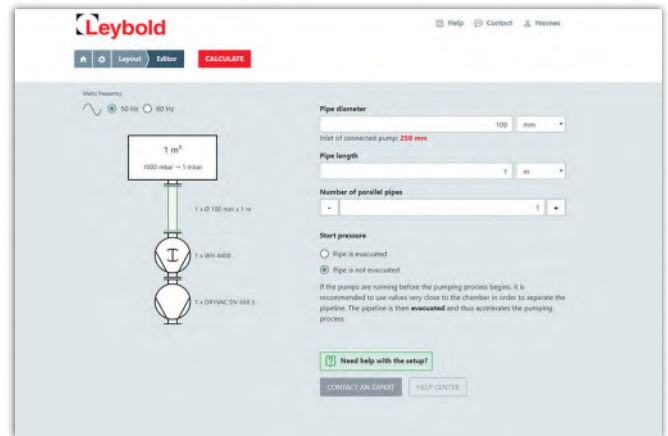
Targeted Product Selection

LEYCALC can be used for detailed engineering of vacuum systems using the same powerful algorithms as Leybold's application experts. The tool allows customers to calculate their vacuum systems fully independently and for

Manager, Industrial Vacuum. "In the past, there were often lengthy dialogues about such details," says Kammermeier. Now users can perform their calculations independently - with the result that the entire process leads to a more targeted and faster selection of the right solutions for the application. "We expect LEYCALC to improve the contact quality with our customers," summarizes Kammermeier.

Efficient Communication and Fast Solutions

Once the user of the online tool has defined the pump's chamber and the target pressure, LEYCALC performs the calculation of a



Step by Step to the Right Offer

The Pump Finder is designed to navigate vacuum users step-by-step to find the ideal pump for their application. Throughout the selection tool, pumps can be refined by entering values for chamber size, target pressure and pipe dimensions. There are two calculation options for modelling different vacuum applications: process flow and

complex scenarios, the experts offer their full support. "Previously, we had to adjust parameters such as chamber size, process gases, cycle times, pipe length and pressure values during the initial contact with the customer. With the help of the simulation software, the user can independently calculate configurations and get an initial idea of the vacuum performance," explains Dr. Tom Kammermeier, Global Application

pump down curve: The result is immediately displayed in a diagram. This shows exactly how long it takes to pump the air out of the chamber to a defined pressure and how the pressure develops over time. Alternatively, the user can calculate the pumping speed curve of a pump system. This shows which pumping speed is provided at a certain pressure. All calculation data is stored centrally and can be called up at any time

and from any device by customers who have registered. Calculation results can also be shared with specialists at Leybold. This allows a detailed discussion about the respective vacuum application. Overall, the platform leads to considerably more efficient customer communication and faster solutions in complex projects. Leybold's vacuum experts will be happy to answer any questions regarding specific calculations in a timely fashion.

Conductivity Losses Immediately Apparent

"In addition to the chambers and pumps of a vacuum system, the different influences of pipelines are also taken into account. These include the conductance

effects in all pressure ranges and flow regimes, blocking and, of course, the volume of the lines," explains Hannes Kamecke, the IT manager responsible for the online configurator. In some cases, it then becomes apparent that a pump with higher individual performance would not improve the overall vacuum performance because the reductions are caused by an incorrectly dimensioned pipeline. "However, the diagram immediately shows that the pipe diameter needs to be increased," explains Hannes Kamecke.

Further Development Planned

Navigation through the web-based software solution is conveniently

possible on all kind of devices like tablets, smartphones. Sections in need of explanation are linked to more detailed background information on vacuum technique. In future, LEYCALC will comprise the whole Leybold product portfolio, covering also high vacuum applications. "With the publication of the new calculation tools, Leybold makes its vacuum know-how collected over decades available to its customers and thus lays the foundation for modern digital customer communication. The offer thus represents an important building block in the digital customer experience strategy of the vacuum specialist," concludes Hannes Kamecke.

www.leybold.com



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MEYN LAUNCHES UPDATED ECP M1.1 EVISCERATION FOR HIGH SPEED ROCESSING LIGHTWEIGHT BROILERS

Big, bigger, biggest is the general growth seen in poultry processing the past decades around the world. Where in the 50ies the average live weight of a broiler was less than a kilo, the current live weight has reached over 4 kilos in countries such as the United States. Big players in the poultry processing industry started to tailor their solutions to suit heavier broilers. Iconic solutions such as the Apollo and the Maestro made their glorious entry into the poultry market. The industry was ready to play it BIG.

Little did the processing market realize that it was missing out on a very strong tradition in some of the biggest chicken consumption regions in the world: The Middle East and Asia. Consumers in the Middle Eastern region prefer lightweight grillers of 700-900 grams. Larger grillers (900 to 1300 grams) are perceived as old and not tender. A huge contrast with the size demand in other regions of the world. Poultry processing partner Meyn, a specialist in a high variety of weight range, has now successfully launched a newly updated highspeed ECP M1.1 EVISCERATION solution for the smallest weight range of broilers (500 - 1700 grams) in Asia. "We are now ready for high-speed processing of small broiler in other regions as well, such as the Middle East", said Olivier Roelfs, Regional Director Meyn Asia.

A strategic move. Poultry meat consumption in Saudi Arabia alone was 32 kg per capita in

2018. On top of that achieving self-sufficient poultry production to efficiently control treating diseases and meet the halal standards is one of the region's main goals.

All imported chicken meat into Saudi Arabia is frozen. Brazilian frozen chicken meat is the most preferred imported chicken as

they offer smaller sized birds for the most compatible price. One of the incentives that the Saudi poultry sector receives from the Saudi government is a stipulation in catering contracts. It states that companies that serve foods to government institutions should use at least 70% local produce. The issue of Halal slaughter is that



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some Saudis tend to believe that domestically slaughtered chickens are of higher Halal standards than imported products from non-Muslim countries like Brazil and France. As such, they prefer to purchase domestically grown chicken meat at higher prices. In the nutshell; a region off for the chase.

Meyn, had already divided its solutions within the ECP concept into three life weight ranges in 2006 to meet region-specific needs:

- 500 - 1700 grams
- 1200 - 4000 grams
- 2500 - 6000 grams

The challenge for some poultry processors in the Middle East was their decision to install a mid-range weight solution in the past but finding out along the way that consumers wanted smaller and smaller. Meyn stepped around the table with a leading poultry processor in Saudi Arabia to find the right validation with their existing midrange weight line.

Finding the right validation fast for this particular poultry processor without drowning in unfeasible investments appeared to be a hard path to walk, but not impossible. "By listening carefully to the processor's needs and matching these with our unrivaled expertise in an adaptable weight range, we managed to find a way with their existing processing line." - Dennis Boudewijns, service contract manager at Meyn.

The biggest leap to make was evisceration, a critical step in



poultry processing. Here the size and the right validation are crucial. Dennis Boudewijns and his team worked on an adapted insert piece and curve to create the perfect movement for evisceration. The various knives in the line were an easy "cut". "As simple as it may sound, we just adapted the size of the knives to a desirable size. After a little trial and error, we found the perfect size to maintain the intended yield of the line." The spoons were replaced and a running midweight range line validated for small weight range was born.

Meanwhile, Meyn's already successful solutions for small-sized broiler processing has reached its next level in Asia: high-speed processing (>10.000 BPH) of small weight range broilers. In Asia, the high demand for Spring chicken and Ginseng chicken has initiated the development of a small weight range line running at 13.500 birds per hour.

"We've tested the high-speed lines for small-sized broilers until we reached the highest possible yield in processing and satisfaction of our processing partners. We are proud to announce that we have now successfully launched our newly updated highspeed ECP M1.1 EVISCERATION solution for the smallest weight range of broilers. We are ready for high-speed processing of small weight range in other regions, such as the Middle East, as well", explained Olivier Roelfs, Regional Director Meyn Asia.

By validating existing lines and introducing the newly updated highspeed ECP M1.1 EVISCERATION solution, Meyn meets region-specific needs such as the consumption of small-sized broilers in Asia and the Middle East. Meyn aims to let innovation go hand in hand with tradition. That is the only way to truly feed the world.

www.meyn.com

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In his entire professional career, Henk Hoogenkamp has been ahead of the curve, oftentimes more right than wrong. With brutal honesty and lots of inside information, Henk gives a fresh voice to the rapidly changing and emerging dynamics of protein technology and marketing.

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CONSUMER CONFUSION

By Henk Hoogenkamp

In the old days or in traditional societies, people were not incessantly being bombarded with the temptation to eat. However, today's contemporary consumers are constantly reminded to eat, even when they are not hungry. The main reason is the wide availability of ready-to-eat convenience foods in a setting of a 24/7 society. The modern food environment, engineered for maximum enjoyment, will trigger compulsive overeating that ultimately results in obesity and lead to developing degenerative diseases.

Although more consumers are now aware of the negative health implications arising from certain fat and sugar-loaded foods, enjoyment and indulgence still have a much greater influence on consumption choice rather than health reasons.

Many people in developed countries and affluent societies typically do not worry too much about calorie consumption. The body weight in most developed countries has been steadily increasing to alarming levels, with a growing discrepancy between calorie reference data

and the misreporting of actual calorie consumption.

Serving sizes are typically understated and do not reflect portions that people usually eat -meaning they are bigger than serving sizes stated on food labels and nutrition facts. Making the calorie count bigger and bolder on the food label is the right thing to do, which hopefully resonates with purchasing decisions of consumers.

As a side note, images of junk food are much more distracting

than health food photos, which underscores people's implicit bias for fatty, sugary foods, and confirms the old adage that it is a bad idea to grocery shop hungry.

The Eyes are Bigger Than the Stomach

Unfortunately, the fact remains that people are still inclined to consume more food or drinks from larger size portions or packages. Reducing the availability of larger portion sizes and restricting pricing practices that enable larger package sizes to cost less in relative terms, is a suitable intervention to reduce calorie intake.

The discrepancy between nutritional sound portion sizes and what people actually eat contributes to the uncertainty about the appropriate amount of food. Let's face it -most people eat until their stomach is full, and often a bit more than full. Overconsumption can lead to significant health ramifications, and portion-distortion plays a major role in the rampant obesity problems. Satiation is a subjective definition, which greatly differs from person to person.

For the food industry, the message to eat less is potentially problematic. The food industry is not likely to address this topic anytime soon, considering that all marketing plans are based on selling more, not less. Healthy eating should be more than a short-term resolution because it is about lifestyle and not just a gimmick to cut calories and lose weight.

Animal Fat Phobia

Since the early 1970s, the establishment of the dietetic world of self-proclaimed "experts" has

demonized saturated fat as the number one evil causing strokes, heart disease, and obesity.

For decades, animal saturated fat has been the most vilified nutrient in the diet of affluent societies. Now it seems that dietary animal fat may not be the nutritional bogeyman that it has been portrayed by the unrelenting wave of media coverage. Butter is back in fashion, and so are the saturated fats.

For at least 50 years, scientists have been presenting and preaching evidence linking saturated fats -like those found in animal products- with cardiovascular disease. Dating back to at least the early 1970's under the leadership of the global margarine giants, the consumer has been bombarded with a never-ending barrage of propaganda about the ill effects of animal saturated fat.

The same margarine industry "conveniently" forgot to inform the consumer that much of the non-saturated fat was in the form of transfat and that most of the polyunsaturated fats were, in fact, chemically-extracted oils. As a result, new foods that were hyper-processed, containing a long list of additives to allow for a transformation of natural to the "new healthy", filled the shopping carts. The arrival of these so-called "healthy" but ultra-processed margarine spreads and sugar-loaded foods in the 1970's was probably the most important factor contributing to the current obesity crisis crippling a large number of people around the world.

Fat Phobia

In the early 2000s, reduced fat foods became the norm for many

people. This form of fat-phobia will not leave the mindset of consumers anytime soon, though it is increasingly clear that a rethinking of nutritional guidelines is in the making. For example, the closer milk is to zero percent fat, the more the omega-3 fatty acid benefits and the naturally-occurring Vitamins A and D are eliminated. Actually, whole milk may be a better satiety agent, reducing the intake of other forms of calorie consumption.

There is an urgent need for a careful reappraisal of the current nutritional guidelines. There are simply too many conflicting publications that confuse consumers. Based on the new scientific findings, the national committees on health guidelines are expected to not only revisit the heart health issues but also update their policies, and stop demonizing foods that contain saturated fats, such as those present in meat, milk, and cheese.

The switch from a diet with saturated fats in dairy and meat has resulted to an increased carbohydrate consumption, which -many researchers now believe- has contributed to the current crisis of obesity and diabetes T2. Over the last 50 years, scientists who were wedded to their theories about saturated fat and heart disease, tried to protect their hypothesis and "silence" or discredit opposing studies.

It was only in 1995 when the Americans became exceptionally alarmed by the fat content of food. At the beginning of the second decennia of the 21st century, their concerns were far more wide-ranging. Nutrition guidelines were overhauled again in 2015 to reduce sodium, limit starchy vegetables, and ban transfat. Other dietary changes included the increase

of wholegrain, more unsalted nuts, fruits and vegetables, and limiting the number of calories in general. Wholegrain, vegetables and fruit have the potential to become a mainstay in the typical west-European diet, though animal-derived protein sources remain an important component.

Breaking News: The Return of Animal Fat

Another breaking-news food story monopolized the airwaves suggesting that billions of people might have been barking up the wrong tree all these years regarding limiting dietary fat intake.

At the 2017 congress of European Society of Cardiology in Barcelona, a study showed that people aged 35 to 70 with a high fat dietary pattern from 18 low, middle, and high income countries, appeared to be associated with a lower risk of premature deaths by any cause, while a high carbohydrate diet is associated with a worse long-term outcome.

The study findings are a departure from the recommendation to limit total fat intake to less than 30 percent of energy calories, and saturated fat intake to less than 10 percent of energy calories. Limiting total fat consumption does not appear to improve overall health of the population. Actually, increasing fat intake to cover for about 35 percent of energy calorie requirements and reducing carbohydrates intake may lower risk of death.

For decades, dietary guidelines have focused on reducing total fat and saturated fatty acid intake in particular. However, the new study data suggests otherwise, and as a result has

given a unique opportunity to see the impact of diet on total mortality (death) and cardiovascular disease in diverse settings, some wherein over-nutrition is common and others where under-nutrition is of greater concern.

In the poorer demographic areas where undernutrition -but increasingly also malnutrition- is prevalent, the general population is much better at restricting sources of high-carbohydrates foods, as well as adding additional sources of fats like coconut oil, dairy and other protein contributors such as eggs, fish, meat and plants and nuts.

People who eat high levels of carbohydrate-formulated foods, particularly refined sugars like those found in fizzy drinks and ultra-processed snacks, face a higher risk of early death. Low-fat diets put populations at increased risk for cardiovascular disease. Loosening the restrictions on total fat and saturated fat while imposing limits on carbohydrates to moderate levels is the best bet for sustained health.

The right “sweet spot” would be around 35 percent of energy calories coming from fat and an average of 50 percent of energy calories from carbohydrates -of which only 5 percent should be plain sugar. A high carbohydrate diet -greater than 60 percent of energy calories- is associated with higher risk of mortality. Higher intake of fats, including saturated fats, is associated with lower risk of mortality. However, diet has little impact on heart death risk, suggesting it has a greater impact on other killers like cancer, dementia, respiratory disease, and diabetes type 2.

The new dietary guidelines are in stark contrast with the avalanche of low-fat recommendations that besieged the world in the mid-1990s. The study published in *The Lancet* dated August 29, 2017 has set off a wave of media coverage and opinions - both pros and cons- and is still gaining traction in 2020. This study can be seen as a complete U-turn and might signal the end of the demonization of fat.

Another Twist in the Cholesterol Saga?

Cholesterol is another hotly-debated issue and has been a longstanding arch-villain in the western diet. Supported by self-interest pharma- and food companies who have sponsored paid university studies for scientific backup to demonstrate the urgency to lower cholesterol levels since the 1970s to avoid heart disease and clogged arteries. For many decades, consumers in the developed countries were alarmed to go easy or avoid altogether saturated fat present in butter, full-fat dairy products like cheese, and coconut oil.

It remains to be seen if legislative authorities such as the EFSA, FDA and USDA will ease the strict cholesterol-intake guidelines if the emerging relationship between consumption of dietary cholesterol and serum (blood) cholesterol remain a substance of dietary concern.

The bottomline of the new thinking about cholesterol intake is that if a person eats more foods rich in this substance, the body will make less. On the other hand, if cholesterol is deprived from the dietary intake, the body makes more.

The majority of the cholesterol is produced by the liver, and the brain is primarily made up from cholesterol, which is essential for nerve cells to function. In its own right, cholesterol is the basis for the creation of all steroid hormones, including estrogen, testosterone, and corticosteroids.

In the new medical world, there is a growing belief that saturated fats and cholesterol in the diet are not the cause of coronary heart disease. Routinely, a body needs 950mg of cholesterol for daily metabolism and the liver is the main contributor. Only some 15 percent cholesterol is given by the dietary intake. If cholesterol intake is reduced, the liver will make up for the difference to maintain the daily requirement of 950mg.

It is likely that the controversy between the food and pharmaceutical industries -who all generate zillions of profits- such as the sales of pharma statins and low-fat foods- and the new emerging medical evidence about the "cholesterol scam" won't end anytime soon. For now, consumers remain in the dark about what, and what not to believe; something similar is happening about the truth of hidden sugar consumption.

Lifestyle Diet Variables

Besides the influence of human genetic precondition that also regulates energy efficiency, there are important changes occurring in the lifestyle of consumers in modern socio-cultural, demographic, occupational or professional settings. What has changed in the past few decennia are the different ways in which people consume food. In particular, there is an unmistakable trend that

more food is consumed in liquid form. Increasingly, solid food is manipulated or modified to make it available in liquid form. Some examples that come to mind are liquefied vegetables, proteins, fruits, breakfast cereals and candy. Food out of a bottle might be convenient and fast. However, there is also a hypothesis that satiety from liquid food is significantly less than solid food. As a result, the body will welcome additional consumption of calories even though the satiation point has already been passed.

Another major change in food intake is the way people eat food. The enormous popularity of fast food has gradually moved people away from eating meals with spoon, fork, and knife. The traditional way of eating meals with utensils is partly replaced by consuming handheld foods, such as wraps, pizzas, burgers, fries, pies, and the like. To make matters worse, these handheld foods quite often contain high amounts of hidden fat, sodium and many sources of hidden carbohydrates -with good tasting empty calories. As such,

it proves that portion distortion magnifies handheld foods and snacks which also significantly leads to in-between meal snacks as unnecessary calorie intake. It is fair to conclude that typical "modern on-the-go diets" are a train wreck with far too much sugar, salt, and fats.

Whenever possible, people should eat foods in their most natural form. That is probably the best way to avoid excessive sodium, fat and added sugar intake, while increasing the chances of eating enough calcium, vitamin D, potassium, and fiber. This simply means that one should eat eggs, wholegrain toast, plain yogurt, and fruit for breakfast, instead of sugary cereal or a plain bagel with cream cheese. It also means eating unsalted nuts and dried fruits instead of chips, candy, and high-calorie soft drinks.

Children Lifestyle Cycle Adjustments

An increasing number of children are skipping meals and replacing them with snacks. For many, the

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day starts by snacking while on the way to school instead of enjoying a wholesome breakfast. If not properly managed, snacking can be considered a form of malnutrition. Skipping major meals with a higher nutrient content can not only affect children’s ability to learn but also their physical development to its full potential, as well as cause behavioral problems. Research suggests that a diet high in sugars, and processed food in early childhood may lower the IQ, while a wholesome balanced diet -such as wholegrain, fruits, vegetables and premium protein sources -including animal protein selections - may do the opposite.

Sugar Rush

Although cereals are not the top source of hidden added sugars in a diet, people can still load up on sugar at breakfast time. This is especially true for children who are not satisfied with a single serving; thus, their big appetites often result in half or more of the daily sugar intake well before the

day has begun. Products that top the list of added sugars are soft drinks like cola, fruit drinks, breakfast cereals, foamed dairy desserts, cakes, and candies. Fruits can enhance low-sugar cereals to compensate for sweetness without adding empty calories. After many years of total inactivity, major cereal makers are finally rolling out less-sugary versions of their breakfast choices. However, more drastic sugar cuts need to follow.

It is questionable if the industry’s attempt to self-regulate the advertising of food and beverages is effective and successful when it comes to promoting healthy nutrition. Marketing directed especially at children usually focuses on less-nutritional foods. The younger generations are vulnerable to social media exposure, which tout foods and beverages high in sugars, fats, and sodium. Social media has brought a totally new dynamic into the food business and is not only a great tool for dealing with crucial consumer feedback, but -unfortunately- also

in manipulating or indoctrinating thought processes. However, make no mistake: taste and flavor and convenience remain key to consumer acceptance and will routinely be the primary criteria for food purchases. Unfortunately, for a big part of society, health considerations are only an afterthought.

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Author and Publicist



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FORECAST FROM ADM HIGHLIGHTS SEVEN PLANT - BASED PROTEIN TRENDS TO WATCH IN 2020

Plant-based proteins dominated the food and beverage landscape in 2019 - driving new product introductions and overall industry excitement. As food companies look for ways to keep pace with the rapidly expanding and evolving market, ADM has identified key trends that will drive innovation and growth in the plant-based protein space in 2020, and beyond.

“The plant-based food and beverage movement has been gaining momentum over the last 12-months, and this is going to be another breakout year for the category,” said Kurt Long, director of Flexitarian Solutions, ADM. “We expect to see even more new and enhanced protein options hit the shelves in the coming months, and to get an edge in this growing space, manufacturers have to respond quickly with on-trend products. This is an area where ADM is ready and eager to help. We look forward to helping our customers drive advancements in the space through new and innovative products.”

ADM’s OutsideVoiceSM Protein Perception & Awareness Study recently revealed that 44 percent

of U.S. consumers now identify as flexitarian. This trend is mirrored in Europe, with research from Mintel showing that 50 percent of UK consumers are cutting their meat intake. While pleasure and health remain the principal drivers of innovation in the food and beverage sector, ethical and environmental concerns surrounding meat and dairy products are increasingly motivating Europeans to choose meat-free options. These motivations, coupled with expectations for exceptional flavor and product variety, are shaping 2020 trends in the plant-based protein category globally. These trends include:

Protein Alone is Not Enough

While plant-based, front-of-package claims used to focus on the number protein grams per serving, in 2020, consumers will be looking for more.

“Protein Plus” is the name of the game, and in order to play, manufacturers must expand nutritional benefits with function-forward health features, like added fiber, antioxidants, probiotics and vitamins.

These functional benefits don’t just drive demand, they also command a higher price point. Research shows consumers are willing to pay a premium for products higher in protein, fiber, whole grains and vitamins.

Nutrition Matters, but Taste Rules

Research shows that while consumers are drawn to plant-based proteins for their nutritional benefits, they won’t fully incorporate products into their repertoires if they don’t deliver on taste and texture. This is the year to expect more products to be formulated with plant-based blends—like soy or pea combined with beans, seeds or ancient grains—to deliver the craveable flavor that consumers demand. While formulating with the right proteins is a must in 2020, exceptional flavor will be driven by true culinary expertise.

Meaty Innovations

Burgers led the plant-based protein craze in 2019, but in the coming year, new products will start to take center stage. Already, the market is seeing an increase in alternatives to chicken, sausage and even seafood. Because taste matters, the key to success with these new products is achieving a flavor and texture similar to their animal-based inspirations.

Keep it Clean

Sixty percent of U.S. consumers say recognizable ingredients influence their purchase decision, and 66% say they are looking for labels with the shortest ingredient list. In 2020, these numbers are likely to rise, meaning successful

plant-based formulations must have shorter, more familiar ingredient lists that rely only on all-natural ingredient sources such as beans, lentils, whole legumes, quinoa, amaranth and sorghum.

Dairy Alternatives Grow

Expect to see continued plant-based innovation in the dairy case, building on the momentum of the past few years. In the U.S., the market for plant-based cheese has already grown 19%; plant-based ice cream and novelties have grown 27%; and plant-based yogurt has grown an impressive 39%. While growth has been prevalent in the space, there is significant opportunity for formulators to leverage improved flavor and texture of

products to drive even wider consumer interest in the year ahead.

There's Even More in Store Brands

Private label brands have achieved significant growth with organic and natural products. Eighty-five percent of consumers say they trust private labels, and 81% say they purchase private label products on every shopping trip. This is a space that's primed for plant-based products to drive even more growth.

Comfort is King

As meat analogues become more common, a growing opportunity in the plant-based category will

be comfort food. Consumers—especially those with children—will be looking for plant-based versions of family-friendly foods, including chicken nuggets, mac and cheese and pizza.

We're the Pros of Protein

Only ADM combines world-leading protein expertise with culinary chops to deliver what is next in alternative protein solutions giving customers an edge in capturing the growth opportunities created by these trends. Contact your local ADM representative to learn more about our innovative plant-based portfolio and how it can help you develop your next exciting NPD project.

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FOOD SAFETY MANAGEMENT TOOL

By Lene Meinert

FOCUS AND SYSTEMATIC APPROACH

A high level of food safety provides food producers with a “license to export”. The Danish meat industry is known to be at the forefront when it comes to food safety. This is a result of the tireless efforts of the slaughterhouses to perform optimally every day, combined with ongoing implementation of the latest results from research. These daily actions form the cornerstone of the Food Safety Management Tool.

The Food Safety Management Tool is a tool for systematically monitoring both the current level of hygiene during slaughter

and the quality of the cleaning performed after the last shift (typically during the night). The tool is based on verified checklists that are tailored to the individual customer, since two production sites are rarely identical. By using these checklists and constantly focusing on production hygiene, cleaning procedures and the handling of carcasses, sources of contamination such as Salmonella, Listeria and E. coli, will be kept in check, and the overall level of hygiene will improve.

Unfortunately, there is no quick fix for improving food safety. Improvement can only be achieved through continuous and targeted efforts. Most importantly, everyone

in the production facility must be committed, since success is only achieved through team effort. Although that might sound rather obvious, it is true and is one of the reasons why “food safety culture” is on the agenda at international food safety meetings and in standards like BRC (Global Standard for Food Safety).

IMPROVEMENT THROUGH COLLABORATION

The Food Safety Management Tool

The tool consists of two checklists, one designed to monitor and identify critical areas on the

slaughter line, and one designed to monitor the cleaning quality and identify critical areas that require more attention during cleaning. The tool is powerful both for initial identification of critical areas and for the ongoing monitoring of the hygiene level in the production environment. It is also useful in identifying and prioritising processes where the hygiene can be optimised.

The checklists cover the following areas, with particular focus on hygiene and food safety:

- Equipment on the slaughter line: we evaluate hygienic handling and the risk of cross-contamination.
- Knives and tools: we check that knives and tools are washed and disinfected.
- Systematic slaughter procedures: we look at the production flow from a hygiene perspective.
- Operator performance: we evaluate each critical handling procedure on the slaughter line.
- Personal hygiene: we observe routines, such as handwashing, and evaluate working clothes.
- Cleaning quality: we observe the cleaning of the facilities and check that it complies with the specifications provided by the food producer.

Overview

DMRI visits your production site, performs a critical evaluation of the processes and procedures used on the slaughter line and audits the cleaning performed in the slaughter areas. Based on our observations, we adjust the tool to fit your production set-up and identify the critical areas for potential occurrence of contamination. Data from the in-house food safety control are included in order to provide a solid overview of the food safety level.



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Check point		Score	Obtained score
Loosening of the bung (check min 20 carcasses)	Is the bung effectively sealed, for example with a bag?	0 - Always 10 -Irregularly 30 -Never	
	Is the bag securely attached with a rubber band?	0 - Always 10 -Irregularly 30 -Never	
	Is the knife washed and disinfected between each carcass?	0 - Always 5 - Irregularly 15 -Rarely 30 - Never	
	Is visual fecal contamination removed after loosening the bung with vacuum steam?	0 - Yes 20 - No	

How the checklist works: this is an example of the check point "loosening of the bung". The procedure is observed for a minimum of 20 carcasses, and a score is assigned to the observation. The scores are designed to differentiate the behaviour observed and make it easy to identify any needs for improvement.

We prepare a prioritised action plan based on the observations, the data provided and our extensive experience of working with food safety in the Danish meat industry.

Training and Implementation

Following the overview, DMRI conducts several investigations in collaboration with company employees (typically from the quality department). During these investigations, we follow the checklists, identify the critical areas, discuss any deviations and appropriate corrective actions and implement the corrective actions as rapidly as possible. In this way, training and implementation go hand in hand.

Deliverables

- Food Safety Management Tool checklists
- Written prioritised action plan
- Written review of identified actions and how to achieve optimisation
- Training in the use of the Food Safety Management Tool on the slaughter line
- Evaluation of the sampling plan used in daily bacteria control

- Training of operators in proper hygienic handling of carcasses and final products will be conducted on the spot, if identified as a critical action.
- Written cleaning audit report
- Advice on proper cleaning will be given to cleaning staff on the spot, if identified as a critical action
- DMRI will advise the quality department (or other responsible personnel) on how to follow up on the training.

THE VALUE OF THE FOOD SAFETY MANAGEMENT TOOL

It is always difficult to assess the precise value of good food safety. However, one thing is certain: it is expensive to have recalls or to lose customers due to a presence of unwanted bacteria in the products. We have seen very skilled quality managers become "blind" in their search for unwanted bacteria and then get back on track using the systematic approach provided by this tool.

Using the Food Safety Management Tool, you will get:

- operators with improved understanding of hygienic production.

- employees who know how to perform hygiene control during production.
- employees who can identify and prioritise processes where the hygiene can be optimised.
- employees who can distinguish between acceptable and unacceptable processing and cleaning qualities.
- employees who know how to implement improvements in processing and cleaning procedures.
- employees who understand which factors have an impact on pathogenic bacterial contamination and know how to quickly adjust processes or actions that deviate from good hygienic standards.

How the checklist works: this is an example of the check point "loosening of the bung". The procedure is observed for a minimum of 20 carcasses, and a score is assigned to the observation. The scores are designed to differentiate the behaviour observed and make it easy to identify any needs for improvement.

About the author:



Dr. Lene Meinert is Team Manager for the team "Product Quality", at the Danish Meat Research Institute. Lene has a master and Ph.D. from the University of Copenhagen within the field of food science with focus on sensory science, food chemistry and microbiology.

A STRESS-FREE JOURNEY FROM SHED TO SHACKLE

Bird Well-Being, Meat Quality and Sustainability Benefit from ATLAS and CAS SmoothFlow

For some six to eight weeks, even longer in the case of heavier and specialist breeds, broilers will have been carefully nurtured on the growing farm. Growers will have invested time, money and effort in creating the best possible environment for them to thrive. Once they reach slaughter weight, they will be caught, crated and loaded onto trucks for the journey to the processing plant. Catching, loading and transport are, however, operations that will be new to birds and could possibly stress them.

“As an industry, we have a responsibility in ensuring that all stages during loading and transport are well taken care of,” says Tim van Schaik, product manager for Marel Poultry. “It is very much in the ethical and financial interest of both grower and processor that every effort is made to handle birds as humanely as possible, as this will make for the lowest possible number of unwelcome DOAs and downgrades.”

Manual Catching

Although automatic catching machines have been on the market for a number of years, some 80% of birds in Europe and some 90% of birds in the USA are still caught manually. Catching is a demanding job. An individual catcher could be lifting and handling 20,000 to 25,000 kg over an eight hour catching shift. At the same time, breeding programs over past decades have produced top-performing birds, which deserve to be handled with care. This means

paying close attention to the design of the modules into which birds, once caught, will be loaded.

Easy Loading

Catching should be complete within an hour at most. Although plastic crates are still used, most high volume operators now work with multi-tier containers or modules. These modules should be brought into the growing shed and placed as close as possible to where catching is actually happening; catchers should not have to walk any distance with birds.

Tim van Schaik says, “It is particularly important that their design allows modules to be placed close to walls or corners, so that those last few birds can be caught and loaded. Modules should also allow birds to be loaded easily with minimal risk of damage.” Loading openings should therefore be big enough to allow birds to be loaded downwards onto their feet. Module design should be such as to minimize the risk of heads, wings or legs becoming trapped during loading.

**“A RESPONSIBILITY
IN ENSURING THAT
ALL STAGES DURING
LOADING AND
TRANSPORT ARE
WELL TAKEN CARE OF”**

Efficient Ventilation

Full modules should be loaded on the truck as quickly as possible. Loading a truck will typically take up to an hour. The journey to the processing plant also has its risks

for the birds. Measures will have to be taken to protect them from extremes of heat and cold and from inclement weather. Broiler chickens produce a lot of heat and exhale humid air. Heat stress can quickly become an issue. Module design should allow for efficient ventilation both when the truck is parked and when it is in motion. Particularly important are floor design and giving birds enough headroom. Headroom is also crucial, as birds tend to sit during the journey. They should be able to sit comfortably with their heads up.

During the Trip

During the trip, the truck driver will have to brake and negotiate bends. Road surfaces will not always be smooth. Floor design should therefore allow birds to grip. Design should also take account of the manure which will inevitably accumulate during the journey. Birds should not sit in their own manure, from which birds in the tier beneath should be protected as far as possible.

Appropriate truck design is important too. Ventilation slots



The ingenious construction of Marel Poultry's ATLAS SmartStack transport modules needs fewer truck movements, thus reducing CO2 footprint.

should be correctly positioned to ensure a good flow of air to all modules. Protection at the sides of the vehicle will vary according to climate and season. Such protection can range from fixed side covers in very cold climates to light and heavyweight tarpaulins. It should also be possible to lift the roof by at least 50cm to allow modules to be loaded easily.

Lower CO2 Footprint

Modules should be designed to carry as many birds as possible as comfortably as possible. Tim van Schaik continues, "If more birds can be transported in one trip, fewer trips will be needed. This not only saves fuel but also helps the environment, as the CO2 footprint per bird transported will be lower." Modules should also be easy to clean and disinfect, reducing the risk of disease transmission to a minimum.

Tick all Boxes

SmartStack, the transport module developed for Marel Poultry's ATLAS live bird handling system, ticks all of the above boxes. It consists of a variable number of self-nesting trays equipped with tried and tested AirFlo floors, which open up to give a loading opening of 70% of the floor area of each tray. SmartStack has no frame and its pallet doubles as an additional tier for transporting birds.



After destacking of the SmartStack modules, birds enter the processing line. Since they left the farm, they have stayed where they are and haven't been touched by humans.

"ENSURING THE SUPPLY OF BIRDS IN THE BEST POSSIBLE, STRESS-FREE CONDITION FOR PROCESSING."

Arrival at the Plant

"On arrival at the processing plant and before processing begins, birds should rest for two to three hours in a specially designed lairage, so that their heart and breathing rates can return to normal," explains Tim van Schaik. "This is particularly important in plants using controlled atmosphere stunning, as to be optimally effective, this technology relies on birds breathing normally." The first veterinary check at the processing plant can now be done. The ideal module will make both

this check and the removal of any bird found to be in distress easy, by, for example, being able to flip over the side panel nearest to the bird. This is yet another feature of the Marel Poultry SmartStack module.

Destacking

When birds are ready to be processed, modules are moved to the in-plant set-up of the live bird handling system. If made up from self-nesting trays, modules must be automatically destacked in a smooth way. Open trays then move individually along a system of conveyors to the next step in the processing line. Any birds found to be dead on arrival can be removed immediately after destacking.

First Process

Anesthetization is the first step in processing and marks the end of the journey from growing shed floor to processing line. It can be done either electrically or using a controlled atmosphere. Electrical stunning remains the world's most widely used stunning technology. It is both extremely reliable and effective. Controlled atmosphere stunning, now used increasingly in high



SmartStack transport modules ensure a stress-free journey, offering the largest headroom in the industry. Its floors allow birds to grip, evacuate heat and take care of manure.



With Controlled Atmosphere Stunning, birds are gradually put to sleep. They no longer experience the stress of being handled and conveyed upside down.

volume plants worldwide, offers the considerable benefit that birds are sedated before being shackled to the processing line. They no longer experience the stress of being handled and then conveyed upside down to the electrical stunner, seen as a big step forwards for animal well-being. Shackling operatives no longer have to struggle with flapping birds.

Gentle Lapse

Multi-stage controlled atmosphere stunning systems, such as the Marel Poultry SmoothFlow system take birds through a succession of stages where the percentage of CO₂ is gradually increased. The atmosphere of the first induction phase should be formulated so that birds lapse gently into unconsciousness and do not gasp or convulse. Tim van Schaik adds, "CAS SmoothFlow uses a pre-mixed atmosphere, to which both oxygen and carbon dioxide have been

added. After passing through its induction, transition and completion stages, birds leave the SmoothFlow system irreversibly stunned but with their physiological functions still intact. In many markets this is a religious requirement."

Stress-free

Birds have now completed their journey from the growing shed floor to the processing line. This will have lasted several hours. With the right equipment these situations can be effectively managed, ensuring the supply of birds in the best possible, stress-free condition for processing. Sustainability too will have been safeguarded.

Sustainability

Sustainability is about making the best use of available raw material and avoiding waste. Most processes involve assembling individual components into a single

end product. Poultry processing does things the other way round. It disassembles. A sustainable disassembly process pays careful attention to maintaining the quality of each and every component and finding the very best use for it. This means limiting the incidence of DOAs and downgrades to an absolute minimum, ideally to zero.

**"SUSTAINABILITY,
CARE OF THE
ENVIRONMENT AND
ANIMAL WELL-BEING
ARE IMPORTANT
VALUES."**

Responsible Energy and Water Use

Equipment design should focus on using inputs such as energy and water responsibly. The Marel Poultry ATLAS live bird handling in-plant system is robust and simple and has only three automatic pieces of equipment. SmartStack modules have been designed to be easy to clean thoroughly. A new module washing system uses clever nozzle design and positioning to ensure that no more water than absolutely necessary is used during the process. The Marel Poultry SmoothFlow CAS system has been designed to minimize gas consumption rates.

Consumers in many countries across the globe are showing increasing interest in how their food is produced. Sustainability, care of the environment and the well-being of the animals whose meat we eat are values, which are becoming daily more important. "It is only right that we should concentrate on delivering a journey from shed to shackle, which is as smooth and stress-free as possible," concludes Tim van Schaik.

www.marel.com/poultry

Steel belts have been used as a medium for conveying food products for nearly 100 years, the first application being biscuits transported through bake ovens in 1925. And it was only six years later that the stainless steel belt arrived on the market and opened the door to literally hundreds of applications across the food industry. And the company behind both of these innovations went on to become today's market leading belt manufacturer, IPCO.

Today, IPCO steel belts are used across in applications ranging from simple conveying to the processing of every type of meat product as well as poultry, pet foods and seafood. Beyond this, IPCO's belts can today be found in factories processing baked goods, chocolate, confectionery, fruit, vegetables, nuts and seeds.

For some applications, the thermal properties are key, enabling steel belts to be used for freezing, cooling, steaming, solidifying, drying and baking.

For others, it is the inherent durability of stainless steel that makes these belts the right investment decision. Far more resistant to damage by corrosion, abrasion or impact than any other belt type, a stainless steel conveyor provides the ideal long-term solution for potentially aggressive environments such as meat boning plants.

In every case though - and of greatest significance to the meat processing industry - it is the ability to maintain the highest standards of hygiene that really sets stainless steel apart from other materials.

There are two aspects to this. First of all, there's the inherent

HYGIENIC MEAT PROCESSING ON STAINLESS STEEL CONVEYORS

corrosion-resistance of the material. Stainless steel reacts with oxygen from water and air to form a very thin, stable film that consists of corrosion-resistant metal oxides and hydroxides.

Belts used in meat processing have to be able to resist corrosive materials like blood, fatty acids and salt and will often operate in conditions of high humidity and varying temperatures. This film acts as a barrier to limit oxygen and water access to the underlying metal surface, thereby preventing corrosion.

The fact that it does not corrode means there's no risk of a reaction with the meat product. Similarly, chemical and bacterial neutrality means there is no threat to human health and no risk of the taste of foods being tainted.

The second factor behind the unsurpassed hygienic qualities of stainless steel is its cleanability.

The Reassurance of Stainless Steel's Unparalleled Cleanability

One of the greatest threats to a sanitary meat processing environment is the formation of biofilm on work surfaces, and unless cleaning is complete and effective, this can lead to the growth of harmful bacteria and pathogens.

A stainless steel belt is perfectly flat and smooth so there are no gaps, textures or hidden areas in which microbes could hide. Even the joint where the two ends of the belt come together is invisible. It's also extremely tough and resistant to damage and scratches, and this is very important.

Efficient cleaning enables high standards of hygiene to be maintained and there is no material easier to clean than stainless steel. Research at Finnish food laboratory VTT Expert Services Ltd found that that risk of bacterial build-up could be reduced, simply by upgrading to a stainless steel conveyor.

This research project looked at the 'cleanability' of three types of conveyor belt: stainless steel (AISI 301), solid plastic, and a plastic conveyor of slat construction. All three were tested in pristine condition and also with knife damage to replicate everyday wear.

A suspension of cow's blood and three types of microbes was applied to clean belts. The microbes used were *Pseudomonas fragi*, *Candida albicans* and *Listeria innocua*, chosen to replicate those found in meat processing facilities when cleaning is insufficiently thorough. The suspension was left for



IPCO Compact Conveyor



IPCO Steel belt production



IPCO meat cutting

predetermined periods before being cleaned. Visual observations were then made (dirt was clearly visible on the damaged plastic surfaces), swabs taken, and microbial loads assessed using scanning electron microscopy (SEM).

The conclusion was that: “stainless steel is more cleanable than the two different plastic surfaces tested according to the culturing results. The difference is more significant for damaged surfaces.” (The full report is available for download at ipco.com/hygiene.)

Ease of cleaning offers other benefits too. The efficiency with which a steel belt can be sanitized cuts downtime and ensures high availability. Short cleaning times also represent best practice in ecological and economical terms, with low water consumption and low use of detergents and other cleaning chemicals.

“One particular customer processes around 250 tons of pork and beef a day through a multi-shift operation and has been using our belts for many years,” explains Marko Leber, Global Product Manager, Food at IPCO. “Hygiene is their number one priority of course but other considerations include short cleaning times, high availability and food-compatible cleaning agents.

“The sheer volume and weight of meat handled means that load-resistance is also a factor and actually eliminates a number of belt types from the list of possibilities. Overall though, it is ease and speed of cleaning that makes steel belts the obvious choice for this company. In their own words, steel belts are “unrivalled” in terms of hygiene.”

Belts, Components and Complete, Food-Grade Conveyors

This extensive experience of supporting the meat industry puts IPCO in a unique position to work in partnership with equipment manufacturers and end users in the design of conveyor systems.

For some customers, belt supply is sufficient, while for others IPCO’s engineers provide additional support in the form of conveyor design and the supply of associated components including graphite skid bars that optimize performance, sheaves, shafts, bearings and breakpoints.

In addition, IPCO can supply standalone conveyor solutions. A recent development is the company’s compact food-grade unit. This features a stainless steel framework that allows easy access for cleaning, with no narrow gaps or other hard-

to-reach places. The framework is also designed to minimize the risk of water pooling after cleaning, reducing the possibility of bacterial growth.

The stainless steel conveyor belt is ‘endless welded’ to eliminate any trace of a joint. All bearings are food approved and lubricated for life with food-approved lubricating grease. The motor is food-approved and has IP66 protection.

The length and wide of the conveyor is custom made to the customer’s needs and the system incorporates all necessary tensioning equipment and belt tracking control for reliable long term service.

IPCO, previously operating as Sandvik Process Systems, is the world’s largest manufacturer of steel belts to the food industry, supplying and installing steel belts for machine builders and end users, and supporting them through a global service network.

The company produces belts of all sizes in different grades to suit different processes. They can be supplied in carbon or stainless steel, and in either solid or perforated form, depending on the needs of the product to be processed.

www.ipco.com

SCHUR FLEXIBLES GROUP: ACHIEVING SUSTAINABILITY IN THE PACKAGING INDUSTRY



Photo: Schur Flexibles Group

Dr. Martin Berlekamp, Head of Sustainability, Schur Flexibles Group.

Martin Berlekamp, Head of Sustainability at Schur Flexibles Group, discusses the sustainability initiatives his firm is undertaking to help achieve a greener future.

Showcasing that actions speak louder than words, Schur Flexibles Group has proven how much of a priority sustainability is for the firm. Having backed up claims that sustainability is at the forefront of decision-making following its recognition as the winner of FlexiClose's 2018 German Packaging Award in Sustainability, Schur Flexibles has established the 5R approach to a greener future: Recycling, Replace, Reduction, Renewal and Responsibility.

To help achieve this goal, Martin Berlekamp, Head of Sustainability

at Schur Flexibles Group, believes his company's determination to transform the handling of plastics has been key. "We see our current sustainability transformation as a challenge because society is keen to change the treatment of plastics," says Berlekamp. "As packaging takes up a high percentage of plastics being produced, we have to find a responsible way to handle sustainability along the value chain. As Schur Flexibles is well prepared with its current and new product portfolio, we can help our customers fulfil their sustainability goals which are often much more demanding than the ones requested by the legislation."

Schur Flexibles aims to make the majority of its products recyclable before 2025 and already possesses an array of recyclable products in its portfolio, with the company looking to ensure its product materials are responsibly sourced. Schur Flexibles is considered the best in the market in raw material consumption along with producing primarily recyclable packaging. "Sustainability is a clear management target and the company provides the resources to follow up," affirms Berlekamp. "In

addition to our 2025 target, we also have one for 2020 – we want to provide a recyclable solution to all markets. The aim now is to meet our short-term target and devise a strategy, project plan and ensure resources are in place for the 2025 one." Although Martin Berlekamp admits that his firm's 2025 sustainability targets are challenging, the firm is determined to align to the requirements of large supermarket chains. "There's a lot of work to do. If you look at Carrefour, Tesco, Aldi or Lidl, they have their own sustainability



Photo: Schur Flexibles Group

Schur Flexibles offers and constantly expands their range of high-performance films that are recyclable, exceptionally material saving, based on renewable resources and can replace conventional films.

programs," he says. "These are the targets that customers would like to see in their own shops. As a flexible film supplier, if you're not capable of delivering recyclable solutions, then you won't be in operation for very long."

Fritz Humer, Chief Sales Officer (CSO) at Schur Flexibles Group, states the company's growth over the past few years has been significant, and the future is even more encouraging. "We're on an exciting journey with customers, markets and society having a new way of looking at packaging materials," says Humer. "As a responsible



Photo: Schur Flexibles Group

Schur Flexibles 5-R program for sustainable film production

company, sustainability is in our DNA - the proven concepts and established materials, the R&D pipeline, management and entire staff of Schur Flexibles will lead us to being the number one supplier of sustainable packaging solutions. This is the most important part of the growth strategy of the company."

"Everyone has become a lot more aware of what's going on in the oceans," says Berlekamp. "Since that time, customers are more sensitive about packaging materials, particularly plastic ones. It's become a key reason why the whole community is now looking for sustainable alternatives. They're coming into a circular economy and it has been one of the biggest challenges because, in the past, the flexible films industry was really developing thin films using multiple polymers. Recyclability is not a given if you have different polymers, and this is why we're trying to do more for less."

With a clear idea of how to reduce plastics consumption, Berlekamp believes the best way

to tackle reduction is to utilise the thinnest film to help reduce harmful emissions. "The carbon footprint impact of packed foods is around 97%, with the additional 3% coming from the packaging film," says Berlekamp. "Nevertheless, we have to take care of that 3% because if we reduce that to the sustainable and even recyclable possible solution, then it enables us to decrease the carbon footprint in the easiest way."

As a member of the CEFLEX and Save Food initiatives, Schur Flexibles is accelerating its sustainability drive through these organisations. CEFLEX is the collaborative initiative that features a consortium of European companies and associations that represents the entire flexible packaging supply chain. "CEFLEX is very important and has an influence on European legislation because people are now listening," he says. "I believe it's good that we have something independent coming from the industry and the value chain of packaging to examine how we can change the future of packaging." With one third of all food wasted or lost, Save Food exists to drive innovations, promote interdisciplinary conversations and generate solutions to debates across the supply chain. In a joint effort with industry members, politics and civil society, the organisation seeks to collaboratively solve food wastage. "We can help to reduce food waste by ensuring that food is packed with a suitable and recyclable packaging film because it will have a bigger impact on cutting our carbon footprint than just reducing plastic use," notes Berlekamp. In order to ensure that food is packed correctly, Schur Flexibles has established a key partnership with Nippon Gohsei, a group company of Mitsubishi



Photo: Schur Flexibles Group

The new generation of drawstring bags: The recyclable EcoString bag as well as the drawstring are made of mono PE film.

Chemicals and a producer of EVOH and PVOH providing an appropriate barrier between the product, oxygen and substances such as odd flavors that could contaminate the product. "You need a barrier against oxygen in order to protect valuable proteins like in fish, cheese and meat. We're working closely with Nippon Gohsei - also a member of CEFLEX - in order to develop tailor-made barriers and integrate them into our films."

With a drive to grow through acquisition as well as promoting growth organically, Berlekamp affirms the company's target is to become one of the biggest companies in its field in Europe. "We positioned ourselves in the market environment with our sustainable and recyclable solutions early and have become - we're proud to say - the best-in-class," he affirms. "Since I joined, we've purchased two bigger companies and two smaller ones. We're ambitious - the target is for Schur Flexibles to be among the top five players in Europe. We have to try and balance our growth in packaging materials and look at how we can gain market share from the competition following the launch of new products in the market."

www.schur.com



Photo: Schur Flexibles Group

The innovative recyclable thermoforming film VACUFlex(re) EX-T made of polyolefins combines the best machinability with the highest product protection and impresses with its exceptional shine.

MULTIVAC DEMONSTRATES ITS EXPERTISE IN AUTOMATION AND COMPLETE LINES

At this year's Interpack MULTIVAC will be presenting itself as a supplier of integrated solutions in packaging and processing. The company's focus on the main exhibition stand (Hall 5, E 23) will include four fully automated packaging lines, as well as concepts for producing sustainable packaging solutions. There will also be solutions on show for the digitalisation of processes and business models.

Solution for Fully Automatic Packing in Trays

The heart of this fully automated line is the compact TX 710 traysealer, which is suitable for packing a broad spectrum of food products thanks to its wide range of possible designs. For printing the upper web, the TX 710 is equipped with a DP 225 direct web printer, which has an integrated TTO 30 thermal transfer printer. A multihead weigher from Cabinplant is used for filling the pots. The pots used are made of mono polypropylene and therefore contribute to meeting the current requirements as regards their recycling. The precise and rapid labelling of the pots is carried out by a conveyor belt labeller of the latest generation, the L 320 model. The H 130 handling module is used to load the pots into boxes.

Solution for Packing in Board Trays

MULTIVAC will also be presenting a packaging line for packing in board trays. Here the trays are

run on a R 245 thermoforming packaging machine. The R 245 is equipped with an infeed system for the erected board trays. The trays are lined in the forming die with a suitable plastic film, which provides the required barrier for product protection. This film can be separated from the cardboard backing after use, and the individual components of the pack can then be directed to the appropriate recycling loop. The thermoforming packaging machine is equipped with a DP 200 direct web printer for coding the upper web with the individual product data. A visual inspection system provides reliable monitoring of the print.

Automated Line for Slicing and Packing Processed Products

The high-output S 1600 slicer is equipped with fully automatic central loading and, thanks to its innovative slicing technology, enables a very high slicing speed of up to 1,600 highly accurate slices per minute to be achieved. The SB 625 transfer conveyor ensures that the sliced product is transferred efficiently to the thermoforming packaging machine. The control of the conveyor is integrated into the packaging machine and slicer, which means the best results are achieved throughout the line. The interface is however designed in such a way, that the conveyor can also be easily linked to slicers from other manufacturers. The sliced products are packed on the RX 4.0 thermoforming packaging machine, which sets the benchmark in the market with

its sensor system. The packs are precisely labelled by the new CL 2XX cross web labeller.

Fully Integrated Line for Portioning and Packing of Fresh Meat

The heart of the line is the TX 730 traysealer, a new model of the X-line generation. Pre-cut cardboard sheets will be run on the TX 730 for producing MultiFresh™ vacuum skin packs, and the traysealer will be equipped with an inside cut. Portioning will be performed by the highly flexible and multifunctional GMS 520 singlecut meat portioning machine. Despite its compact construction, TVI's highly successful model sets the benchmark as regards quality, output, yield, precision, and above all flexibility. The L 310 conveyor belt labeller is used for applying an attractive full wrap label to the MultiFresh™ packs. The I 310 visual inspection system provides reliable monitoring of quality and print even at maximum processing speed.

New TX 810 Traysealer

MULTIVAC will be presenting the new TX 810 traysealer to the public for the first time at interpack. Thanks to its two-track design, this model enables a significantly higher output to be achieved.

MULTIVAC will also be presenting its range of digital services at interpack. MULTIVAC's groundbreaking solutions provide their customers with a wide range of tools for increasing machine availability and efficiency.



Sustainable Packaging Solutions

Another focus of the company's presence at the trade fair is its presentation of sustainable packaging solutions. On display

will be a wide range of concepts, which contribute to reducing packaging material consumption in the production of packs, as well as other concepts for producing packs, which meet current requirements for recyclability. One example of

this is the MULTIVAC PaperBoard range, which is made up of a wide variety of paper fibre-based materials for producing MAP and vacuum skin packs on thermoforming packaging machines and traysealers. www.multivac.com



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IN SEPARATION



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- High optimum yield • Nice structured meat • No prebreaker needed
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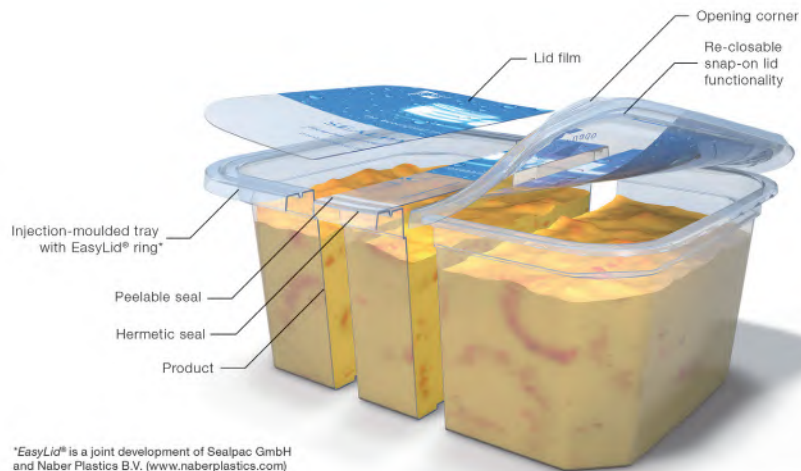
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www.lima-france.com lima@lima-france.com

HOW TO MAKE THREE OUT OF TWO - EASYLID® ALLOWS FOR MORE SUSTAINABLE PACKAGING OF DELI PRODUCTS BY SAVING A FULL STEP IN THE PROCESS

Achieving better climate protection through more sustainable use of resources is a global challenge, but food manufacturers have a special responsibility here. Packaging made of plastic protects the product against spoilage throughout its entire shelf life, as well as against damage during storage and transport, thus ensuring safer and longerlasting food. The downside: according to the European Commission, citizens in Europe produce 25 million tonnes of plastic waste each year. The European Strategy for Plastics in a Circular Economy by the European Commission intends to lay the foundation for a new and sustainable plastics industry. One of the aims of this strategy is to change the way plastic packaging is handled within the European Union. However, there are a number of food applications for which there currently is no suitable alternative to plastic. Especially in the segment of delicacies, for example when packaging products such as salads, antipasti, seafood, cheese or meat, often only plastic packaging can provide the required product safety. The challenge for manufacturers lies in finding functional, yet at the same time more sustainable packaging systems that combine ecological and economic aspects.

In case of deli products, trays with reclosable lids are a common sight. This packaging system allows for convenient handling, safe storage of opened packs and excellent protection of the product against premature deterioration.



SEALPAC's Easylid® system: Sealing and lidding in one single step.

Such trays are often supplied with a snap-on lid, in addition to the top film that provides the hermetic seal. "This third component, however, clearly contradicts with the general pursuit for plastic reduction", as Marcel Veenstra, Marketing & Communications Manager at Sealpac International, explains. SEALPAC, a leading global supplier of traysealers and thermoformers, as well as innovator in packaging

technologies, sees itself as a pioneer. "For some time now, our research and development activities have been focused on the optimization of conventional packaging systems towards more sustainable alternatives, leading to innovative solutions such as FlatSkin® and eTray®. Our developments always follow the same premise: they must be technically feasible, but also economically viable."



SEALPAC's Easylid® system: In-mould labelling enhances product appearance and shelf life.

EasyLid® - Savings Across the Entire Chain

SEALPAC successfully introduced a whole new packaging system several years ago, which is now receiving increased attention due to the discussion about plastic waste: EasyLid®. The concept, developed together with Naber Plastics, a well-known injection-moulding company in the Netherlands, is suitable for modified atmosphere packaging, making it ideal for delicacies. In short, EasyLid® is a tray-sealing technology that enables sealing and lidding in one single step, hence creating maximum efficiency in

By eliminating the common snap-on lid, EasyLid® is significantly more cost efficient and resource saving than comparable packaging. This stems from a series of benefits. For food manufacturers, the investment costs are reduced by not requiring a lidding system. Furthermore, the ground-breaking concept saves on time and space in their valuable production area, reduces the need for storage capacity and minimizes packaging waste. In other words, the EasyLid® concept contributes to greater sustainability and efficiency in the packaging process: a true innovation from every perspective. Recognized for its impact on the environment,

retailers, who are demanding mono materials for improved recyclability”, as Marcel Veenstra explains. “However, a resource-saving use of materials and better recyclability of the plastic do not have to go at the expense of attractiveness.” EasyLid® trays are perfectly suited for in-mould labelling (IML). In that case, as part of the manufacturing process of the tray, a label is included that enhances its design possibilities, but also provides a higher barrier. As the label is fully integrated into the polypropylene, it is resistant to moist. This is particularly beneficial to chilled deli foods, as the label will not detach from the tray and a high-quality appearance is guaranteed. By using the same material for the lidding film, tray and in-mould label, in this case mono PP, easy recycling is made possible, as recommended by the various packaging guidelines in food production.



ALPAC's Easylid® system: Perfectly suitable for modified atmosphere packaging of various deli products.

the packaging process. The system requires special, patented trays that, next to the common sealing edge, have an additional perforated ring. A peelable seal is applied to the regular sealing edge, whereas the additional ring is hermetically sealed in the same process. Upon opening the tray for the first time, the lid function is automatically activated. This allows the consumer to reclose the tray and keep its contents fresh during its entire shelf life.

the EasyLid® system has already been awarded with various international packaging prizes.

Improved Recyclability, Attractive Looks

To produce the EasyLid® trays, Naber Plastics uses 100 percent polypropylene (PP). “In doing so, we are following the European guidelines on packaging materials for protein products, as well as the changing requirements of major

The EasyLid® solution runs on all of SEALPAC's fully automated A-series traysealers. Depending on the application, outputs of up to 160 packs per minute are achieved. “EasyLid® is already celebrating success across Europe. With hundreds of millions of trays produced so far, it is an established concept that proved itself even before the industry made resource-saving production methods a priority. As a result of the latest market trends, it is now in even greater demand, which makes us very happy. Because nothing is as powerful as coming up with a clever innovation at the right time”, Marcel Veenstra concludes. www.sealpacinternational.com

LIMA, A WORLD OF SEPARATION



Since the time of its incorporation in 1981, LIMA is a company which has specialized itself in the design, manufacturing and sales of meat-bone separators, deboning and desinewing machines for the poultry, pork, lamb, beef and fish industries.

The company is located in the town of Quimper in the Brittany region, in the western part of France. Equipped with the most up-to-date machine tools and facilities, LIMA keeps on innovating new mechanical separation technology. Its factory, in addition to manufacturing, offers testing facilities in its modern laboratory.

Numerous LIMA machines models, with separating capacities ranging from 100 to 20.000 kg/hr (220 - 44,000 lbs), corresponding to the highest EU and US quality standards are at 95 % exported worldwide through a team of distributors servicing over 100 countries on the 5 continents.

For those not evolving in the poultry or meat industry, the word LIMA may only be associated with the magnificent capital city of Peru.

However, since its modest beginnings in the 80's, LIMA which in French translates to Les Innovations Mécaniques Alimentaires, The Mechanical Innovations for the Food industry, rapidly made a name for itself by becoming one of the most acknowledged world leaders in its field at this current time.

We may say that mechanical separation is their life at LIMA as they are 100% dedicated to this. Their job is to separate the hard from the soft using a mechanical means.

The purpose is to maximize the value of co-products, such as, wings, necks, drumsticks as well as poultry carcasses after automatic cut-up lines, which would otherwise be discarded or sold at a very low price as it would be virtually impossible to recover all this meat from the bones manually. The separation of the meat from the bones is performed by using a rotary auger into a filter. The machine gently pre-crushes the bones and as the auger pushes the raw material through the filter, the pressure is easily regulated by adjusting the distance between two conical parts

at the bone exit of the machine. A graduated device enables the operator to know exactly in which pressure adjustment the machine is. As the pressure increases on the raw material, it enables the soft parts - the meat - to extract through the openings of the filter. The harder parts, such as the bones, continue further and exit the machine. The first and most common use of such separated meat, referred to as Mechanically Separated Meat (MSM) is the production of fine paste sausages such as Frankfurters for instance.

This is avoiding a considerable amount of non-desired side effects of the animal production.

This is a very significant amount of meat protein which is transformed into sausages or other meat products and offered on the market, generally at a very affordable price. In this sense, LIMA machines are serving a "green oriented" attitude.

LIMA has always been a prime mover in the development of new separation technology and filed several international patents.

Among the developments which were made by LIMA, only to quote a few:

- 1984 : Original one-piece slotted filter / auger patent on its LIMA S meat-bone separators for the production of excellent quality MSM at high yield.
- 1994 : Low pressure deboning head (filter + auger) patent with the manufacturing of its first low pressure deboners which enables to separate meat from the bones with a better texture and consistency, closer to a minced meat.
- 1999 : Very low calcium deboning head development.
- 2006 : First pork skin / fat separators even for the hardest pork skins.
- 2011 : First BSP beef meat bones separators with incorporated bones pre-breaker for a high quality beef structured MSM.
- 2015 : New very large capacity LIMA RM 2 000 S separator for chicken bones up to 20 000 kg / hr (44 000 lbs/hr), with very low maintenance cost features.

These developments enable LIMA to propose their customers with a full range of:

- Meat-bone separators type S for the production of excellent quality MSM at high yield, sometimes referred to as "LIMA meat" by their customers.
- Deboners for the production of very high quality separated meat in terms of Structure, Color and a low Calcium content, less than 1 000 ppm, commonly also referred to as "3 mm MSM" or "structured MSM" on the market.

There are many mechanically deboning applications, such as: necks, V bones, drumsticks, front carcasses and wings for raw poultry materials, and back bones, necks and ribs for pork.

- Desinewers remove 80-96% of tendons, sinews, cartilages, bone

chips from deboned meat cuts such as, trimmings, aponeurosis and shank meat. Resulting in an excellent recovery of desinewed meat while C/P ratios remain under controlled values and the temperature remains constant throughout the process.

LIMA machines benefit from the following advantages :

- No pre-breaking needed,
- Single stage operation,
- Low maintenance cost,
- Optimum high yields,
- Quick use and operator friendly



LIMA in its daily endeavour to develop equipment which actually fit its customers various separation needs, has standardized its range of equipment in order to enable most separators to be changed over into deboners or desinewers and vice versa in a quick, easy and effective way.

With customer input, other specific applications have been developed throughout the years. These are not only for the human food industry, but also the pet food and collagen industry. For example:

- Pork fat - skin separation, the good quality fat being reused in the formulation of further

processed meat products and the defatted skin being used by collagen manufacturers.

- Cartilage separation from pork tracheas or beef gullets, have many uses in the cosmetic and pharmaceutical industry.

Other soft bones coming from fish central bones after filleting or fish flaps can also be separated from the fish pulp, such fish pulp being used for the formulation of further processed products for human or pet food consumptions.

LIMA's expertise and experience has enabled the company to develop and propose his customers with deboners for much harder bones such as pork or beef.

These contribute to an already established reputation of robust, user friendly and efficient separation equipment LIMA has.

It would take a very long article to enumerate all the separation capabilities of LIMA and what LIMA's customers actually separate, some animals being sometimes more exotic than those already mentioned. LIMA had estimated back in 2014 that more than 1 500 000 metric tons of separated meat were processed every year on LIMA separators, and this number keeps growing on. Definitely, LIMA has a world of separation!

LIMA actively participates to more than 35 different tradeshow a year, many of them being specialized in the poultry, meat and fish industries such as IFFA in Frankfurt, ANUGA FOODTEC in Cologne, IPPE in Atlanta, SIAL in Paris, SEAFOOD PROCESSING shows in Brussels and many VIV shows in Europe, Asia and in the Middle East.

www.lima-france.com

PARTNERSHIP APPROACH SUPPORTS POULTRY PROCESSOR'S GROWTH

The longstanding partnership between Hungarian poultry specialist Taravis and packing line solutions provider Ishida Europe has been instrumental in Taravis's continuing success and growth.

In particular, Ishida's support and advice have been crucial in helping to modernise the Taravis factory in Sárvár through the introduction of increased automation which has led to significant improvements in performance. As part of this,

next two were then devoted to packing, now both processes are undertaken in a single shift as part of an inline operation. Just as significant, product giveaway has been greatly reduced. In recent years, it has been less than 3% across the entire factory whereas previously it was well over 6%, or as managing director Ákos Szabó puts it "far too much" pointing out that this figure does not take into account the yield loss through the trimming of birds to meet the required target weight.

and two multihead weighers, which ensure consistently accurate weights for the pre-packed trays and vacuum packs of chicken. In particular, the Robotgrader, which combines weighing and pick and place technologies to grade chicken pieces and pack them to a fixed weight straight into the tray, is able to minimise giveaway to less than 1%.

To handle these higher speeds for the packing of product into trays, Ishida designed an effective distribution system to transfer the chicken pieces to four Ishida QX traysealers, whose top speeds are well within the 60 trays per minute target for Taravis. In addition, the introduction of the Ishida traysealers enabled Taravis to become the first poultry processor in Hungary to introduce top sealed MAP trays into the retail sector, offering extended shelf-life and enhanced presentation compared to the



Ishida has supplied a variety of its advanced equipment, including graders, weighers, tray sealers, weigh-price-labellers, checkweighers and an x-ray inspection system, along with ancillary equipment such as conveyors

As a result, the Taravis factory is today able to handle 8,000 birds every hour, 64,000 in a day, compared to the 14,000 birds per day that it handled when it first opened in 2001. Equally significant, efficiencies have hugely improved. Whereas previously slaughter of the birds would take place during one shift, while the



Key to the higher speed and accuracy in the packing process has been the replacement of the slow and labour-intensive hand packing operation with two Ishida Flex Graders, one Robotgrader

previous shrink-wrapped version. Today the factory is producing around 25,000 MAP trays each day.

Other equipment that Ishida has introduced to improve operations

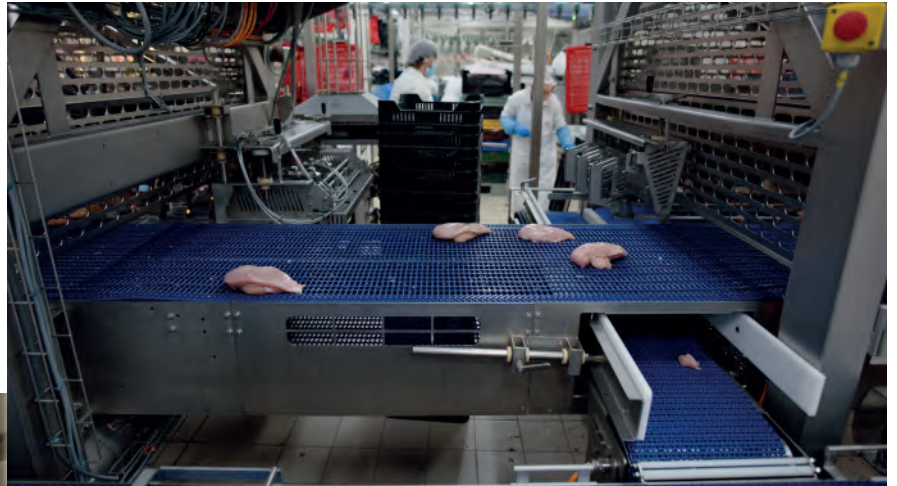
includes a third multihead weigher for the weighing of IQF products, and nine hopper scales for bulk weighing, along with a complete crate handling system to transfer the filled crates to the warehouse or IQF line. On the traysealer lines, checkweighers provide a final weight check and weigh-price-labellers apply the relevant retail label with pack weight and price information.

Typical target weights are between 500g and 1kg. The trays are a universal size with different depths depending on the amount of product. Format changeovers can be speeded up thanks to

Ákos Szabó confirms that Ishida's expertise and experience have been crucial to the company's growth and development.

"Ishida is always able to fully understand our requirements and come up with the appropriate

Another major benefit of the Ishida equipment is its reliability. "Indeed, our satisfaction with the performance and reliability of our initial Ishida equipment is another reason why we have continued to specify Ishida machines throughout the factory," says Mr Szabó.



the use of pre-sets in the Ishida equipment which enables pack requirements to be called up easily via the machines' touch screens.

Ishida has also worked closely with Taravis to integrate any new equipment into the factory, where space has become quite limited. As part of this, the layout has been designed to offer maximum flexibility, for example enabling products to be diverted from the Robotgrader to the multihead weighers, and the installation of a carousel conveyor to allow buffering of products to avoid any production stoppages.

approach to support our drive for continuous improvement," he explains. "At the same time, the installation of a new machine can present challenges elsewhere on the line in terms of maintaining throughput and avoiding bottlenecks, or simply in terms of ensuring it can fit into the existing layout. This is where the benefit of working with Ishida is very evident as the company is always able to come up with solutions to help us achieve our objectives with minimum fuss." In addition, Ishida provides full training on any new equipment installed.

Taravis is already well advanced with its plans to further increase its throughput of birds to 70,000 per day. "We will continue to drive the business forward," confirms Mr Szabó, "and Ishida will remain our partner of choice in our expansion."

Taravis is part of Gallus Poultry Farming and Hatching Ltd, a family business established in 1991 for the raising and rearing of chickens, hatching the eggs produced during the rearing as well as feed production and feed mixing. To enable Gallus to offer a complete product line from field to table, Taravis was launched in 2001 to provide cutting, processing, packing and onward sales. The company supplies private label products to leading retailers as well as under its own brand 'Our Chicken' and also offers ready-to-cook, marinated products. Taravis employs around 1,000 people with an annual turnover of €90m.

www.ishida.com

HOW DIGITALIZATION OF THE SUPPLY CHAIN WILL REDUCE GLOBAL FOOD WASTE

The scale of the global food waste problem is staggering. According to reports, 1.6 billion tons of food are lost or wasted every year, equating to a total value of \$1.2 trillion being wiped from the supply chain. With one-third of the total amount of food produced globally being misused, the industry needs to look towards innovation and digitalization to combat this ever-growing trend.

Through embracing technology and digitalizing the food supply chain, a move can be made towards reducing the amount of food waste and loss within the industry. Not only that, but it can also help ensure there's enough resource to sustainably support the future global population.

With the UN's Sustainable Development Goals setting a target of halving food loss and waste by 2030, I've looked at how the digitalization of the supply chain could help decrease global food waste.

The Need for Innovation to Reduce Waste

Although food waste is evident across the entire supply chain, the vast majority comes at the very beginning (during production) and at the very end (during consumption). The former of these is more common within developing countries, where the infrastructure is of a poor standard and cannot handle the food thus creating waste, whilst the latter is more pronounced in developed countries with waste being caused by both retailers and consumers.

According to the Boston Consultancy Group (BCG), the amount of food waste created in the supply chain is set to rise 1.9 per cent from 2015 to 2030. You may think this is a small rise, but when put into perspective with the current 1.6 billion tons wasted every year, this figure will increase by 30.4 million tons.

To combat this increase in waste, the food supply chain needs to go under a digital transformation. From production and processing to the retailers themselves, systematic changes are required in food supply chain management to help everyone utilize this precious resource more efficiently and cut back on the amount of waste we're creating as a society.

Utilizing IoT in the Supply Chain

Through having better levels of communication across the supply chain, the amount of food waste produced can be reduced. Each aspect of the supply chain must be in constant contact with one another to ensure our resources are managed efficiently.

This is where the Internet of Things (IoT) can support and improve supply chain efficiencies. Based on having interconnected and interrelated systems and processes, IoT allows each aspects of the food industry to have access to key data around the supply, production and management of produce, which can help reduce the amount of waste created. Without the wider adoption of IoT in the food supply chain, the levels of food waste could



increase by 50-90 per cent as a result of several combined factors, such as the increase in food demand due to the ever-growing population.

By allowing all stakeholders within the supply chain access to key data shared across integrated systems, processes can be optimized further along in the chain to maximize how the produce is handled. For example, a bad batch of apples with a high percentage of internal browning would require a specific equipment set up and would need to be fine-tuned to ensure the maximum value can be extracted from the apples. It is believed having this connectivity could save the supply chain up to \$60bn in waste.

Through having this pre-warning of any information regarding a batch of produce, farmers can not only optimize their yields by reducing the risk of waste, but the other stakeholders can also plan accordingly to try and prevent the cause of waste.

Having this ability to share data through IoT can also help reduce waste from a consumer standpoint. Retailers could use the real-time data in stores to showcase when the produce was harvested or picked and offer insights into the projected "sell by date". This can educate

consumers further on how long they have to eat the produce, thus helping reduce food waste through the implementation of technology.

Using Innovation to Improve Current Infrastructure

As well as utilizing IoT, the supply chain can also use digitalization to help improve the infrastructure it currently has in place.

Cold chain plays a huge role in the food industry creating waste, mainly due to poor infrastructure - in India, for example, \$14bn is lost every year through poor cold chain facilities. However, implementing innovative and efficient systems can go a long way in addressing the food waste issue - particularly in developing markets. By deploying more advanced cold chain solutions within the emerging markets, which share the data across the supply chain through IoT, it could prevent large-scale food loss and waste.

The conditions can also change in cold storage, and temperature affects many sorting technologies, so the ability to link cold storage sensors to packing equipment can enhance performance.

But this is nonexistent in many emerging markets, creating poor food storage and transportation conditions early in the value chain that lead to large-scale food loss. Deploying more-advanced supply chain solutions - including cold chain in developing markets - could reduce the problem by \$150 billion annually.

Investing in efficient sorting and grading systems is a key approach

in helping the supply chain reduce the food waste created earlier in the supply chain.

The whole production process is monitored. Everything from the weight and size through to the external properties and defects, and even the internal chemical composition to predict ripeness and longevity. But there are only two points when you can gather information on individual pieces of fruit: when it's picked and when it is sorted. These are the critical data acquisition points.

KPIs need to be based around understanding the types of defect types and classes/grades per batch, to help create a complete map and total view of the produce. This, in turn can help build up big data, meaning every batch gives you new insights and allows you build a bigger picture, creating the ability to make even more informed data-driven decisions. Where appropriate, data can be shared and augmented to 'context', such as weather data or geo-tagging.

The final step is to layer artificial intelligence to start to understand previously unseen patterns and even more efficient ways of working.

Although these KPIs tend not to be designed to help limit the amount of waste produce, utilizing sorting and grading technology can automatically support a waste sensitive environment by recovering any produce and reusing it for another purpose, such as cattle feed or pet food. This means that rather than creating food waste, an alternative, more suitable use is found. Lower quality fruits can be used for juices or pulped to become products such as guacamole or apple source, whilst starches can

be used for medical purposes. All of these help reduce waste and put the lower quality produce to better use.

Going Digital to Fight Food Waste

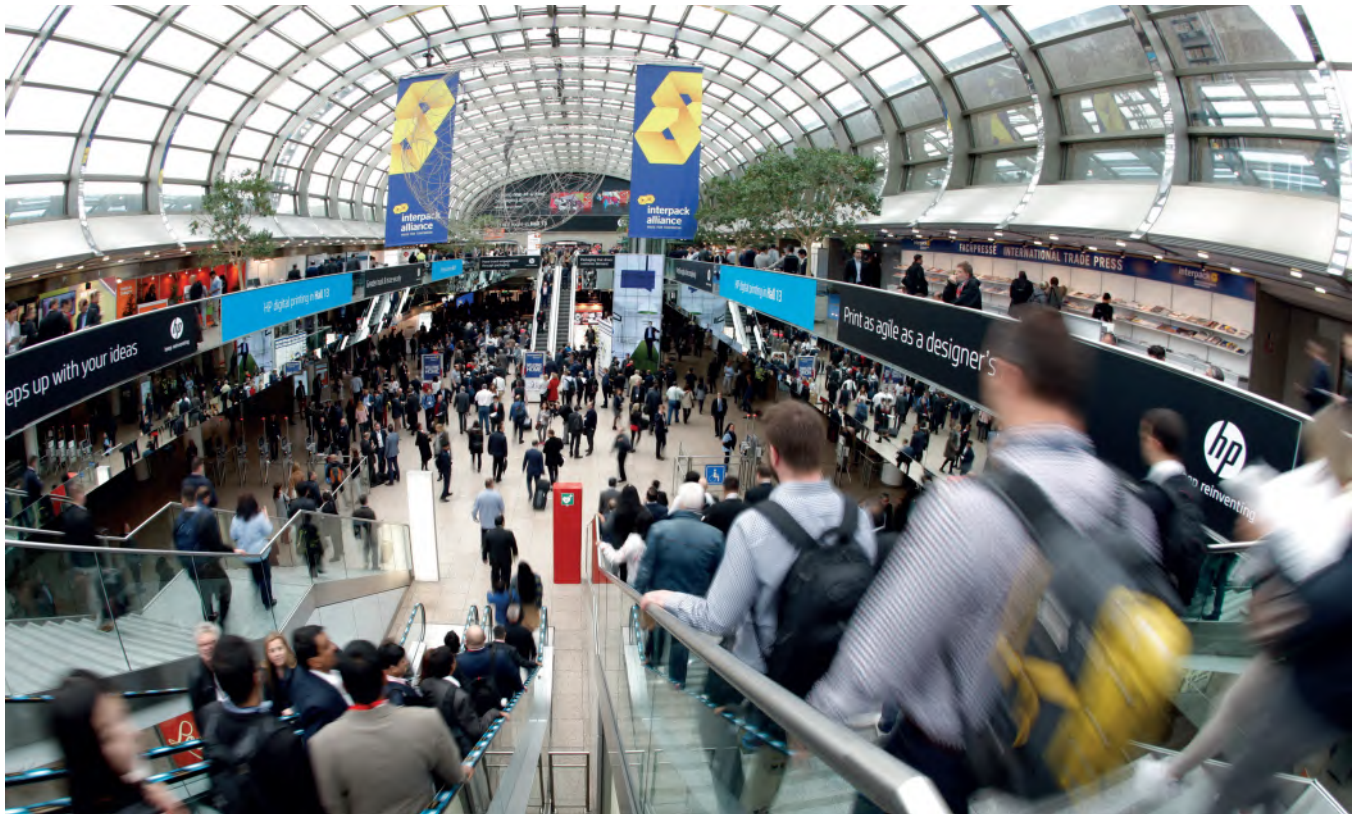
With the ever-rising stats around food waste, now is the time for the industry to adopt a more digitalized approach across the supply chain. Implementing integrated and innovative systems will allow all key stakeholders, from field to fork, to efficiently manage food and reduce the risk of waste at loss.

Digitalization won't just help from a sustainability aspect, but also help businesses drive their own profitability by improving processes and efficiencies. It becomes the answer to the push-pull paradox for commercial benefit and combating global food waste.

TOMRA, is committed to creating sensor-based sorting and grading systems to help the supply chain win the battle against food waste. The company aims to help food businesses maximize yields and ensure any produce can be recovered and reused, increase productivity with high capacity sorting and provide consistent high-quality food assurance.

TOMRA Insight is company's answer to connect it's sorting and grading systems, extract valuable information on the sorting performance and the produce, and make it transparent to the food businesses. Incorporating this further into a digitalized supply chain will help to close the link from farm to fork in the future.

www.tomra.com



INTERPACK 2020: EXHIBITOR DATABASE ONLINE

Trade Fair and Parallel 'Components' Event Fully Booked New Digital Tools for Trade Fair Preparation

Interpack 2020 is fully booked, meaning that around 3,000 exhibitors from approximately 60 countries will present their solutions at the most significant

event for the packaging and associated processing industries from 7 to 13 May 2020. The parallel event for the supplier industry, „components - special

trade fair by interpack“ in Hall 18 is also fully booked.

A Unique Offer

Effective immediately, interested parties can access the “Exhibitors and Products” section at www.interpack.com to obtain an overview of this unique offer and the participating companies. The “Branch Search” section provides eight target-group icons for fast access. Users can click on the icons for a list of exhibitors who have corresponding products in their portfolio for the respective branch. Various selection options allow future visitors to further refine their results and save them in a personal account using the MyOrganizer function. Users can select individual exhibitors



as favourites and add notes – and can, of course, synchronise the list with the interpack app, which is available for iOS and Android. The function also offers a personalised version of the trade fair layout, which makes finding your way around the 18 trade fair halls much easier.

Optimised Hall Layout

Interpack’s optimised structure adds to this, with focal points for user industry offers such as the pharmaceutical and cosmetics industry (Halls 15 to 17) and for sub-segments of the industry such as packaging materials and supplies and the manufacturing thereof (halls surrounding the North Entrance). The offerings in these halls have also been more clearly structured so that it will be easier for visitors to find the exhibitors that are of interest to them here. Presentations that focus on specific process steps have also been grouped closer together.

New Conference: “Life without Packaging?”

Sustainability has been a subject that has been shaping the industry for years and that has recently

become a hotly debated issue as a result of the discussion about plastic packaging in particular. The new “Life without Packaging?” conference controversially

presence of start-ups. The latter are part of the Startup Week Düsseldorf, an event that comprises around 130 events, workshops and pitches, which will take place



highlights the subject areas of packaging, sustainability and the environment and presents different perspectives. Critics and advocates will both have their say and will discuss necessities and what to avoid. The event will focus on sustainability and environmental impact, hygiene and the reduction of food waste. The one-day conference will take place at the CCD Süd from 10.30 a.m. to 4.30 p.m. on 12 May, the penultimate day of the fair. Tickets cost € 299.00 and are available from the interpack’s online shop at www.interpack.com. Here, interested parties will also find details on the speakers and the conference programme.

at various locations throughout Düsseldorf. A shuttle will be available between the trade fair grounds and the Rheinterrassen. The SAVE FOOD Festival is also open to interested citizens.

Matchmaking with Artificial Intelligence

The completely revised Matchmaking tool is a highlight among the new, digital offers that help efficiently plan visits to the trade fair and will be available to future interpack visitors and exhibitors from mid-November. The tool enables users to set up meetings prior to the trade fair. Over time, the system learns from its interactions with the user and suggests potential contacts. These contacts can then be assessed, either positively or negatively, by swiping in the app – similar to a well-known digital dating app. The decisions continuously improve suggestions.

www.interpack.com

The SAVE FOOD Festival

The SAVE FOOD Festival will take place at a central location at the Rheinterrassen in Düsseldorf from 8 to 10 May. The festival’s core elements include an interactive exhibition, conferences and the



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EDITORIAL CALENDAR 2020

1 FEBRUARY

Ordering Deadline: 10 February, 2020
Publication Date: 25 February, 2020

- Humane Stunning and Slaughtering
- Skinning, Deboning & Trimming, Portioning, Grinding, Separating, Sorting Meat, Poultry & Fish Focus
- Conveyors and Belting
- Skin and Whole Muscle Packaging Trends

2 APRIL

Ordering Deadline: 14 April, 2020
Publication Date: 22 April, 2020

- INTERPACK Review
- Mincing, Blending, Mixing, Filling, Forming Technology
- Burger Patties and Meat Snacks
- Disposal and Wastewater Treatment, Energy Efficiency, Processing of Left Over Parts
- Energy Efficient Packaging Equipment Trends and Solutions

3 JUNE

Ordering Deadline: 15 June, 2020
Publication Date: 22 June, 2020

- Dicing, Strip, Cutting, Slicing
- Smoking, Cooking, Coating, Frying
- BBQ Trends, Snacks & Sides, Natural Ingredients Trends
- Marinades, Clean Label, Meat-Free Alternatives
- Sustainable Packaging Trends

4 SEPTEMBER

Ordering Deadline: 14 September, 2020
Publication Date: 22 September, 2020

- **NEW: Agprodmash Special Supplement (In Russian)**
- Sausage, Bacon and Ham Production
- Casing, Netting, Clipping, Labelling
- Process Control, Weighing, IT Solutions, Software, Automation and Robotics Industry 4.0
- Vacuum and Skin Packaging Trends

5 OCTOBER

Ordering Deadline: 12 October, 2020
Publication Date: 27 October, 2020

- Extracting and Processing of Poultry Meat
- Vacuum Pumps
- Food Safety, Hygiene, Disinfection
- Production and Packaging of Convenience Food

6 DECEMBER

Ordering Deadline: 7 December, 2020
Publication Date: 21 December, 2020

- **IPPE Preview**
- Turkey and Duck Processing
- Thermal Processing
- Chilling and Freezing Equipment, Ice machines, IQF Products
- Shelf - Life Extension of Packed Meat, Poultry and Seafood

Fish International	Bremen, Germany	9 Feb - 11 Feb, 2020
Eurocarne	Verona, Italy	29 Jan - 1 Feb, 2020
Process Expo	Chicago, USA	12 Feb - 13 Feb, 2020
Gulfood	Dubai, UAE	16 Feb - 20 Feb, 2020
Grill & BBQ	Sindelfingen, Germany	28 Feb - 1 Mar, 2020
SMAK	Oslo, Norway	3 Mar - 5 Mar, 2020
FOOD EXPO	Athens, Greece	7 Mar - 9 Mar, 2020
VIV MEA	Abu Dhabi	9 Mar - 11 Mar, 2020
CFIA	Rennes, France	11 Mar - 13 Mar, 2020
Seafood Expo	North America, Boston	15 Mar - 17 Mar, 2020
Foodex	Birmingham, UK	30 Mar - 1 Apr, 2020
easyFAIRS Packaging Innovations	Utrecht, Netherlands	31 Mar - 2 Apr, 2020
UzFood	Tashkent, Uzbekista	1 Apr - 3 Apr, 2020
Alimentaria	Barcelona, Spain	20 Apr - 23 Apr, 2020
SIAL	CANADA, Montreal	15 Apr - 17 Apr, 2020
Japan Meat	Tokyo, Japan	15 Apr - 17 Apr, 2020
Worldfood	Warsaw, Poland	21 Apr - 23 Apr, 2020
Seafood Processing Global	Brussels, Belgium	21 Apr - 23 Apr, 2020
Interfood	Krasnodar, Russia	23 Apr - 25 Apr, 2020
VIV RUSSIA	Russia	26 Apr - 28 Apr, 2020
Interpack	Duesseldorf, Germany	7 May - 13 May, 2020
easyFAIRS EMPACK	Dortmund, Germany	19 May - 20 May, 2020
VIV RUSSIA	Russia	26 May - 28 May, 2020
Propak Asia	Bangkok, Thailand	17 Jun - 20 Jun, 2020
Foodtech	Herning, Denmark	29 Sep - 1 Oct, 2020
Agroprodmash,	Moscow, Russia	5 Oct - 9 Oct, 2020
Conxemar	Vigo, Spain	6 Oct - 9 Oct, 2020
SIAL	Paris, France	18 Oct - 21 Oct, 2020
MEAT & GRILL DAYS	Athens, Greece	7 Nov - 9 Nov, 2020
SUFFA	Stuttgart, Germany	7 Nov - 9 Nov, 2020
Pack Expo International	Chicaco, USA	8 Nov - 11 Nov, 2020
ALL4PACK	Paris, France	23 Nov - 26 Nov, 2020
Indagra Food	Bucharest, Romania	Nov 2020
Gulfood Manufacturing	Dubai, UAE	Nov 2020

We reserve the right to make any necessary changes.



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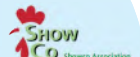
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