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MEATING POINT magazine

SUSTAINABLE TECHNOLOGY, PROCESSING & PACKAGING

PEOPLE FIRST, TECHNOLOGY SECOND

MAXIMIZING PROTEIN'S PROFITABILITY FROM MEAT AND POULTRY

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SUSTAINABILITY IN THE MEAT INDUSTRY: A TOP THEME AT IFFA 2022


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Dear reader,


Jenny Smart

Digitalisation is nothing new for the meat industry and it has been in progress at many companies agendas for years. Office work, process, batch processing, picking, inventory management and machines have been at least partly digitalised. For companies aiming operational excellence, the goal is to further enhance data-driven decision in order to ensure their success.

The global pandemic has dramatically accelerated the rate of change and the adoption of digital technologies across the industry. To stay competitive in the new business and economic environment requires new strategies and practices. Smart solutions have been key in responding to the rapidly changing environment, and most businesses have ramped up their investments accordingly.

Digital adoption has taken a quantum leap at both the organizational and industry levels, transforming the meat industry. Words like automation, Industry 4.0, smart factories, Big data and Internet of Things are becoming reality in the industry and no longer just buzz words.

Our cover story " People First, Technology Second", to consider not only the performance of your software solution but also your work partnership and service before, during, and after implementation. looks into the importance of choosing the right technology partner and its crucial role in achieving best results in digital transformation. Read on pages 10-12.

As always, we feature the industry's latest news and developments, top-notch technological innovations, case studies, as well as some of the upcoming trade-fairs.

Enjoy your read!

PUBLISHER:

MEATING POINT MAGAZINE Ltd.
41 Sidney Avenue, N13 4XA
London, UK
TEL: +44 (0)20 8581 2341
FAX: +44 (0)20 8581 2341
E-mail: info@meatingpoint-mag.com
www.meatingpoint-mag.com

EDITORIAL BOARD:

Jenny Smart
editor@meatingpoint-mag.com
Ben Anthony
banthony@meatingpoint-mag.com
Steliyana Vasileva
svasileva@meatingpoint-mag.com

MARKETING TEAM:

Aylin Nedzhib
marketing@ meatingpoint-mag.com
Meylin Kara
support@meatingpoint-mag.com
Zvezdelina Kehayova
subscribe@meatingpoint-mag.com

DESIGN:

Taner Kyuchuk
design@meatingpoint-mag.com

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MARELEC FOOD TECHNOLOGIES OPENS NEW DIVISION IN USA

MARELEC Food Technologies, a world-leading producer of intelligent portion cutters and customized weighing and grading solutions, officially opened the doors of its new division in Atlanta, USA on 1 February 2022.

Having a large installed basis of machines in the American market, the company recently decided the time was right to work even closer with its customers. MARELEC Food Technologies has operated very successfully in the USA over the past decade and sees great future potential in this fast-developing market. The establishment of its own USA division will ensure that MARELEC Food Technologies grows even further, while guaranteeing the best possible after-sales service.

Belgium-based MARELEC Food Technologies was founded in 1983 by Mr. Piet Rommelaere who commented: "USA has always been on the forefront to optimize food-processing lines for the production of high-quality food, resulting in maximum yield and maximum returns on investment. Our machinery fits perfectly with this philosophy. The new division, MARELEC USA, Inc., was the logical next step for us to continue our growth in USA."

Mr. James 'Scott' Russell
Vice President North America

The MARELEC USA, Inc. division, at 3372 Peachtree Road, Suite 115, Atlanta GA 30326 , will be managed by James 'Scott' Russell, who has over 43 years of very successful experience and a very extended network in meat and poultry processing industry in Europe, the USA and Latin America. His understanding of the industry enables Scott to analyze and to understand customers' demanding applications in great detail in order to suggest the ideal type of machine. The MARELEC USA, Inc. division also has the backup of fully trained professional engineers to guarantee optimal after-sales service. The technical and commercial team at the Belgian headquarters will work in close cooperation with MARELEC USA, Inc.

www.marelec.com

ACQUISITION OF THE TVI HOLDINGS BY THE MULTIVAC GROUP IS COMPLETED

Following the planned departure of Thomas Völkl as Managing Director and Company Partner of TVI Entwicklung und Produktion GmbH on 31 December 2021, MULTIVAC Sepp Haggenmüller SE & Co. KG is now acquiring the complete holdings of TVI in Bruckmühl.

TVI Entwicklung und Produktion GmbH, which is the market leader in portioning machines, has been part of the MULTIVAC Group since January 2017. The product range comprises efficient and needs-based solutions for tempering, freezing, pressing, portioning and automating, as well as for winding grill sticks and producing kebab skewers.

"The name Thomas Völkl is closely associated with the success story of TVI, and it stands not only for the company's high degree of innovation, but also for a very high level of customer focus," says Guido Spix, joint Group President of MULTIVAC. "We would like to offer our sincerest thanks to Thomas Völkl for his outstanding service. As Managing Director and Company Partner, he gave advice and support to the integration of TVI into the Group, and he made a major contribution to

the further development of the company as a significant part of the MULTIVAC Group. We wish him all the very best for his new plans."

"TVI will continue to remain in future an autonomous company within the MULTIVAC Group," adds Christian Traumann, joint Group President of MULTIVAC. "By acquiring the complete holdings of TVI, we are underlining the strategic importance of TVI within the Group. The company is an essential component for the further alignment of MULTIVAC as a complete supplier of packaging and processing solutions. This is also shown by the investment in TVI's new site in Bruckmühl, which offers

the ideal conditions for further sustainable growth, and which makes it possible to systematically expand TVI's leading position in the meat portioning sector."

www.multivac.com

SAIREM PRESENTS CUSTOMISED HEAT TREATMENT SOLUTIONS FOR SAFE AND HIGH-QUALITY FOOD PRODUCTS

SAIREM, a world-leading specialist in microwave (MW) and radio frequency (RF) industrial solutions, will showcase the company's innovative food industry processes at Anuga FoodTec trade fair held from 26-29 April 2022 in Cologne, Germany.

SAIREM, located in Lyon, France, is an expert in MW and RF solutions for a wide range of industries and applications. Putting its deep knowledge of these applications at the service of the food industry. From pasteurisation to the development of highly specialised equipment and processes, for more than 40 years SAIREM has perfected food safety and process efficiency, leading to food that is healthy, of consistent high quality and has a long shelf life. The company's excellent customer satisfaction ensures that SAIREM's equipment is in demand around the world.

Sylvain Tissier, Food Development Manager explains « Our solutions are fully electric, which makes them ecological and clean. SAIREM equipment ensures that there are no CO2 emissions at the production plant. In addition, they are easy to install and easy to maintain, offering high reliability and with few moving parts."

Enhancing Taste/ Quality and Shelf Life - Pasteurisation

SAIREM equipment for microwave pasteurisation includes tunnels for ready meals and in-line heaters

for pumpable products such as juices and jams. Thanks to the fast and uniform heating process, a substantial reduction in the microbial load is rapidly achieved at the core and the surface of the food. Another advantage with microwave pasteurization for ready meals is the preservation of colour, texture and nutrients without any additives needed. Depending on the food ingredients, it is also possible to combine cooking and pasteurization.

Food Safety at its Most Efficient - Disinfestation and Decontamination

SAIREM offers a highly efficient process for the disinfestation or decontamination of low water content products such as flour, cereals, spices, grains, lentils, beans, mushrooms, cocoa beans, nuts, seeds, cannabis, and milk powder. The process destroys mold, bacteria, larvae, and other insect colonies without the use of controversial chemical products. By exposing the product to a MW or RF frequency field within a temperature-controlled processing cavity, the product is quickly and uniformly brought to the required temperature, thus preventing alteration of its physical, chemical, and organoleptic characteristics.

Minimizing Drip Loss - Tempering and Defrosting

The speed and uniformity of the SAIREM process minimizes product drip losses as well as degradation and improves product safety as bacteria don't have time to grow.

It is ideal for meat, fish, seafood, fruit, and vegetable products, as well as butter. Colour, weight, taste and vitamins are retained. Customers gain flexibility as their ingredients don't need to be unpacked - they can be processed inside the plastic film, the cardboard or plastic box and do not need a special room.

Preserving the Benefits of the Original Material – Drying

The SAIREM drying process is ideal for herbs and plants, snacks, bakery, as well as insects for pet food and future food. SAIREM equipment can combine MW or RF frequency power with hot or cold air, IR, steam, etc. This delivers a homogeneous and quick temperature rise, enhancing product properties and ensuring that there is no degradation of delicate materials. In addition, MW and RF heating treatment greatly accelerates the drying process which can be up to 100 times faster than the traditional process.

Fast Processes with Delicious Results – Cooking

During cooking, products gain their final taste, colour, shape and texture. Products that can be treated include a variety of desserts and a range of specialties such as spring rolls. MW and RF heat food through volumetric action and enables easy and speedy cooking.

Product Safety and High Quality

SAIREM's unique short treatment duration that characterizes all the company's product solutions help to preserve the taste and vitamin content of the food as well as food safe and high product quality with a long shelf life. It guarantees quality and freshness even for heat-sensitive food. The speed of treatment greatly enhances product safety, as well as offering substantial energy savings. A further benefit is the continuous process which not only enhances operating flexibility but also ensures homogeneity of treatment by avoiding temperature differences between the beginning and end.

Future-Oriented Technology and Comprehensive Solutions

By harnessing the power and strength of MW and RF, SAIREM offers state-of-the-art solutions tailored to the needs of a wide range of food industry sectors. Substantial investments in research and development over the years have allowed the company to build an impressive portfolio of cutting-edge solutions which all can be tailored according to the requirements of each customer.

The SAIREM process covers all angles: proof of operation and extensive testing is performed at the SAIREM lab, development engineers support customers during the design phase, equipment design and assembly is provided, and a factory acceptance test as well as installation and start up at customers' facilities is carried out. To round off its comprehensive customer service, SAIREM trains customer technicians and offers maintenance performed by a multilingual customer service team.

Christina Frohm Kramer, Business Development Manager Food, adds: "Thanks to our more than 40 years of experience we are able to offer competitive machines with high performance technology which are specially adapted to the customer's requirements."

www.sairem.com

PEOPLE FIRST, TECHNOLOGY SECOND

The Swiss Bell Food Group is in the middle of its digital transformation. CIO Sven Friedli emphasizes two pillars: a reliable IT partner, like the ERP provider CSB-System, and the right technologies to achieve the business goals.

Sven Friedli

"Our Spanish ham factories are a good example for the benefits of digital solutions. With a turnover of 15 million kilograms per year, you always need up-to-date inventory information, optimum production, transparent warehouse management, and secure traceability. For this, digital technologies are imperative."

This is what it sounds like when Sven Friedli describes the advantages of a digitalized value chain. Since October 2020, Friedli has been Chief Information Officer (CIO) of Bell Food Group based in Switzerland. He graduated in information management and business administration, so he sees the IT decisions in the day-to-day business from a broad entrepreneurial perspective. Digitalization measures should always solve a specific problem in the company, and they should have a positive effect on the quality of data, the costs, or the sales. "With digitalization, we aim to enhance the fulfillment of our business requirements and to work profitably in the entire group," says Friedli.

Looking at the technologies behind this strategy, you will recognize most of the components: ERP, MES, supply chain solutions, data terminals in the internal goods flow and robotics ensure the envisaged integration of business and IT. Software modules like production planning or cutting planning are used to improve the transparency and to achieve efficiency gains at the different locations.

Founded by Samuel Bell in Switzerland in 1869, the former small-scale meat processing company evolved into an international player with activities in 15 European countries, from Spain to Romania. "Our product lines include meat and poultry products as well as charcuterie and seafood. We are also active in the convenience sector, so we produce everything from salads and sandwiches to ready-to-eat pasta dishes, soups, and more," reports Friedli. "We employ around 12,000 people at our 63 facilities, and we have a huge network of suppliers and sales partners in the food industry as well as in the IT sector who help us to meet the demands of our customers."

IT Partner as an Important Pillar in the Digital Transformation

One aspect that is often underrated in the digital transformation is the significance of a functioning partnership between the user and the ERP provider. There are many examples showing that good tools are just one important pillar for the success of transformation processes. Another, at least equally important, pillar are the people. The Bell Food Group successfully cooperates with the ERP industry specialist CSB-System. "From among our digitalization projects, especially the ERP projects at our Spanish facilities have excelled with a high implementation quality. Simply because the collaboration between all parties involved ran like clockwork, everyone spoke the same language, and they all worked towards common goals. This is everything but self-evident."

Decision-makers in the food industry only know too well from their own

experience what Friedli is talking about: value-adding processes and complex IT and OT structures that have grown over years cannot be transformed at the press of a button. Implementing a software system for HR or accounting is one thing. But digitalizing factory processes and optimizing the shop-floor management is something entirely different. These undertakings are change management rather than mere technology projects. Besides a suitable Factory ERP as the central nervous system, the consultants play a crucial role, as they know the software and the business requirements. For this, you need a deeply rooted understanding of the needs and challenges of the food industry. Genuine cooperation between the ERP provider and your own staff, in local conditions, are essential to design optimal processes.

Friedli therefore expects the IT consultants from their IT vendors to be at home in two worlds: in IT, and in food processing. "We are all in the same boat. It is therefore important to have a common understanding of the processes in food production. A mere IT specialist without extensive industry expertise could do little to help move us forward. Peter Ettrich, head of the DevOps Center, speaks highly of CSB and the entire CSB project team. They have brought the digitalization at our ham factories to a new level."

Spanish Ham Factories Reach New Efficiency Levels

In fact, the ham production facilities in the Spanish ham regions Extremadura and Castile-La Mancha have been brought to an entirely new efficiency level over the past few months. Until recently, redundant work steps and incomplete information were substantial cost drivers. One of the most important requirements of the Bell Food Group was the change from a paper-based data capture and execution to a digital information flow, for example in the processing of recipes, purchase orders, and traceability.

On an area of 65,000 square meters, with 120 full-time employees, and a production capacity of 5,000 tons of raw ham (including the popular "Jamon Ibérico"), the factory of Bell Spain located south-west of Madrid is one of the most important production facilities for the company's raw ham sales in Europe.

"It is a delicious and expensive product that is produced on a large scale," Friedli says. "We are talking about up to one million hams that are hanging in our warehouses in Fuensalida for drying and aging." With different breeds of pigs that are processed in different types of ham, with different curing and aging times, depending on the quality and the designated certification, the implementation of traditional methods dating back over a thousand years on a large scale and in an industrial environment can be rather challenging.

"In the past, the facility did not really have an exact, comprehensive overview of the production process," explains Friedli. "For stocktaking, for example, it took weeks to count all hams. Now, we have introduced an integrated supply chain solution that tracks the entire process, from the purchasing of the pigs up to the sale of the ham. All information and data is available in a single system across the entire process so that stocktaking is accomplished with a mouse-click - just like checking the revenues."

"The quick availability of information in the ERP enables us to act much quicker," explains Peter Ettrich. He is responsible for the CSB applications at 19 Bell factories all over Europe, and he was the overall project manager for the

project in Spain. Also in labeling, the company saw rapid progress thanks to the reduction of errors. The installation of a ham grading system has advanced the integration of software and hardware.

In addition to that, ERP has generated added value by optimizing order picking. While pickers in the food sector often spend more time on running, searching, and printing than on the actual picking process, the Bell Food Group again counts on digital information instead of paper forms. The use of hand-held devices not only accelerates the processes, but also reduces the errors and, consequently, necessary rework.

The project was a huge success and has helped Bell Spain to overcome problems in the production processes by means of technology – an achievement that was only possible, as Friedli emphasizes, because the IT team and the consultants at Bell Spain devoted a lot of time to understand which problems the company was facing, and how these issues could be solved by means of technology. "We have intensively investigated the steps in production, the type of reports required by the company, and the best ways for generating useful data from the various steps of the production cycle."

Jointly Implement Realistic Use Cases

Digitalization is nothing new for the Bell Food Group and has been in progress at many of the companies in the group for twenty plus years. Office work processes, batch processing, picking, inventory management and machines have been at least partly digitalized. In Oensingen, Switzerland, a high-bay storage facility controlled by RFID was put into operation in 2005, which was really pioneering state of the art in the meat industry back then.

Now, the goal is to link the single digital islands in an integrated network. In particular, the acquisitions of the last few years have to be incorporated in the information technology to obtain global data in order to get the big picture. Austrian poultry specialist Hubers has become part of the corporate structure just like Eisberg AG in Switzerland and Süddeutsche Truthahn AG from Germany. Bringing new facilities on board always entails the question how to accommodate their IT: how can the integration succeed despite heterogeneous maturity levels of the different sites? There is still a great deal to be done. "We are aiming for operational excellence," says Friedli referring to the upcoming projects they want to kick off together with the CSB team at various locations in Europe. One example for the next level of productivity is the Manufacturing Execution System for cutting at a facility in Switzerland - also coming from CSB.

The group's goal is to further enhance data-driven decision making in order to ensure its success. The direct costing and marginal costing system currently in its pilot phase is intended to bridge the gap between shop floor and top floor.

Ultimately, this is about continuous improvement of processes and initiating new digitalization activities with the ERP. The goal is a digital end-to-end chain from forecasting to scheduling and shipment, incorporating quality assurance as well as cutting, packing, and logistics. Leaving the urge for optimization aside, Peter Ettrich and Sven Friedli fully agree that "it is important to know the needs of the business units and to consistently pursue them taking an iterative approach. You only achieve the right goals if the digitalization presents a clear benefit for your business!"

www.bellfoodgroup.com

SUSTAINABILITY IN THE MEAT INDUSTRY: A TOP THEME AT IFFA 2022

Sustainability is a catalyst for change and innovation in the meat industry. Political requirements and nutrition-conscious consumers are driving producers and manufacturers to act. Additional pressure is being generated by the global debate on climate protection and resource conservation. The meat processing industry is responding to this with technological innovations, but also with fundamental corporate commitments to sustainable solutions

The discussion about sustainable production in the meat processing industry essentially concerns issues of environmental protection, health and animal welfare. In connection with climate protection, the high CO2 emissions, the equally high water consumption and the packaging waste produced, which consists mainly of plastic packaging, are the focus of criticism.

The influence of meat consumption on the greenhouse effect is undisputed. In Germany alone, 42.7 million tons of CO2 per year are attributable to meat consumption, in addition to water consumption of 60 trillion liters. The average water footprint per calorie is particularly high for beef, about twenty times higher than for cereals. It is estimated that switching to a diet, low in meat, could result in water savings of 11 to 35 percent[1].

It is not only since the "Fridays for Future" movement that more and more consumers are questioning their dietary behavior. In addition to environmental aspects, they are particularly concerned about animal welfare. According to a Eurobarometer survey conducted in April 2021, around one-third of Europeans buy and eat less meat, and 16 percent take the carbon footprint of their food into account when shopping and adjust their purchases accordingly. Meat substitutes based on plant proteins as well as vegan and vegetarian alternatives are experiencing a real boom and reflect the trend toward sustainable and animal-friendly foods[2]. IFFA 2022 picks up this trend and will open up to alternative protein sources. In addition to its focus on meat, the trade show will present processing technologies and ingredients for plant based proteins for the first time.

Political Directives for More Climate Protection

The discussion about more sustainable food production is also being promoted by political requirements. In its "Green Deal," which calls for a reduction of greenhouse gas emissions by at least 55 percent by 2030 compared to 1990 levels, the European Union also places an obligation on food producers. In its strategy document "From farm to table" (May 2020), the Commission calls for, among other things, greater energy efficiency, less packaging and the use of innovative and sustainable types of packaging made of reusable materials[3].

[1] https://www.boell.de/sites/default/files/2021-01/Fleischatlas2021_0.pdf
[2] https://www.europarl.europa.eu/news/de/headlines/society/20200519STO79425/eu-strategie-fur-ein-nachhaltiges-lebensmittelsystem
[3] https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3156
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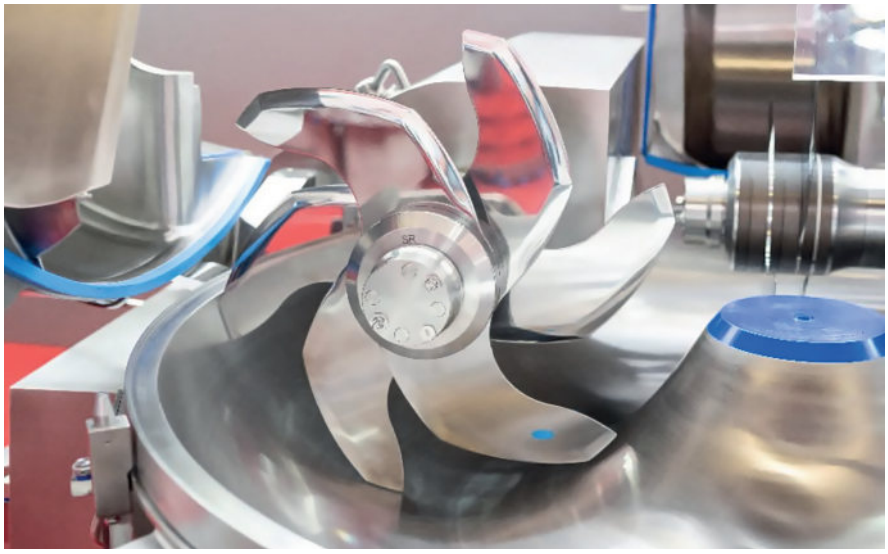


In light of these societal changes and political framework conditions, numerous meat processing companies have integrated guiding principles for sustainable production into their corporate mission statements. Although around 90 percent of meat producers' emissions result from the supply chain or from the animals themselves, meat processors also see it as their duty to optimize their processes with regard to energy and resource management. Of course, they also have their own interest in this, because saving energy and water not only boosts their image, it also lowers their overall operating costs[4].

New Trends in Machinery: Resource and Energy Management

The meat processing industry is one of the high energy-intensive sectors. Heating and cooling food requires large amounts of energy. Cold is needed to chill meat to ensure food safety, among other things. Heat is needed for cooking, steaming, simmering, sterilization and cleaning. In addition, there is water consumption for cleaning and disinfecting manufacturing facilities.

Of course, water must also be heated accordingly. As in many other industries, this is still largely done using fossil fuels. In addition to efforts to increase energy efficiency, switching to renewable energies – and thus reducing the carbon footprint – is therefore another lever for greater sustainability in the meat processing industry.

Energy-efficient refrigeration and heat pump solutions can improve energy efficiency in heating and cooling by up to 70 percent. Waste heat, which would otherwise be wasted, is reused and diverted to other processes such as water and brine heating, drying, cooking, blanching, pickling, pasteurizing, sterilizing, dehydrating and cleaning. To ensure a sustainable cold chain, compressor-based process cooling systems, among others, are used to provide thermally optimal production environments – not only for the food itself, but also for storage and distribution areas[5].

Savings can also be achieved through modern drive technology, such as servo motors. Energy-efficient, frequency-controlled drives achieve energy savings of up to 25 percent, and switch-on or switch-over current peaks are reduced. In addition, the motors are water-cooled and thus offer the possibility of direct use or recovery of waste heat[6].

Another step towards sustainability are machines with durable components and modern hygienic design, such as welded and rounded edges and recessed flush covers. They offer less contact surface for dirt and germs, and cleaning requires less water and energy. In addition, cleaning times are shortened by automatic cleaning-in-place (CIP) equipment[7].

With regard to food safety, the motto for water consumption is: "As much as necessary, as little as possible". In order to reduce water consumption to a minimum, various options are to be considered, such as recycling wastewater in company-owned or municipal wastewater treatment plants. Innovative monitoring and measuring systems that analyze water consumption and identify parameters for further reduction are also of great help[8].

[4] https://www.boell.de/sites/default/files/2021-01/Fleischatlas2021_0.pdf
[5] https://www.gea.com/de/articles/sens/index.jsp
[6] https://www.handtmann.de/fuell-und-portioniersysteme/ueber-uns/nachhaltigkeit
[7] https://www.seydelmann.com/uploads/press_reference/download/13/Seydelmann_-_Fortschritt_durch_Tradition_FLW-07-2021.pdf
[8] https://www.fokus-fleisch.de/fleischwirtschaft-energie-wasser

When it comes to renewable energies, solar thermal energy, heat pumps, biogas or biomass are suitable, since most processes require temperatures below 100 to 120 degrees. With cogeneration, electricity and heat can be efficiently provided from biogas or biomass from residual materials[9].

The EU is promoting efforts to improve energy management, for example through projects such as ICCEE ("improving cold chain energy efficiency"). The aim of the project is to improve the energy efficiency of the entire cold chain of the food and beverage sector for small and medium-sized companies. For various sectors such as meat or beverages, the Food Testing Institute offers workshops on this[10].

Packaging Trends: More Than Just a Cover

When it comes to packaging, many consumers no longer reach straight for the shelves, but instead pay attention to sustainable, environmentally friendly solutions. Accordingly, plastic-free and plastic-reduced packaging is a sustainable trend in packaging technology. However, sustainability often counteracts food protection. This is because paper composites or packaging with recycled content allow more oxygen to penetrate, which can impair product quality. This can be remedied by oxygen absorbers, for example based on polymers, which bind the residual oxygen in the packaging and the penetrating oxygen and whose functional layer is integrated in the multilayer structure[11]. In addition to the issue of recyclability, research is focusing on renewable raw materials. Algae -based plastics and transparent films, made from hemp or cardboard made from grass, bio-based packing provides an alternative to plastic made from fossil raw materials.[12].

Another trend: smart packaging that actively takes care of the meat product, protects it and thus has a sustainable effect. It keeps temperatures stable, absorbs unwanted ripening gases and prevents germ infestation. Researchers at the Fraunhofer Institute for Process Engineering and Packaging (IVV) are working on appropriate solutions. This way, not only low-emission technologies and processes, but also material-saving, recyclable and smart packaging will contribute to climate-neutral production[13].

From May 14 to 19, 2022, IFFA, the Leading International Trade Fair – Technology for Meat and Alternative Proteins, will open its doors in Frankfurt am Main. Internationally renown companies will present their latest technologies and provide information on the most important trends and developments in the meat and protein processing industry.

One of the top topics at IFFA is sustainability: the EU wants to become climate-neutral by 2050, which also poses major challenges for the meat and protein processing industry as well as the packaging industry. They must improve their energy efficiency and produce in a way that contributes to the conservation of the world's natural resources.

www.messefrankfurt.com

[9] https://www.oesterreich-isst-informiert.at/verantwortung/lebensmittelproduktion-wird-immer-energieeffizienter/
[10] https://iccee.eu/
[11] https://www.fleischwirtschaft.de/podcast/?currPage=1
[12] https://www.fleischwirtschaft.de/produktion-management/nachrichten/Podcast-Fleisch-und-Wurst-zukunftsfaehig-verpacken-41953
[13] https://www.ivv.fraunhofer.de/content/dam/ivv/de/documents/infoblaetter/Funktionsmaterialien/Aktive_und_intelligente_Verpackungen.pdf

NEW MODELS UNDERLINE ISHIDA'S EXTENSIVE PROTEIN PACKING CAPABILITIES

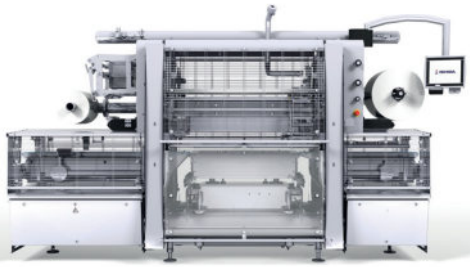
Ishida's ability to provide bespoke solutions for meat and poultry packing – from individual machines to the design and installation of complete lines – will be showcased on the company's stand (C11 in Hall 11.0) at this year's IFFA.

Ishida harnesses well over 30 years' expertise in protein packing solutions in the ongoing design and development of equipment that enables manufacturers and processors to automate production and reduce reliance on manual labour. This helps to drive up efficiencies, increase yield and throughput, and reduce waste.

The stand will feature two recently launched Ishida models – its next generation X-ray inspection system, the IX-G2-F, which offers significantly enhanced sensitivities for the detection of low-density and difficult to spot foreign bodies such as bone; and the QX-900-Flex compact, high performance tray sealer that maximises output, capacity and flexibility for medium to high volume production lines within a compact footprint.

Also on display will be the company's proven RobotGrader, which uses pick and place technologies to grade products of varying piece weight and place them into a fixed weight pack into crates for further processing or bulk packing.

Ishida G2 Xray



Ishida QX-900

Completing the line-up will be two models from Ishida's extensive multihead weigher ranges – the CCW-R2-106 Fresh Food Weigher and the CCW-RV-214 Screw Feeder Weigher, both of which offer a number of features which meet the particular challenges of weighing and packing fresh and sticky protein.

The Ishida IX-G2-F incorporates a new line sensor that provides a high-quality X-ray image through an enhanced signal to noise ratio, which has an increased capability to detect bone fragments by a factor of four compared with previous X-ray models. This further enhances the ability of the machine to identify contaminants, in particular when handling thicker and denser products such as chicken fillets, chicken breasts and a wide range of poultry products where they can often be overlapped or presented with uneven surfaces. The QX-900 offers high-speed, high-quality sealing of trays at up to 15 cycles per minute. It is capable of both seal only and MAP (Modified Atmosphere Packaging) trays and can handle a wide variety of materials and

Ishida Robotgrader

Ishida Fresh Food Weigher

formats, including trays made from recycled or renewable cardboard and mono plastics, and the latest skinpack and skin on board variants. This supports retail and consumer demands for solutions that provide extended shelf-life to reduce food waste, while also ensuring minimal impact from packaging materials.

The unique design of the RobotGrader improves yields and efficiencies in the packing of fresh protein, reducing giveaway to less than 1% per pack. It correctly places and orientates product at speeds of up to 320 pieces per minute, depending on the number of robot heads. By comparison, a manual operation can be highly labour intensive with a single operator only able to pack 30 pieces/min, while overfill can be anywhere from 5% to up to 20%.

The 6-head Ishida CCW-R2-106 Fresh Food Weigher is designed for all types of fresh sticky products

Ishida Screw Feeder Weigher

and smaller production batches. Product is delivered by a conveyor belt to the top of the weigher, where one or two operators then evenly distribute it via belt feeders to the weigh hoppers. This helps to maximise the speed and efficiency of the weighing process, while features such as scraper hopper doors, ribbed surfaces and scraper gates on the collection belt conveyors minimise product sticking.

The CCW-RV-214-SF, Ishida's revolutionary screw feeder weigher, has enabled the fully automated handling of sticky fresh products. The technology, which uses rotating corkscrews to provide a powerful, controlled and fully automatic product feed to the hoppers, can easily double packing speeds for the stickiest applications and significantly reduce giveaway.

www.ishidaeurope.com

THE K+G WETTER BOWL CUTTER TWIN: COMPACT CREATIVITY IN THE SMALLEST SPACE

Traditional Combination Bowl Cutter and Grinder in High Demand

Regional products from artisan butchers, local specialities from farm shops or meat products from local hunters are increasing in popularity: When shopping for food, many customers are paying greater attention to origin and high-quality processing, while turning away from mass-produced foodstuffs.

However, space is often at a premium in independent producers' kitchens and traditional local butcher's shops. But this is also true of canteens and cafeterias. This is where traditional company K+G Wetter's Bowl Cutter Twin comes into its own: The combination bowl cutter and grinding machine is currently in very high demand. The traditional butcher trade machine has established itself in the food processing sector over many years and is now only offered by K+G Wetter.

Highest Flexibility in the Smallest Space

This compact production talent occupies only a small footprint, exhibits the same high-quality workmanship as its "big brothers" and, thanks to its flexible configuration options, facilitates the production of a wide variety of specialities.

Mettwurst or salami, meat loaf or Vienna sausage – the SM 45 Bowl Cutter section of the K+G Wetter Bowl Cutter Twin produces sausage meat of the best quality, and this is evident in the taste: The raw sausage cutter head employs three knife blades for particularly fine and gentle processing, while the fine sausage meat cutter head produces the finest cooked sausage meat using six smooth blades. The cutter head with six standard knife blades is suitable for universal use.

The twin section, the EW D114 Electric Grinder, produces minced meat, ground pork or the basis for the popular burger patties – quickly, easily and with high-quality results. The removable hand guard ensures occupational safety when filling, even with larger pieces of meat. The screw geometry guarantees continuous material transport and optimum pressure for a grinding process that does not crush the product. Different cutting sets are available and remnants of bones or tendons are reliably removed when the sorting device is used.

Machines for Artisanal Excellence

Food professionals know that high-quality products are created by combining artisanal excellence with top-grade raw materials and ingredients. But the quality of the machines is also a crucial factor in achieving top-quality products. K+G Wetter has its roots in the butcher trade and knows what is important. All of the machines are

subject to continuous development with an eye firmly on day-to-day activities at processing plants. Because it pays off when the production steps are simpler and faster – for both company and customer.

The issue of hygiene is always at centre focus. This applies to both large industrial machines as well as compact trade machines like the bowl cutter twin. The robust and stable machine body is enclosed on all sides and its sloping surfaces made of hand-polished stainless steel guarantee that liquids run off without leaving residues during cleaning. High-quality seals protect the machine's internals from material and liquid ingress. Parts such as the knife heads in the cutter or the cutting sets in the electric grinder can easily be removed for cleaning and securely reattached without using tools. This ensures food safety and hygiene and quickly allows the machine to be put to work again to prepare the next speciality. Touch-screen control facilitates operation and makes work easier.

www.kgwetter.de

HANDTMANN CUSTOMIZED SOLUTIONS

When standardised solutions reach their limits, it is time to find customised approaches. Handtmann system solutions are technically sophisticated, have been tried and tested for years and are flexible in their application. However, some customer requirements ask for customised solutions. In keeping with the Handtmann motto "My idea. My solution" Handtmann will be focusing even more on specific customer requirements with the well-known Handtmann quality. From now on the company will be able to address individual needs and special requirements with even more flexibility with the new HANDTMANN CUSTOMIZED SOLUTIONS (HCS).

A team of internationally experienced technical experts works exclusively for Handtmann Customized Solutions at the Biberach and the Netherlands Amersfoort sites, developing any customized solution needed for individual production process – from product preparation all the way through to packaging. The customized solutions, of course, take as their basis the proven Handtmann series production machines, which can be extended and modified in a variety of ways to meet specific customer demands. Both minor modifications to series production machines and the design of individual production lines can be realised. The international Handtmann sales network ensures the proven competent service also for Handtmann Customized Solutions. "Production processes are as individual as today's eating habits. With the new Handtmann Customized Solutions (HCS), we will be able to provide customized solutions in proven Handtmann quality for individual customer requirements," says Harald Suchanka (CEO of Handtmann Division Filling & Portioning).

www.handtmann.de

AUTOMATION WITH THE GREATEST VARIETY OF PRODUCTS

Attract Flexitarians, Vegetarians, Vegans and New Meat Lovers

MIVEG presents a new innovative system for maximum product variety and automation in skewer production. It can be used for all food skewers, meat, vegetables, new meat and other new products. The ASP system is different from others as it offers automation, maximum variety, more productivity and even more profitability.

More and more customers value variety, diversity and quality. MIVEG's ASP is the perfect skewer system for this. It can be used to produce new, value-added products for meat lovers, flexitarians, vegans, and new meat fans

One for All

The MIVEG ASP system creates a wealth of combination possibilities. As a producer, one can offer up-to-date products that customers have never seen before in such s wide variety.

MIVEG skewer systems lead the way because they create optimized output with minimal manpower. Product changeover takes place in the shortest possible time. At the push of a button, one can produce quality, in easily scalable quantities, even at peak times.

www.miveg.de

RVF 760 - THE INNOVATIVE ALL-ROUND SOLUTION

The vacuum filler RVF 760 is designed for industrial use. The housing with its smooth and hygienic design is self-supporting and entirely made out of stainless steel and ensures efficient cleaning. The conveyor system has been designed in such a way that during cleaning water can flow out of the feed system.

A simple pressure levelling piston ensures highest portioning accuracy. All models of the RVF 700 series can be equipped with a MC-3 in-line grinder.

RVF 760 can be delivered with a lifting/tipping device for 200-litre standard lifting trucks. Two different hopper sizes can be selected according to the needs of the operation. Folding hoppers in volumes of 250 and 350 litres are available.

The feeder screw in the hopper ensures optimum in-feed for all non-viscous or viscous products into the rotary vane conveyor system.

The standard touchscreen control makes the machine easy to operate and can be used to drive various clipping machines and attachments. There is also the option of attaching the REX hanging system.

It goes without saying that the RVF 760 can always be fitted with a rotating or fixed casing holding device to make twisting of artificial or natural casings easy. The RVF 760 can easily be equipped with the REX in-line grinder technology, thus providing users with a wide range of possible applications.

www.rex-technologie.com

PERFECTLY LINED UP FOR TOMORROW'S CHALLENGES

At IFFA, Weber will be showing how comprehensive solutions and line concepts create real added value for customers.

Perfect cold cut slices. Efficiently produced and attractively packaged. Weber offers everything that food processing companies need from a single source. The exhibition will therefore focus on perfectly matched line concepts from the preparation of raw products to finished, quality-checked primary packaging, in keeping with the motto "Line Up for Tomorrow".

In Hall 11.1 Stand B91, trade visitors can expect complete line solutions for slicing applications from the Weber and TEXTOR brands – with a wide range of innovations and product launches. Using the example of two line configurations with maximum automation, integration, and efficiency, Weber will demonstrate how the approach of holistic product preparation, processing, and packaging can lead to greater cost-effectiveness. In addition, the solution provider will show how the intelligent networking of all line components and the use of all line data can optimize future production in a variety of ways. The solutions designed for different requirements and applications all have one thing in common: They offer added value in every processing step and thus generate more output from input for food producers. Digital products and services are just as much a part of the holistic approach as innovative technology. Food processing companies benefit from greater transparency, effectiveness, and service thanks to new digitization concepts that visualize lines and processes digitally at a glance.

The product range of derinders, skinners, and defatting machines also includes many innovations for tradespeople, small and medium-sized businesses, and industrial applications. For this reason, the Weber Skinner Team will have their own booth in Hall 12 Stand B11. Exhibition highlights include innovations in the areas of safety and user-friendliness, as well as a new industrial derinder with an even more user-friendly and hygienic design. In addition, automation in the area of loin defatting has been further developed and expanded.

www.weberweb.com

LORYMA DEVELOPS AUTHENTIC PLANT-BASED CHICKEN CONCEPT

The latest innovation from ingredients specialist Loryma is a combination of wheat-based components for a vegan version of chicken thighs, which is more than a match for this classic dish in both appearance and texture. The replication of the chicken skin is achieved with a specially developed coating system, while Lory® Tex wheat texturates with a highly functional Lory® Bind binding system imitate the fibrous muscle meat. By frying, deep-frying or grilling, the outer shell becomes crispy, while the inside remains juicy and tender. Manufacturers who adopt the concept can adapt and flavour it individually.

The creation of an authentic, vegetable "chicken skin" – not yet on the market in this form – is achieved by Loryma with the help of a specially developed wheat-based coating system. It is applied as a flowable oil-in-water emulsion to the shaped imitation meat by means of conventional coating technology, as used in wet panades. The contained functional mixture of wheat proteins, starches and gelling agent (Lory® Stab) creates an elastic, irreversible, thin surface coating that convincingly reproduces chicken skin and becomes crispy during the final preparation.

The coating also protects the meat alternative inside from drying out. This consists of Lory® Tex Chunks, particularly long-fibre textured wheat proteins, which perfectly imitate the texture of grown muscle meat thanks to their unique structure. The tasteless dry texturate can be easily rehydrated with water, flavoured and separated to the desired fibre structure. In combination with Lory® Bind, this creates a mass that can be formed for example into the form of a chicken leg and coated.

Norbert Klein, Head of Product Development at Loryma, says: "Recreating crispy chicken skin with purely vegetable ingredients was a real challenge, yet we are more than satisfied with the final concept. It's just right for everyone who wants to give up meat but not this classic treat."

www.loryma.de/en

CRISPY GRILLING WITH RUBS FROM RAPS

RAPS is expanding its portfolio of barbecue seasonings, with so-called "rubs" increasingly en vogue. The Kulmbach-based spice expert is launching eight new dry mixes that can be easily sprinkled, bringing a range of international flavours to the barbecue. During product development, an appealing appearance of the coarse spices on grilled food was just as much a focus as an intense, authentic taste. The rubs are made of natural ingredients and contain no declarable additives.

For its rubs, RAPS has researched current trends and drawn inspiration from cuisines around the world. In Rose Meets Malabar Pepper Rub, for example, the spice expert picks up on the botanical food trend. Green Malabar pepper, sourced from a small growing area in India, is gently combined with rose petals and ginger for an aromatic and delightful flavour experience. Hemp nuts, black cumin and sesame seeds in Peruvian Rub represent traditional Peruvian cuisine, while bush herbs and lemon notes in Rustic Bush Rub bring authentic South African barbecue food to life. Fennel,

cinnamon and chilli, red Kampot pepper from Cambodia and smoked spices are other exclusive ingredients incorporated into RAPS' new blends. In addition, each rub contains a touch of sugar, which caramelizes during the cooking process and creates an appealing crust on meat, vegetables, potatoes and even cheese. RAPS uses brown demerara sugar, which is characterized by large crystals and a subtle hint of caramel.

Exceptional taste and appearance
Applying the rubs is as simple as can be. Whether it's a steak or larger piece of meat, the chosen spice is evenly and generously distributed, and gently massaged in. This allows the flavours to be optimally absorbed. The seasoned, grilled food is eye-catching on the meat counter, and the added advantage of rubs is that they help prevent foods burning on the grill.

Norbert Pfaller, Head of Product Management, says: "Our aim is to offer an intense taste experience with exclusively natural ingredients. We are therefore particularly proud of our new rubs. They combine appealing visuals with uniquely authentic flavours, and with a subtlety that showcases all of our expertise."

www.raps.com

KATECH INVESTS IN PILOT PLANT AND STRENGTHENS ITS FOCUS ON PLANT-BASED PRODUCT DEVELOPMENT

KaTech Ingredient Solutions is celebrating the opening of its meat and fish alternative centre of excellence. The company has invested in new high-tech machinery that enables its technical teams to replicate industrial processes and develop textural ingredient solutions for meat and fish alternative products. Further strengthening KaTech's portfolio of meat and fish alternatives, the investment follows the growing demand of food manufacturers for new product developments in this area.

After several years of successful development of plant-based/vegan products for the food industry and a market that is expected to continue to grow in the future, KaTech has decided to invest in its already existing and successfully operating pilot plant in Lübeck, Germany. The newly acquired machinery is particularly relevant for the production of meat and fish alternatives. The investment supports the company's strategy to continue to focus on plant-based products in the future.

"So far, the equipment in our technical centre has been extensively used to provide our customers with the right product developments. However, with an ever-increasing demand for plant-based product

development and a market that is expected to grow further in the future, it was time to invest. We are pleased that this investment will enable us to support our customers even better in the production of plant-based textural ingredient solutions for their individual alternative meat and fish products at a high quality that they can bring quickly and effectively to market", says Alexander Maeße, Head of Technical at KaTech.

www.katech-solutions.com

COMPACT, HIGH-SPEED AND PRECISE: METTLER-TOLEDO'S NEW X-RAY INSPECTION SYSTEM FOR SMALL, SINGLE-PACK PRODUCTS

The X34C delivers a unique x-ray solution to the market: cost-effective inspection of individual packs and bars, immediately after flow-wrapping or pack sealing

Mettler-Toledo Product Inspection launches a new x-ray inspection system, the X34C, that is designed specifically for the detection of contaminants in small, individual packaged products at high-speed.

The X34C x-ray inspection system is based on three key design principles of compactness, high-speed and precision:

Compact Footprint: the system has a footprint of just 700mm in length, which includes an integrated reject. This means that the X34C can be installed into production lines where space is at a premium.

High-Speed Capabilities: the X34C can operate at 120 metres per minute, making it possible for the first time to keep product inspection aligned with many high-speed flow-wrapping machines and pack sealers used in the confectionery sector for packing individual products. This combination of speed and compact footprint is currently unique in the market.

Precise Performance: the optimised focal distance of the 0.4mm diode detector and 100W Optimum Power Generator maximises the probability of detecting small contaminants and helps to reduce the False Reject Rate. Because the power and contrast levels of these components are automatically optimised for each application, the system does not always need to run at its full 100W output, delivering power savings.

"For manufacturers, who are typically hard-pushed to fit new equipment into existing lines, the small footprint of the X34C means they can benefit from outstanding levels of contaminant detection and productivity without too much disruption to their operation. Plus companies can feel confident that their brands are protected due to the X34C simultaneously completing comprehensive product and packaging quality checks."
The X34C shares many of the same features and advantages as other models in the Mettler-Toledo Safeline range of x-ray systems. These include the easy-to-use operating software, including ContamPlus™, that both the standard X34 and X36 systems use, with automated product set-up reducing the need for operator training, while increasing production up-time and product safety. These aspects serve to reduce the Total Cost of Ownership.

In addition, the X34C can be connected to Mettler-Toledo Product Inspection's ProdX™ data management software, which supports supply chain digitalisation, compliance and traceability.

On the hardware side, the X34C can be configured to meet customer requirements, including with an airblast reject system to remove contaminated products at high speed. Maintenance functions are simplified through easy access to all parts of the system from the front. The x-ray system has been designed to operate in a

range of working environments. It is rated at IP55 as standard for ingress protection, with IP65 also available for manufacturing environments which require a higher level of dust protection. Customers with cooler ambient factory temperatures (less than 30 degrees Celsius) can choose Active Cooling through a fan system, which can improve the environmental performance of the system.

In summary, the Mettler-Toledo Safeline X34C is a fast and effective vertical x-ray inspection system, optimised for contaminant detection of individual products within a defined application set: flow-wrapped confectionery, snack and cereal bars and small bakery packets. Manufacturers producing these products will benefit from its speed, enhanced detection sensitivity and compact footprint, whether they are multinational organisations with multiple factories, or SME-sized operators with a single production line. In addition, they will enjoy the ease of use and proven robustness and reliability that Mettler-Toledo Safeline X-ray systems are already renowned for.

www.mt.com

PLANT-BASED LIFESTYLE FEEDS PIPELINE INSPECTION INNOVATIONS

With the number of North Americans now identifying as vegans shooting up by more than 3000 percent in 15 years[1], demand for plant-based products has soared. With sales in the category growing 2.5 times faster than total food sales from 2018 and 2020[2], plant-eating is now considered mainstream. As a result, food metal detection specialist Fortress Technology is reporting high demand for its ultra-hygienic Pipeline Metal Detector.

According to a 2021 survey by Bloomberg Intelligence, the global plant-based alternative market is forecast to grow to $162 billion in the next decade. Up from $29.4 billion in 2020[3]. Suggesting that plant-based will be significant and sizeable market in the very near future.

Catering to changing demographics, wellbeing trends, and new product developments (NPD) in plant-based alternatives, Fortress R&D in recent months has focused specifically on upgrading its Pipeline Metal Detector to maintain optimized metal detection sensitivity and the highest hygiene standards. Providing valuable reassurance to North American consumers who continue to ditch animal-derived foods.

From explosive sales in plant milks, which now accounts for 15 percent of the entire 'milk' category, to the historic launch of the Impossible Whopper by Burger King in 2019 (making up 10 percent of all US Whopper sales today), it's no coincidence that over a similar time period Fortress has observed a huge uplift in enquiries for its flexible Pipeline Metal Detector.

The global plant-based alternative market is set to grow to $162 billion in the next decade

Natural Choice

With increased market share comes increased scrutiny. One of the key challenges facing the ever growing and evolving plant-based food sector is how best to maintain productivity while providing consumers with safe, uncontaminated products.

Processing compliance in this growth sector demands the highest levels of sanitation. To avoid tarnishing plant-based brand reputations, Fortress Technology's latest metal detection pipeline machines are engineered to assist processors inspecting high-viscosity foods and liquids, to optimize hygiene standards, tackle cross contamination and maintain a robust HACCP system.

Available in standard 2, 3, 4 and 5 inch pipe diameters, Fortress can also deliver any customized size too. The Fortress Pipeline Metal Detector is especially suitable for inspecting products like vegan sausages, veggie burgers, broths, gravies, syrups, condiments, juices, fruit and vegetable concentrates, milk and cream alternatives, oils and even plant-based viscous pet food.

Overcoming Sanitation Challenges

Food inspection pipelines in the past have been notoriously difficult to access and deep clean. To prevent bacteria accumulating in protein-alternative processing environments, the Fortress Pipeline Metal Detector systems are

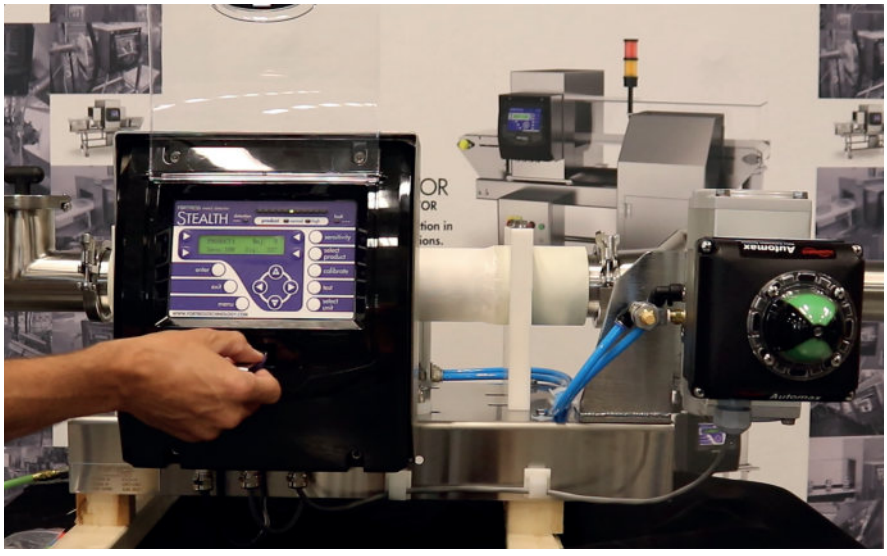
1 *Global Market Research Company, IPSOS*
2 *Good Food Institute*
3 *https://share.getcloudapp.com/qGuJgpxR?fbclid=IwAR0OaBJdkpLr5u3bauaaEllfMViYc7z5RmM-H1I-_QzXQPekGjyfClkhAjo*

IP69K rated. This means they can withstand harsh processing environments and high-pressurized washdowns after every product changeover.

By upgrading its sleek, modular design, Fortress has reduced the external surface area of its Pipeline Metal Detector by over 60%. Also, by routing the connectors through an encased unit, the system is easier for sanitation employees to roll out, dismantle and clean to prevent allergen and bacteria accumulations.

As with meats, some plant-based alternatives can generate signals that may mistakenly be interpreted by a metal detector as a contaminant. Additionally, air pockets in the product flow can trigger false rejects, leading to increased waste. To overcome this product effect, the Fortress Pipeline Metal Detector addresses these challenges by applying powerful digital signal processing technology to clearly distinguish the signal generated by a metal contaminant from the product being inspected.

To maintain metal detection sensitivity, the system also integrates Auto-balance. This feature is designed to constantly rebalance the coil heads within the unit, adapting to the signals as the product passes through the pipeline.



The ultra-hygienic Fortress Pipeline Metal Detector features a number of labor saving, traceability and audit features, including automatic testing

Halo Automatic Testing is a recommended add-on, providing an accurate and cost effective solution to ensure quality control standards are consistently met. Unique to Fortress, the Halo software program mimics the signal disturbance in the least sensitive position within the pipeline aperture. Testing inline can also be extremely messy. With Halo Automatic Testing, operatives don't have to physically pass a metal contaminant through the metal detector or flush out a sample. Making it a much cleaner and more productive testing solution. In addition to reducing operational costs, automated testing also reduces waste and product rework.

Featuring sophisticated data capture and Contact Reporter software, the Fortress Pipeline Metal Detector system satisfies Quality Assurance mandates, ensuring traceability compliance with stringent North American processing requirements, including GFSI/SQF, BRC and HACCP.
www.fortresstechnology.com

NEW ISHIDA X-RAY OFFERS ENHANCED SENSITIVITY FOR DIFFICULT TO DETECT ITEMS

Ishida Europe is launching its next generation IX-G2 dual energy X-ray inspection system which offers significantly enhanced sensitivities for the detection of low-density and difficult to spot foreign bodies, including bone.

The Ishida IX-G2-F incorporates a new line sensor that provides a high-quality X-ray image through an enhanced signal to noise ratio which has increased the ability to detect bone fragments by a factor of four compared with previous X-ray models. This further increases the ability of the machine to identify contaminants, in particular when handling thicker and denser products such as chicken fillets, chicken breasts and a wide range of poultry products where they can often be overlapped or presented with uneven surfaces.

The enhanced sensitivity of the machine also greatly reduces the risk of false detections, which helps to maximise throughput and avoids the costs associated with unnecessary waste and the repacking of products.

The high performance of the IX-G2-F is supported by Ishida's unique self-learning Genetic Algorithm (GA) technology which combines with the new line sensor to deliver maximum detection sensitivity and reliability.

The GA technology focuses the X-ray machine to identify difficult to detect contaminants with a high degree of accuracy, even at high throughput rates, using image data analysis over a number of trial runs. As it is common in food production for similar contamination problems to recur, data logging can help to build up a more precise calibration protocol with each trial. This enables permanent or recurring defects to be easily identified during the inspection process.

Ishida's dual energy technology incorporates two line sensors, one which takes images at high energy and one at low energy. These are then compared, which provides a better overall image of the product with a clearer contrast between the product and any low-density foreign bodies, such as bone fragments.

"The next generation IX-G2-F X-ray inspection system offers unrivalled performance and with its improved line sensor and software capabilities it has already delivered significant benefits on production lines," comments Sibtain Naqvi, Ishida Europe's X-ray Product Manager.

"The enhanced sensitivity provides poultry processors with even greater reassurance that their high product quality standards are being maintained, and by minimising the number of false rejects, production can be maximised. We believe our IX-G2-F models represent another major advance in our X-ray inspection portfolio,"

www.ishidaeurope.com

TO LIVE LIFE, THE WORLD NEEDS TO PRESERVE

By Henk Hoogenkamp

It looks like the world is accelerating the transition towards animal-free protein. That shift is good for the planetary wellbeing, human health, and animal welfare. Going forward, personal health and global food sustainability are considered the strong drivers of consumer choice. The planet's health on the heels of taste, nutrition, and natural clean labeling, will elevate into sharper focus by the younger generations.

The food industry has an important role to play in helping consumers shift to a diet of more plant-formulated foods. This includes the necessity to increase intake of micronutrients such as zinc, calcium, iodine and vitamin B12 that are often difficult to get from plants. Nutrient inadequacy is usually the result of people not consuming a sufficient variety of foods from the various food groups. Plant-formulated foods are higher in essential nutrients like fiber, polyunsaturated fatty acids (PUFAs), folate, vitamin C, vitamin E and magnesium, while plant protein quality and quantity are typically lower. These lower levels of nutrition need to be harmonized if references are made to the animal-sourced protein alternatives.

Increasing demand for meat products requires an increase in livestock production, a scaleup that is highly questionable knowing the limited resources the Earth can give. Ultimately, there will be a clash between the ever-expanding world population and the rapidly growing need for agricultural land to sustain life.

Even though most of the developed countries aggressively increased their plant-formulated meat consumption, 2021 had the highest global meat consumption on record. This global trend will likely continue showing stark increased meat consumption in Sub-Sahara Africa, Asia, China, and South America. These trends not only cause GHG emissions from food production to rise substantially, but also force another steep upscale of animal production for the world's meat supply.

It is questionable if the limited resources of the Earth, such as available fresh water, feed, and fertile soil will be sufficient as the world's population continues to grow to an expected 10 billion inhabitants by 2050. As earth resources become more scare and livestock pollution and feed requirements continue to aggressively grow, alternatives to conventional livestock farming will be required.

Change the Process, Not the Food

In black and white language, the 4th Industrial Revolution can either cause socioeconomic insecurity or, on the other side of the spectrum, provide beneficial quality of life improvement, for the global population. As seen in the past, industrial revolutions can only succeed in economic and ecological measurements if consumers embrace the change.

Throughout history, fear has been used to manipulate and control populations. In the world of food democracy, there is the privilege and responsibility to question the things that are being encouraged to fear, as well as the opportunity to hear more than one perspective. Therefore, the question that needs to be answered is what the primary purpose of modern food research

is. Is it to improve health most effectively and efficiently, or is it to maximize the financial return on investment, boosted by the pervasive web of deep financial entanglements between legacy food industry, pharma, and government health agencies?

Maximizing Potential

One of the main objectives to maximize the positive impact of cellular biology is reducing or even removing animals from the meat and dairy protein supply chain. These noble objectives harness the disruptive nature of cellular and/or molecular agriculture, making food more accessible, cost-efficient, and healthier for future generations that live on planet Earth.

It is hard to believe, but the health of the planet is of almost equal concern to the health of its population. It is true, however, that environmental health issues can vary across the globe. For example, in Asia and Latin America, air pollution and clean water shortages are of significant concern, while the primary issue in Indonesia is litter and landfill. In Europe, there is growing awareness about the ill effects of plastic waste and ocean pollution.

Precision Fermentation Going Forward

Both legacy and startup food companies ultimately need to democratize ownership of cellular agriculture, not only for the happy few, but especially for the masses. Only then will the 4th Industrial Revolution maximize its potential by facilitating (emerging) technologies, such as meat, dairy and eggs from cultured cells, fungi and/or genetically-modified yeast.

Digital platforms, artificial intelligence, bioengineering technologies -including precision fermentation- are now positioned to orchestrate political-economic participation with the aim to reduce ecological and environmental harms.

There is a rather low consumer awareness of genome-edited (GE) foods. Genome editing is the collective terminology to describe a wide range of technologies used to alter the DNA of organisms from plants and animals by adding, deleting, or replacing certain DNA sections. Obviously, small changes to the DNA line-up improve traits in the target organism to enhance shelf life, nutritional content, organoleptic quality, as well as disease resistance. Using genome-editing technology allows faster and more precise change that will ultimately increase crop yield significantly.

These sociotechnical pathways synergize tissue engineering, molecular agriculture, computer science, and

ideally open-source licensing, as well as social financing for the weaker members of society, including farmers in developing countries.

There is no doubt that cellular agriculture can reduce water, land, and chemical inputs, improve food safety and availability, as well as reduce greenhouse gas emissions. How wonderful it would be that if animals no longer must be raised and slaughtered to end up as human food! Of course, there are still socioeconomic and ethical questions that need to be addressed, including displacing farmers, fishermen and ancillary industries that is usually considered the first entry point of further food processing.

Power Grab or Democratizing

In agriculture, artificial intelligence is significantly reducing the use of labor: drones, sensors, and automated self-driving equipment all contribute and accelerate crop yield efficiency. For some groups of society like farmers, there is good reason to be skeptical of utopian-sounding technology breakthroughs. Eventually, there could be widespread concern in the concentration of ownership and wealth that may cause centralization of power and, as such, make large conglomerate agri-food companies abuse their muscles and unleash social power. It will be essential to engage all stakeholders, including farmers and consumers in an open and frank dialog to have this fast-moving area of cutting-edge technology succeed.

It is important to recognize that agro-sustainability of food production also need to be seen from a non-industrial standpoint of view. Even though cellular agriculture will push ahead with continued innovation, including dominant platforms of superior artificial intelligence. This means that it will be imperative that inclusive public policies, democratic principles and pathways are governed by multi-stakeholder interests.

An effort to farming that slows down climate change is adopting regenerative agriculture. One such approach is regenerative farming that positively influences climate change by building up soil-bound organic matter (that absorbs carbon dioxide). An added benefit is that organic soil matter improves water retention, as well as provides a habitat for beneficial microbes and less need of fertilizers.

Climate Beneficial Foods

With the global food system responsible for a third of the overall CO2 emissions, more focus must be given on climate beneficial and sustainable foods. Agriculture is part of the solution removing atmospheric carbon dioxide, thus plays an important part to slow down climate change. For perspective: agriculture covers approximately 1.5 billion hectares globally. All plants draw carbon dioxide from the atmosphere during photosynthesis -or generating energy from sunlight. Some of the carbon dioxide is fixed in the soil. The carbon stored in the soil -like forests, grasslands, farmlands and wetlands - as well as the carbon stored in aquatic and marine systems, outweighs the carbon in the atmosphere.

Animals play a vital role in soil health, not only safeguarding land against drought but also sequestering carbon and erosion. Regenerative farming -including animals that are reared humanely- can be part of the solution to optimize the holistic ecosystem. Industrial farming requires high levels of chemical inputs and typically services monoculture crops, usually soy, corn, wheat, canola, pea, and potatoes. In addition, frequent ploughing increases topsoil erosion.

Keep in mind, however, that research suggests that about 10 percent of all meat, eggs, and dairy products eaten across the globe will be from an alternative protein source by 2035.

Vertical Farming

To secure global food supply, a compromise between these two systems is needed. Regenerative farming should not shy away using "high-technology" innovations, including vertical farms, such as the production of large number of vegetables and/or fruit, in "produce buildings" that occupy a very small amount of land and use water sparingly. Vertical farms use artificial lightening and growth media to grow and harvest year-round vegetables and fruits for the local community, as well as supply tomatoes, lettuce,

cucumbers, strawberries, and blueberries. Growing pressure on the supply chain will make farming closer to market in cities more appealing, which means that consumers can get it at its freshest.

The net-effect is that vertical farming reduces the dependency on "highly-polluted inputs", not just significant savings on energy and transportation, but also less use of irrigation water and chemical fertilizers. All these advantages will help lower the carbon footprint while producing healthy foods year-round in or close to urban areas.

Important Sustainability Objectives

• Waste valorization: transforming waste into beneficial proteins. For example, converting barley spent grain into premium barley protein
• Supply chain digitalization: blockchain and artificial intelligence (AI) to validate food safety and origin.
• Regenerative agriculture: cellular biotechnology, molecular farming to secure food supply for future generations.
• Diversification of plant protein sources: avoiding monoculture cropping and biodiversity loss such as induced by soy's dominance.

Farmers provide the stewardship of soil, seeds, biodiversity, as well as the animal-human interactions. Although small-scale farming is very important in developing countries, such as in the Asian and African regions, their existence is under threat because of socio-economic changes in society.

A Multidisciplinary Approach

For an increasing number of young people, farming is not really a fashionable business to be associated with. It is important for farming to embrace high-tech, app-powered agriculture methods to improve living conditions, including higher margins for the agri-products that are brought to market.

Climate change is causing land degradation, especially triggered by topsoil erosion and depletion of essential crop growth nutrients. A multidisciplinary approach will be needed to tackle soil degradation. A major component of the possible solutions will be financially incentivizing sustainable farming practices so that farmers can tackle the root causes of pollution and apply environmentally sustainable and profitable agriculture systems to feed a growing global population.

Extreme weather conditions, heavy rainfall, as well as prolonged drought contribute to more pollution and farmland degradation. Regeneration of topsoil is one of the key elements and the frequent use of cover crops is one proven method of successfully preventing soil erosion by wind, rain or sun, aside from assisting to sequester carbon in the soil via their deep roots.

Extreme weather conditions are setting up a climate disaster that can potentially strangle agriculture, including ranching. Water availability is becoming a serious concern. For example, the drought in most of the western US States -Nevada, Utah, Colorado, Arizona, and California- drives up wildfire danger, threatens electricity supply and, above all, reduces the yield of the harvested food and its ingredients. When agriculture land is dry, the sun's energy is heating the air instead, which exacerbates more dryness. In the contiguous US, 2020 was the 5th hottest year in the 126 years since temperature measuring began. Even a little more eastward in the Great Plains, the lack of rain can have detrimental effects in the corn, soy, wheat, and pea harvests.

The New Normal

It is critical to engage in an honest and open communication with consumers about climate change. Slowly but surely, planetary health might be on the same platform as personal health as the main driver of the consumer decision making. It is important that people receive trustworthy information on how agriculture, and the food and industry impact the planet, as well as pinpoint solutions to accelerate the journey towards net-zero emissions.

The global slaughter-free food (r) evolution is galvanizing investments from the industry legacy companies, as well as venture capital firms and A-listed Hollywood celebrities. Among the younger generations there is high acceptance rate for environmentally sustainable meat cultivated from animal cells, and animal-free milk proteins.

About the author:

Henk Hoogenkamp,
Proteins, Advisory, Boards, Author

MAXIMIZING PROTEIN'S PROFITABILITY FROM MEAT AND POULTRY

There's money in protein. Whether it's meat or poultry, and whether it's processed for human consumption or it's worth making the effort to extract every possible kilogram of saleable raw materials. But this is a business with risks.

For one thing, derived meat for rendering delivered by slaughterhouses typically contains foreign materials, and these can be so difficult to detect that they get all the way down the processing line into the final product. For another, when rendered meat and poultry are turned into dry pet food, one type of kibble can easily get cross-contaminated with another, so that packages mistakenly contain unlisted ingredients. And if potentially harmful products get into the hands of an unhappy customer with a cellphone and social media access, the retailer's brand reputation can quickly be damaged.

These threats mean it is crucial for processors and renderers to have effective safeguards in place to protect food safety and product quality, whilst also minimizing food waste to improve sustainability and profitability. These things have always mattered, of course, but shifting consumer expectations make them more important now than ever before.

Risks, Yes - But Potentially Big Rewards

The risks and rewards of meat processing are increasing for two big reasons. One is that consumers have become far less tolerant of imperfections in the food they buy. The other is that the demand for high-quality, protein-rich foods for people is growing fast.

In fact, mankind's need for proteins is set to skyrocket. The United Nations' Food and Agriculture Division predicts that by 2050 global meat production will double - yes, double! - as the world's population increases from 7.9 billion people to 9.8 billion. At the same time, increasing wealth in developing nations will empower greater numbers of people to spend more on food.

Increasing meat production is good news for processors and renderers, but there is a downside: meat and dairy production are responsible for a whopping 14% of global greenhouse gas emissions. This means it's imperative to minimize food waste - not only by getting retailers and consumers into the habit of throwing away less, but also by making more efficient use of the potentially usable food in livestock.

Sorting Machines Solve The Problems

Thanks to technical advances, there are solutions to all of these challenges. TOMRA Food, the leading manufacturer of sensor-based sorters for the food industry, offers machines that safeguard brand reputations and enhance sustainability by reducing food waste, protecting food safety, and consistently maintaining high product standards.

Modern optical sorting machines also solve the widespread problem of labor scarcity, as well as helping to eliminate the health risks inherent on processing lines - as the COVID-19 pandemic drags on - when people have to spend a long time standing close to each other. And whereas manual sorting is subjective, imperfect, and especially vulnerable to errors when laborers are tired or bored, automated sorters work from the beginning to the end of each shift with unflagging accuracy.

TOMRA's sorters detect and eject unwanted materials from processing lines that simply cannot be seen by the human eye or inferior machines. They do this by inspecting materials according to their shape, color, structure, size, and even their biological characteristics. TOMRA also offers machines with x-ray technology to detect the presence in food of highdensity foreign materials.

For additional advantages, TOMRA's machines can be connected to TOMRA Insight, a webbased data platform that gathers sorting data in real-time and stores this securely in the cloud. Live data can be reacted to immediately (and remotely) to optimize machine settings; historical data can be used to quantify and compare the quality of materials from suppliers. Such data analysis will become increasingly valuable as we move into a digitized future, transforming sorting from an operational process into a strategic management tool.

So, let's take a brief look at the sorting machines best-suited to meat and poultry processors.

Solutions for Meat and Poultry

TOMRA offers sorting solutions for a wide variety of meat and poultry applications. These are for frozen products such as ground meat, nuggets, patties, and bacon bits, and for fresh raw products such as sausages.

TOMRA also offers inline inspection systems. These help processors determine the right fat percentage for any grinder/mixer set-up for minced meat, burgers, and sausages, as well as making real-time measurements of protein and moisture levels. And the QV-P in-line detection machine for chicken fillets helps ensure that fillets with 'wooden breast' don't end up in the final packaging.

Producing and selling tasty, protein-rich sausages shouldn't be compromised by having casing residues still attached to the final product (or by any other foreign material, for that matter). The TOMRA 5B safeguards producers and brands against complaints and expensive recalls by detecting even the smallest casing fragments. The TOMRA 5B also controls for sausage length, dimensions, discoloration, and breakages. And there's the option to sort out the rejects in two streams - one for foreign materials and casing remains, and one for products that don't match the set scope but can be reused, minimizing food waste.

For IQF products such as chicken nuggets or stripes, bacon bits, or other breaded or unbreaded products, the best sorters are the TOMRA 5C. Located after the freezer and close to packaging, this unit sets the benchmark in product safety at the same time as minimizing false rejects and food waste. By using new, best-in-class laser technology combined with TOMRA's unique BSI+ (biometric signature identification) scanner, the unseen becomes visible, making foreign materials a problem of the past. These technologies are also highly effective at sortingout discoloration, black spots, embedded plastic, doubles, thin coating, and voids.

www.tomra.com

MORE THAN A SIMPLE MEANS OF TRANSPORT TAKING CONTROL OF YOUR CONVEYOR LOGISTICS

For those who really care about adding value to a processing system, a conveyor belt is not just a simple means of transport for getting product from A to B. A conveyor belt solution in a food processing plant must address many different requirements: it must be hygienic, reliable, flexible and quiet, yet at the same time controllable and easily cleanable. A conveyor system should create an interactive logistic environment, while maintaining product quality and optimizing process integration. Processing plant managers should carefully consider conveyor equipment and select the right belt type and material. But what are the main requirements when selecting a conveyor belt in food processing applications?

Hygiene

The number one priority should be hygiene. Conveyor belts that are in direct contact with food require special attention. A sanitary design will improve safety and increase profitability, because less time, water and detergents are needed to meet the standards. A hygienic conveyor design should have easy access to belting from all sides, allowing operators to inspect, clean and sanitize the belt quickly and effectively.

Keeping the Integrity

Each belt conveying poultry meat should maintain product integrity during the entire journey through the process. Integrity means safeguarding product quality and maximizing yield. In an ideal situation, each product is put down on the belt only once, with no need for tumbling, flipping or any further movements. It's the task of SystemFlex to position product precisely on the belt, as the way in which product is positioned for downstream equipment will strongly influence the efficiency of the total process.

Shelf Life

The more "bare meat" is tumbled, flipped or otherwise moved around during the process, the more it loses its protein, the more its adhesion force weakens, the shorter its shelf life will be. A well-designed logistic conveyor solution can contribute to optimal shelf life of the end product. With its strong technological background and experience in the area, Marel successfully ensures product integrity. When proper, careful handling of raw fresh meat would add just one day to shelf life, this is extremely valuable for customers.

Product Damage Prevented

SystemFlex solutions pay special attention to the point of transfer from and to the belt. Misaligned machines and incorrectly adjusted belts are the main reasons for bad product handling. This results in product damage, which can lead to financial loss for poultry processors. The conveyed products, raw meat or meat in open trays, are never

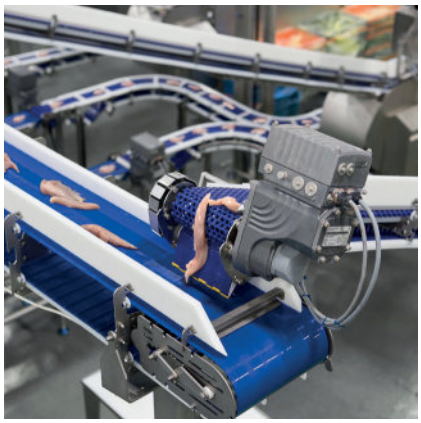
at risk, but are always carefully handled. Product damage, loss or bulking as well as bacterial contamination will be avoided.

Easily Cleanable

Easy cleanability has a high priority for conveyor systems. All parts of the conveyor systems should be easily accessible for cleaning and maintenance. SystemFlex conveyors meet the highest standards in safety, ergonomics and hygiene in the food industry. They comply long-term with the high requirements set out in the EHEDG guidelines. Marel's SystemFlex components are made from durable materials, resistant to moisture and cleaning agents. In either wet or wash-down environments, safety of products and equipment is ensured.

Essential Contributor

SystemFlex is an interactive, intelligent conveyor system that stops the accumulation of product and the occurrence of unnecessary gaps, making for a smoother process. It is designed to add value to the entire process and interact with the machines in the processing line. This would be impossible to achieve with traditional conveyor belts. This kind of intelligent logistics offers more than just a simple means of transportation. The SystemFlex conveyor system is an integral, essential contributor to the process. Marel's SystemFlex concept has been developed with the processor's point of view always in mind. It is into detail configurable to customer specification. Each individual plant can have its own tailor-made conveyor belt layout.



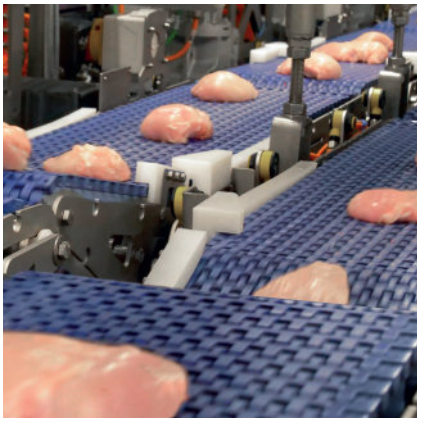
Intelligent

Most preferably, there's only one supplier responsible for the entire internal logistics in a processing plant. In this ideal situation, all machines and conveyors are aware of each other's condition. Marel's SystemFlex conveyor systems

can achieve such an intelligent logistical environment, presenting many distinctive advantages. At its most sophisticated, a SystemFlex solution – combined with Marel's Innova software – even allows for traceability: the recognition of product and its location.

Flexible and Re-usable

SystemFlex set-ups can range from small to large scale. On the one hand a section of SystemFlex conveyor can be inserted seamlessly into an existing infrastructure, regardless of its configuration. On the other hand SystemFlex can



be the 'total system integrator' in a processing plant, connecting all process steps in a logical way and optimizing the entire process. Using SystemFlex' building blocks, food processors can put together any desired, individually optimized configuration with great flexibility. Building blocks and accessory components are available for all frame sizes and belt types. Examples of these building blocks are support frames, horizontal curves, inclines (ups), declines (downs), drive and idle ends. Every length, curve and upwards or downwards movement can be integrated. In this way, each SystemFlex solution can be configured according to the customer's individual situation, with all due attention being paid to ease of maintenance and servicing.

Product Distribution

Adequate distribution of products is an extraordinary feature of SystemFlex. Fillets of all qualities, weights or quantities are directed to their best possible destinations, by means of fast, vertically switching belts. SystemFlex Fillet Distributor enables product-data-driven in-line separation into multiple product streams. Product count can be the criterium to distribute fillets over different belts in a certain ratio, such as a 50-50 distribution.

www.marel.com

FIRST FULLY AUTOMATED PACKAGING SOLUTION FOR STICKY PRODUCTS

Cabinplant introduces next-generation weighing and packaging solutions for the food industry. With the fully automatic MHW SF Extreme, it is now possible to weigh and pack sticky products that, among other things, are used for the booming convenience market.

Cabinplant in Haarby on Funen, Denmark, are specialists in process solutions for the food industry, selling to a large part of the global market. With the new, fully automated weighing and packing machine, they break the boundaries of what has been possible so far in weighing, dosing, and packing of sticky products, which play a crucial role for the convenience sector.

Convenience meals – ready-to-eat – is a booming market. It has already reached 500 billion USD and is expected to grow by three percent annually in the coming years – a trend that has been further amplified by the covid-19 pandemic. Therefore, Cabinplant's fully automated solution has great appeal to a booming sector where there have been many challenges to overcome.

The food industry has become increasingly aware of the vulnerability of their production, actualized during the pandemic, where especially labour-intensive production and packaging lines have shown significant vulnerability. The new weighing and packaging machine enables increased automation and reduces the food manufacturers' risks of involuntary production stoppages.

Nothing sticks and stops with Cabinplant's MHW SF Extreme - thanks the unique design of pans and scrapers.

Sticky Products a Well-Known Hurdle

Increased automation has been limited by the widespread use of sticky ingredients in ready-to-eat products, as the fully automated packaging plants have not been able to handle them. So far, the limit has been reached for fresh products such as chicken and fish. Stickier products have stuck to the weighing machine and have not been able to be packaged properly. This challenge is solved by the new patent from Cabinplant.

Patent Enables Full Automation

In the new Multihead Weigher SF Extreme, Cabinplant's combination weigher is equipped with screw feeders, new scraper/weighing pans and a completely new processing solution, where the selected sub-portions are weighed and mixed in a pan. A unique scraper design in the pan ensures that the entire portion is dispensed into a cassette. From here, the food is packed into the trays on the conveyor belt.

Thus, Cabinplant's revolutionary new weighing machine makes it possible to fully automate the dosing and packaging of ready-to-eat meals, which includes sticky ingredients such as diced vegetables, onion rings, rice, pasta, tuna fish, mayonnaise, yoghurt, etc. These processes were previously performed manually or partially manually.

- It is a technological breakthrough that breaks the boundaries of what has been possible so far with package lines and

Multihead weighers. Now the production of a large number of ready-to-eat meals can be fully automated, says Henning Ingemann Hansen, Director of Research and Development, Cabinplant A / S.

The end-product can be ready-to-eat meals, which are packed in plastic trays, standing bags, etc. The cassettes can be replaced, which reduces the time for cleaning and changing to only 5-10 minutes. It solves the challenges with frequent changes in recipes and packaging sizes at a time when the retail trade wants more varieties as well as more frequent and smaller deliveries than ever before.

High Precision – Less Give-Away

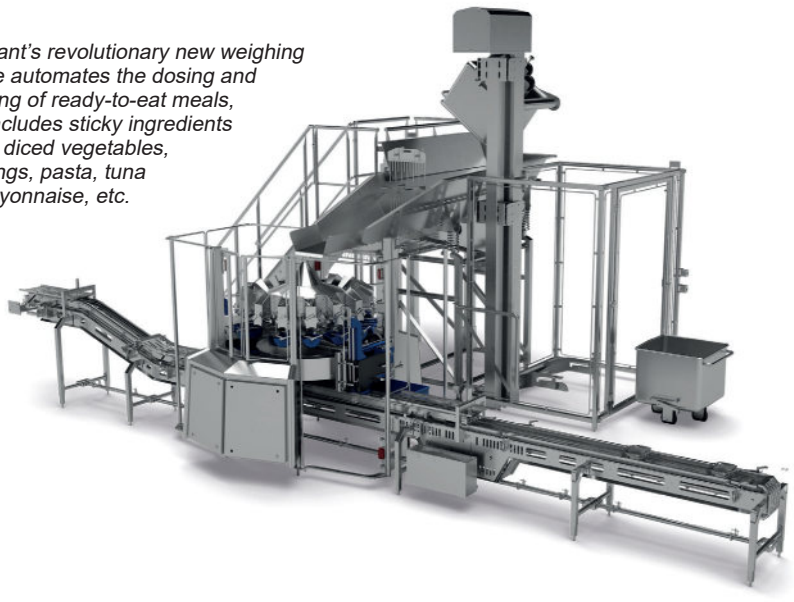
The solution does away with excessive give-away, which is often seen on manual fill lines. The precision is very high and more than meets the strict European E-standard, where a maximum of 2.5 percent of the packaging can be underweight.

Reduces Production Vulnerability

Cabinplant has developed the solution in collaboration with a large, European poultry company that invests heavily in the production of convenience food. Here, experience shows that the number of operators has been reduced by 8-9 people per line, or 60-70 percent. This has increased productivity and reduced the vulnerability of the production line significantly.

Our fully automated MHW SF Extreme weighing solution for sticky products removes a major bump in food manufacturers' roadmap, where constant productivity improvements and new solutions are needed to increase retail competitiveness. Therefore, we have high expectations for the new solution, concludes Michal Falck Schmidt, Sales Director at Cabinplant A/S, where they predict great export potential for the new solution.

www.cabinplant.com



Cabinplant's revolutionary new weighing machine automates the dosing and packaging of ready-to-eat meals, which includes sticky ingredients such as diced vegetables, onion rings, pasta, tuna fish, mayonnaise, etc.

INVESTMENT PROJECT AT VEAL PRODUCER EKRO SUCCESSFULLY COMPLETED WITH THE INSTALLATION OF SEALPAC THERMOFORMERS

The company Ekro in Apeldoorn (NL), part of the VanDrie Group, is a renowned producer of veal. At the business park along highway A1, approximately 400,000 calves are processed into high-quality meat products every year, which are mainly distributed in Germany, France and Italy. In 2020, Ekro made significant investments in its packaging department, resulting in four new thermoformer lines. We spoke with Christian Scholten, Project Manager a.i. at Ekro, and Anjo Kaatman, Head of Technical Service within the company, about the recent installation of these lines and the challenges such a project entails.

Christian Scholten, Project Manager a.i. at Ekro

High-Quality Veal with Attention to the Animal

What once started as a municipal slaughterhouse in the centre of Apeldoorn is now an ultramodern production company on the outskirts of the city with approximately 750 employees. Ekro works in two shifts per day on the tastiest veal products. The new building at its current location along highway A1 was constructed in 1989, not long after the company was incorporated by the Van Drie family. Today, the VanDrie Group includes Dutch companies such as ESA and T. Boer & zn, but also Sobeval and Tendriade in France.

Anjo Kaatman, Head of Technical Service within Ekro

'When you ask for veal, we serve a concept', that is the starting point of Ekro. The company supplies

high-quality veal products all over the world that are tailored to the wishes of the customer, such as whole veal breast or veal roulade for the catering industry, but also consumer products such as veal burgers or steaks. Animal welfare, food safety and sustainability are of utmost importance. This means that Ekro's products fully meet the contemporary requirements of discerning chefs and consumers. All employees, but also each supplier of the calves, work continuously to improve animal health and welfare.

Full Traceability

Veal is an appreciated delicacy due to its fine structure, high nutritional value and subtle taste. It is easy to digest, low in cholesterol and rich in vitamins and minerals. That is why the product is widely used and highly valued in international kitchens. Ekro works with traditional wholesalers, retailers, food service and food manufacturers. Orders range from the delivery of complete carcasses to the delivery of kitchen-ready consumer products.

Christian Scholten, Project Manager at Ekro: "What makes Ekro unique is the quality we deliver. Our company is part of a complete chain, from the feeding of the calves to the packaged end product. In addition, Ekro has been committed to traceability for several decades. The abattoir and deboning section are equipped with high-tech hardware and software, which connect seamlessly to each other, so that full tracking and tracing of the products is guaranteed. For example, the customers of Ekro, primarily the wholesaler, can always enter the stated barcode for each product on a special website to view the complete life cycle of the meat."

The SEALPAC thermoformers are packaging veal products in two shifts per day

Ekro produces high-quality veal products for wholesalers and consumers

Impossible to Break

As Head of Technical Service, Anjo Kaatman is responsible for Ekro's existing machinery. Within the company's Project Office, Christian Scholten, together with four other colleagues, is constantly working on renewal processes in the broadest sense of the word. Recently, both men worked together in a large investment project in the packaging department of Ekro. The aim was to modernize a number of existing lines, so that they could work even more efficiently. For example, the same thermoformer has been used since 1999 for packaging the by-products,

especially organs. This machine, an RE3, was once purchased from the company Repak B.V. in Emmen (NL), a Dutch family business, just like the VanDrie Group.

There is a great anecdote about the installation of the RE3. At the time, the machine was delivered by truck and brought to its destination in one piece on wheels. However, it turned out that there suddenly was a wall that had not yet been there at the time of purchase. With two colleagues quicky gathered from Emmen, the RE3 was taken apart and put back together in the right place, so that it could still be installed over the weekend. Since 1999, the line has been running 16 hours a day, where cleaning takes place every evening and maintenance is done twice a year. Anjo Kaatman: "The RE3 has always functioned without problems in our challenging production environment until the end of 2021."

The Importance of Good Maintenance

The RE-series thermoformers are still built in Emmen, but since 2007 they have been offered in the Benelux under the brand name SEALPAC. The advice, sales and maintenance are done by Ultrapak B.V. in Nijkerk, the exclusive distributor for SEALPAC thermoformers and traysealers in the Netherlands, Belgium and Luxembourg. Anjo Kaatman: "We have had an exceptionally good relationship with Ultrapak from the start. They take their responsibility and meet the set deadlines, also with regard to the agreed service contracts. Installation of new machines, but also the maintenance of existing machines, must take place with us during the weekend. The requirement is then that the machines have to be running again on Monday morning at 6.00 am, and that has always been successful so far."

With the RE3 in use for more than 20 years, and a number of other lines that could use a facelift, the inevitable question of replacement came in 2020. To this end, a large project was started within Ekro, in which distinct options were examined. Revision of the existing machines was still a possibility, but replacement turned out to offer the most benefits in the end. Ultrapak, in the form of contact person Andres Vos, provided an extensive analysis. As part of the project, a visit was made to the factory in Emmen. For Christian Scholten, it was the first time. He remarks: "It is a very neat factory, where you can clearly see the production process of the machines, from drawing to assembly. Furthermore, it is obvious that the factory is constantly investing in production resources."

Four New Lines

Ultimately, Ekro decided to invest in four SEALPAC thermoformers: an RE30 tandem machine for packaging the by-products and three RE25 thermoformers for packaging fresh veal in various weights and sizes, including entrecote, fillet, escalope, rib-eye and steak. Anjo Kaatman: "The first two machines were installed in September 2021, and the last two followed in November. In both cases this happened over the weekend, and in both cases the machines were ready for production by 6:00 am on Monday morning. As we are used to from Ultrapak!"

The three RE25 thermoformers are located right next to each other in the same production hall. Because of the tight space there, including a few awkward pillars, the machines were designed to fit. Each of the RE25 thermoformers is suitable for a fixed packaging format, which is tailored to the weight and/or dimensions of the various veal products. The RE30 is

Christian Scholten between two SEALPAC RE25 thermoformers

located in a separate hall, where the by-products are packaged, such as liver, heart, tripe, sweetbreads, etc. Christian Scholten: "This line has regular changes during the day. By choosing a tandem machine with two forming stations, suitable for two formats (roughly 4 kg and 5 kg), we can now change at the touch of a button. This results in enormous time savings. Our staff is very economical with and proud of this line!"

Flexible film vacuum packaging protects during storage and transport

Christian Scholten shows the packaged product

All SEALPAC machines are equipped with product support due to the heavier packaging. This prevents the film from slipping out of the chain. Furthermore, all machines have central lubrication, so that maintenance is minimized. Anjo Kaatman adds: "The SEALPAC machines are characterized by their simplicity and reliability. I therefore know that our staff can quickly familiarize themselves with these machines. The touch-screen monitor of the RE series is also easy to operate."

The Optimal Packaging for Semi-Finished Products

Only a small part (about 5%) of the veal produced stays in the Netherlands. The remaining 95% is exported to about 50 countries, mainly Europe, China and the US. The primary buyers are wholesalers, who in turn supply the catering industry. However, there is also a growing consumer products department. Semi-finished products are packaged on the SEALPAC thermoformers, which mainly go to the (catering) wholesaler. The packaging primarily has a protective function, so that a flexible film is sufficient and sustainable. By using vacuum technology, an optimal shelf life is achieved. Christian Scholten: "If we look at the vacuum packaging based on PA/PE film, such as those that are run on the SEALPAC machines, we are actually already at the minimum packaging level. Thanks to the Rapid Air Forming concept, standard on the SEALPAC machines, the film is already as thin as possible."

Future Plans

Of course, the Corona pandemic has had an impact on Ekro, all the more so because the catering sector, and with it the wholesaler that supplies that sector with veal, has been hit. Christian Scholten: "That was especially true in the first year of the pandemic, when the catering industry in southern European countries was closed. Since then, production has picked up again and is almost back to the same level. Fortunately, we can now shift our attention to other innovation projects within Ekro."

www.sealpacinternational.com

PACKAGING WITH LARGE TRAYS AT HIGH OUTPUT

Wider, more efficient and with greater process reliability: MULTIVAC is adding three new traysealer models to its TX8 series with a new format width, and thereby offering customers even more packaging flexibility. Thanks to their wide format, the TX 815, TX 825 and TX 835 traysealers are particularly suited to packing products in large trays in a two-track packaging process, and they are characterised primarily by their very high output. As with all models of the TX generation, it is of course possible to use Pack Pilot and other MULTIVAC Smart Services on these models.

The new machines enable trays with a maximum width of 270 mm to be run in a two-track format, or alternatively with a width of up to 560 mm in a one-track format. This means that they are specially designed for packing a wide range of food products or ready meals in family packs and catering trays. Thanks to the wide format of the machines, it is now also possible to achieve a high output of large trays with "wide side leading".

High Performance and Process Stability at the Same Time

It is particularly with skin packs, that the new high-output traysealers show their merits: since the cycle output with skin applications is generally lower than other pack types, this two-track machine version with its tandem gripper enables very high outputs to be achieved. The tandem gripper guides the trays gently and rapidly through the packaging process, ensuring that the product is transported very securely.

If skin packs are being produced, outputs of up to 100 packs per minute can be achieved depending on the tray size and product protrusion - and all this with excellent pack quality.

Future-Proof Thanks to Innovative Features

As with all traysealers of the TX generation, the new machine models are equipped for the future. The innovative machine control with Multi Sensor Control and Flow Manager makes a major contribution to the machines' very high output, consistent reliability and optimum pack quality with an even product flow.

The die concept, the so-called X-tools, is a further guarantee of a consistently high pack quality. It distributes the sealing forces very evenly on every tray, and this in turn ensures a uniform and reliable packaging result is always achieved. The RFID-coded dies are of particular benefit in terms of operating security to those companies, which run many different tray formats and therefore have frequent die changes.

Process Optimisation in a New Dimension

All the models are prepared in advance for MULTIVAC's digital solutions. A wide range of MULTIVAC Smart Services is already available to customers, and these create real added value in every respect. By linking the packaging machine digitally, it is possible to access information about the current production status from any location. It is also possible to monitor and optimise the packaging process, as well as detect bottlenecks and faults, and even create new recipes simply and reliably.

In order to simplify the process when setting up new products, trays and films, the TX models can for example be connected online with MULTIVAC Pack Pilot, which automatically sets the machine parameters. This makes it possible to achieve a very quick production start - even with new pack or product applications.

The other MULTIVAC Smart Services currently include Smart Production Dashboard, Smart OEE Analyzer, Smart Log Analyzer, Smart Data Backup and Smart Machine Report.

www.multivac.com

NEW SEALED AIR FOOD PACKAGING FILMS HELP ENHANCE RECYCLABILITY

Sealed Air has expanded its range of recycle-ready barrier display films to help improve recyclability throughout European food supply chains.

Two new CRYOVAC® Brand Eco BDF* films have been specifically designed for compatibility with both LDPE mechanical recycling and chemical recycling processes. The new range includes Eco BDF20M, which is made from 100% virgin materials and Eco rBDF20M – a barrier display film containing 30% Certified Circular Resins (CCR).

Both films have been developed and tested according to protocols published by the On-Pack Recycling Label (OPRL) (UK), Association of Plastics Recyclers (APR), with these practises aligning with those of Plastic Recyclers Europe (PRE). This means the new films are RIC4 certified. The films have also been analysed by Cyclos and determined to be recycle-ready.

Arnaud Brunet, Food Films Portfolio Director EMEA, at Sealed Air, said: "The APR and PRE protocols are extremely well defined and diligently test the ability to recycle innovative new films alongside pure materials such as polyethylene.

"Recycling strategies are advancing throughout Europe, with infrastructures at various stages of development in different countries. Our aim was to develop new barrier display films that would optimise recycling compatibility across this diverse spectrum. It will help food processors, retailers and brands to improve resourcefulness as countries increasingly heads towards a circular economy."

The sustainability benefits of the new Eco BDF* films are enhanced further through an ultra-thin barrier. At 21 microns, both films are lighter and thinner than other widely used thermoformable films.

Arnaud added: "The recyclability of the new films is complemented by the high-performance features of the CRYOVAC® Brand. The medium barrier helps to reduce food waste by extending shelf life and protecting food against contaminants and spoilage. This is achieved by using less film material including lower levels of EVOH."

ECO BDF* films are compatible with the new CRYOVAC® Brand TA4X range of hot air shrink tunnels. The systems feature a range of different hot air vault configurations and variable speed drives for packaging a variety of foods including fresh meat, poultry, fish and cheese.

The launch of ECO BDF* follows Sealed Air's development of the world's first food-grade soft plastic film containing CCR. In 2020, Sealed Air released the award-winning CRYOVAC® Brand rBDF™ S10 Film, which is made using up to 30% food-grade CCR and certified by the International Sustainability & Carbon Certification.

Arnaud concludes: "The development of ECO BDF* forms part of Sealed Air's pledge that 100% of its packaging will be recyclable by 2025. This supports our customer's sustainability goals and is focused on providing them with innovative solutions that align with a circular economy."

*This EVOH-containing film can be recycled in low-density polyethylene (LDPE) streams. Sealed Air internally tests its products in alignment with relevant APR/PRE guidelines. Such testing does not imply and should not be interpreted as an endorsement of products or certification of results by APR or PRE. Degree of recyclability of the material may vary depending on scope and availability of flexible film collection, sortation and recycling programs.

www.sealedair.com

SUSTAINABILITY TAKES CENTER STAGE IN NEW VERSION 3 OF GLOBALG.A.P. COMPOUND FEED MANUFACTURING STANDARD

By Dr. Roland Aumüller and Remko Oosterveld

Consumer consciousness around the origins and sustainability of raw materials used to manufacture compound feed for aquaculture and livestock is growing.

In response, GLOBALG.A.P. c/o FoodPLUS GmbH published its revised Compound Feed Manufacturing (CFM) standard, version 3, on 15 October 2021. To continue operating within the GLOBALG.A.P. system, feed mills must fulfill this new version's additional sustainability criteria in the areas of environmental protection, social responsibility, and economic viability.

Stricter Criteria for Fish Meal, Fish Oil, and Soy

For example, version 3 defines fixed percentages of fish meal, fish oil, and soy that must be sourced from sustainable production. Currently, at least 60% of these products must conform to a GSSI-recognized standard, be Marine Trust certified, or originate from fishery improvement projects (FIPs). By 2025, this proportion will rise to 75%. There is thus a strong focus on rules and prohibitions against the use of fish meal or fish oil of uncertain origins, from illegal fishing, or from over-fished regions.

Defining the Amounts of Sustainably Produced Soy in Compound Feed

The use of soy produced in areas with land conversion and/or deforestation of protected forest areas is significantly curtailed.

Evidence will be based on the European Feed Manufacturers' Federation (FEFAC) guidelines on sourcing sustainably produced soy (2021 version). In order to fulfill the requirements of the CFM v3.0 standard, producers must demonstrate that they follow the requirements for responsible and

conversion-free soy procurement as laid down in the rules of a soy standard recognized by the ITC Soy Benchmarking Tool.

At least 50% of the soy used in compound feed for livestock must meet this requirement. In aquaculture, this applies to 75% of the soy, and for salmonids to 100% of the soy.

The New Version 3 of the GLOBALG.A.P. CFM Standard

The new standard version was developed through the collective work of the CFM Focus Group, made up of GLOBALG.A.P. members, standard users, and compound feed suppliers. The standard is divided into four sections: Part A defines requirements for feed safety, traceability, and responsible sourcing of raw materials. Part B contains social criteria concerning workers' qualifications, health and safety, and social welfare. Additional ecological and social criteria are covered in part C. Part D contains compound feed manufacturing guidelines, in particular a new guideline on bio-security risk assessments for compound feeds.

"It has gotten increasingly complicated for aquaculture compound feed manufacturers like BioMar to source raw materials responsibly. We hope that the GLOBALG.A.P. CFM standard will address the majority of the detailed questions we receive from our market participants. In these questions, the environmental impacts of soy and marine feed ingredients are a particularly pressing issue," explains Ellinor Helland, Food Safety Officer at BioMar.

Significant developments concern part C of the standard. It will require manufacturers to track and reduce the energy and water use, greenhouse gas emissions, as well as wastewater and other waste products created in connection with compound feed manufacturing. Furthermore, audits will monitor humane working conditions and adherence to worker rights.

According to Dr. Paul Morris, director of nutrition and formulation at the feed manufacturer Mowi, version 3 of the standard proactively addresses environmental and social requirements and their monitoring. Using this strong platform, companies can commit not only to feed safety and traceability, but to sustainability and fairness in compound feed manufacturing, as well.

Fish Feed Sustainability

GLOBALG.A.P. aquaculture certification requires producers to use compound feed from certified production processes exclusively. Currently, compound feed manufacturers with GLOBALG.A.P. certified production processes produce a global output of 23 million tons of compound feed each year.

The feed used is therefore a key element in improving the sustainability of aquaculture. In recent years, debates over the need for greater sustainability in feed production have intensified significantly. The new, stricter criteria of the GLOBALG.A.P. CFM standard, version 3, offer producers, retailers, and consumers a higher degree of sustainability.

"Not just in the public eye, but for us at ALDI SÜD too, the low-impact production of feed for farmed fish is an important sustainability topic. That is why the new CFM standard from GLOBALG.A.P. makes a major contribution on the road to more sustainable aquaculture supply chains," says Nina Kurth, Corporate Responsibility Manager at ALDI SÜD.

No Genetically Modified Organisms

Certifying the NON-GM production of aquaculture fish has also become more important in recent years. To that end, the GLOBALG.A.P. system offers an add-on for auditing NON-GM production according to Germany's "OhneGenTechnik" standard [NL1] [AS2] for the farmed fish supply chain. The respective add-on module for feed mills continues to apply unchanged in version 3, as well.

Applicability and Outlook

Version 3 is effective immediately and must be used for all audits of compound feed manufacturers by 1 November 2022.

All relevant documents can be accessed through the document center on the GLOBALG.A.P. website www.globalgap.org.

The publication of version 3 of the CFM standard is only the first in a number of developments in the aquaculture certification system, with the publication of version 6 of the aquaculture standard planned for April 2022 and version 2 of the GLOBALG.A.P. Risk Assessment on Social Practice (GRASP) due to follow by the end of the year.

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AMB Spa
Via San Martino 28
33038 San Daniele del Friuli (UD)
Italy
Tel: +39 0432 946111
Fax: + 39 0432 946111
Email: info@ambpackaging.com
Web: www.ambpackaging.com

Albert Handtmann Maschinenfabrik GmbH & Co. KG
Hubertus-Liebrecht-Str. 10-12,
88400 Biberach/Riss, Germany
Tel: +49 7351 45 1432
Fax: +49 7351 45 20 1432
Email: info.machines@handtmann.de
Web: www.handtmann.de

Cabinplant A/S
Roesbjergvej 9
5683 Haarby,
Denmark
Tel: +45 63 73 20 20
Email: cpi@cabinplant.com
Web: www.cabinplant.com

CEMSAN Slaughterhouse Systems
Saray Mah. Keresteciler San.Sit.
4.Cad. No:49 Kahramankazan, Ankara
Turkey
Tel: +90 312 801 02 22
Email: cemsan@cemsanmakina.com
Web: www.cemsanmakina.com

CSB-System AG
An Fürthenrode 9-15,
52511 Geilenkirchen,
Germany
Tel: +49 2451 6250
Email: info@csb.com
Web: www.csb.com

ESPERA-WERKE GMBH
Moltkestraße 17-33
47058 Duisburg
Germany
Tel: +49 203 3054-293
Fax: +49 203 3054-12293
Email: info@espera.com
Web: www.espera.com

Coligroup SPA
via del Lavoro A. 9
25032 Chiari (Brescia)
Italy
Tel: +39 030 7000761/2/3
Fax: +39 030 713370
Email: info@colimatic.com
Web: www.colimatic.com

Friedr. Dick GmbH & Co. KG
Esslinger Str. 4-10
73779 Deizisau
Germany
Tel: +49 (0)7153 / 8 17 - 0
Fax: +49 (0)7153 / 8 17 - 2 19
Email: mail@dick.de
Web: www.rfidick.de

Eagle Product Inspection Solutions
1571 Northpointe Parkway
Lutz
FL 33558, USA
Tel: +1-877-379-1670

Email: eaglesales@eaglepi.com
Web: www.eaglepi.com

GEA Food Solutions Bakel BV
Beekakker 11,
5761 EN Bakel,
The Netherlands
Tel: +31 492 349 349
Fax: +31 492 349 416
Email: info@gea.com
Web: www.gea.com

FESSMANN GmbH and Co KG
Herzog Philipp Straße 39D
71364 Winnenden
Germany
Tel: +49 7195 701-0
Email: info@fessmann.de
Web: www.fessmann.com

G. Mondini S.p.A.
Via Brescia 5
25033Cologne (BS)
Italy
Tel: +39 030 705600
Fax: +39 030 7056250
Email: info@gmondini.com
Web: www.gmondini.com

GLOBALG.A.P. c/o FoodPLUS GmbH
Spichernstr. 55
50672 Cologne,
Germany
Tel: +49 221 57776 -0
Fax: +49 221 57776 -1999
Email: info@globalgap.org
Web: www.globalgap.org

HIPERBARIC
Calle del, Calle Condado de Treviño, 6,
09001 Burgos,
Spain
Tel: +34 947 47 38 74
Web: www.hiperbaric.com

GoodMills Innovation GmbH
Trettaustrasse 35
21107 Hamburg
Germany
Tel: +49 40 75 109-666
Fax: +49 40 75 109-680
Email: ccc@goodmillsinnovation.com
Web: www.goodmillsinnovation.com

Higel Kältetechnik e.K.
Neugasse 19
D-77694 Kehl-Marlen
Germany
Tel: +49 7854 9090
Fax: +49 7854 985615
Email: info@higel-kaeltetechnik.de
Web: www.higel-kaeltetechnik.de

Hifferman nv

Groenenhoek 134
2630 Aartselaar
Belgium
Tel: +32 (0)3 450 92 41
Email: corporate@hiffermangroup.com
Web: www.hifferman.be

Habasit International AG

Römerstrasse 1,
P.O. Box, CH-4153 Reinach BL,
Switzerland
Tel.: +49 (0) 6071 / 9 69-0
Fax: +49 (0) 6071 / 9 69-52 33
Email: Habasit.Communications@habasit.com
Web: www.habasit.com

Ishida Europe Ltd

11 Kettles Wood Drive,
Woodgate Business park,
Birmingham, B32 3DB, UK
Tel: +44 (0)121 6077700
Fax: +44 (0)121 6077666
Email: info@ishidaeurope.com
Web: www.ishidaeurope.com

Industrial Auctions B.V

Looyenbeemd 11,
5652 BH Eindhoven,
Netherlands
Tel: +31 (0)40 240 9208
Fax: +31 (0)40 240 9209
Email: info@industrial-auctions.com
Web: www.industrial-auctions.com

John Bean Technologies AB

Rusthållsgatan 21
SE-251 09 Helsingborg
Sweden
Tel: +46 42 490 4045
Email: info@jbtfoodtech.com
www.jbtfoodtech.com

IPCO Sweden AB

2453-B VÃ¤stra Verken
81181 Sandviken
Sweden
Tel: +46 (26) 26 56 75
Fax: +46 (26) 25 86 75
Email: johan.nyberg@ipco.com
Web: www.ipco.com

Krehalon B.V.

P.O. Box 414
7400 AK Deventer
The Netherlands
Tel: +31 (0)570 624 333
Email: sales@krehalon.com
Web: www.krehalon.com

K+G Wetter GmbH

Goldbergstrasse 21
35216 Biedenkopf - Breidenstein
Germany
Tel: +49 6461 9840-0
Fax: +49 6461 9840-25
Email: info@kgwetter.de
Web:www.kgwetter.de

Klöckner Pentaplast Group

4 Kingdom Street
London, W2 6BD
United Kingdom
Tel: +01977 692 111
Email: kpinfo@kpfilms.com
Web: :www.kgwetter.de

KARL SCHNELL GmbH & Co.KG

Muehlstrasse 30
73650 Winterbach
Germany
Tel: +49 7181 962 0
Fax: +49 7181 962 100
Email: info@karlschnell.de
Web: www.karlschnell.com

LASKA Maschinenfabrik Gesellschaft mbH

Makartstraße 60, 4050Traun, Austria
Tel: +43 7229 606-302
Fax: +43 7229 606-6302
Email: info@laska.at
Web: www.laska.at

LIMA S.A.S.

456, route de Rosporden
Z.I. Guelen - 29000 Quimper
France
Tel: + 33 (0) 298 948 968
Fax: + 33 (0) 298 948 969
Email: lima@lima-france.com
Web: www.lima-france.com

Loryma GmbH

Am Falltor 3
64673 Zwingenberg
Deutschland
Tel: +49 6251 1799-0
Fax: +49 6251 73964
Email: loryma@crespeldeitersgroup.com
Web: www.loryma.de

Marel Poultry B.V.

Handelstraat 3
5831 AV, Boxmeer
Netherlands
Tel: +31 (0) 485 586 111
Fax: +31 (0) 485 586 222
Email: info.poultry@marel.com
Web: www.marel.com

Marel Further Processing B.V.

Handelstraat 3
5831 AV, Boxmeer
Netherlands
Tel: +31 (0) 485 586 122
Fax: +31 (0) 485 586 222
Email: info.fp@marel.com
Web: www.marel.com

Marel Red Meat Slaughtering B.V.

Albert Schweitzerstraat 33
7130 AD Lichtenvoorde
Netherlands
Tel: +31 (0) 485 586 811
Fax: +31 (0) 485 586 222
Email: sales.oss@marel.com
Web: www.marel.com

Meyn Food Processing Technology B.V.

P.O. Box 16
1510 AA Oostzaan
the Netherlands
Tel: +31 (0)20 2045 000
Fax: +31 (0)20 2045 001
Email: sales@meyn.com
Web: www.meyn.com

Mondi

Marxergasse 4A
1030 Vienna
Austria
Tel: +43 1 79013 4553
Fax: +43 664 247 8042
Email: info@mondigroup.com
Web: www.mondigroup.com

MiVEG GmbH

Am Sandfeld 17
D - 91341 Röttenbach
Germany
Tel: +49 9195 99 99 216
Fax: +49-177-95 99 915
Email: info@miveg.de
Web: www.miveg.de

Nothum Food Processing Systems

631 South Kansas Avenue
Springfield, Missouri
65802 USA
Tel: +1 417-831-2816
Email: nothum@nothum.com
Web: www.nothum.com

PRODUCTOS SUR, S.A

Saavedra Fajardo, parc. 27/7
San Ginés (Murcia)
30169 Spain
Tel: +34 968 881 991

Email: info@prosur.es
Web: www.prosur.es

REX-Technologie GmbH & Co. KG

Irlachstraße 31
5303 Thalgau
Austria
Tel: +43(0)6235-6116-29
Fax: +43(0)6235-6529
Email: office@rex-technologie.com
Web: www.rex-technologie.com

Poly-clip Systems GmbH & Co.KG

Niedeckerstraße 1
65795 Hattersheim a. M.
Germany
Tel: +49 6190 8886-0
Email: contact@polyclip.de
Web: www.polyclip.com

Resino Trykfarver A/S

Metalbuen 13
DK-2750 Ballerup,
Denmark
Tel: 45 44 97 34 88
Email: resino@resino.dk
Web: www.resino.dk

Sæplast Spain, S.A.

Polígono Industrial La Cañiza, 15
36880 La Cañiza,
Spain
Tel: +(34) 986 663 091
Email: sales.spain@saeplast.com
Web: www.saeplast.com

SAIREM

82 rue Elisée Reclus
69150 Décines-Charpieu
France
Tel: +33 (0)4 72 01 81 60
Email: welcome@sairem.com
Web: www.sairem.com

Maschinenfabrik Seydelmann KG

Hölderlinstraße 9
70174 Stuttgart,
Germany
Tel: +49 (0)711 / 49 00 90-0
Fax: +49 (0)711 / 49 00 90-90
Email: info@seydelmann.com
Web: www.seydelmann.com

Sealpac International bv

Langekamp 2
NL-3848 DX Harderwijk
The Netherlands
Tel: +31 (0)341 46 20 30
Fax: +31 (0)341 46 20 33
Email: info@sealpacinternational.com
Web: www.sealpacinternational.com

STEEN F.P.M. International

Franse Weg 33
B-2920 Kalmthout
Belgium
Tel: +32-(0)3/665.04.00
Fax: +32-(0)3/665.34.58
Email: info@steen.be
Web: www.steen.be

Sealed Air Ltd

Clifton House, Marston Road
St Neots, Cambs
PE19 2HN, UK
Tel: +44 (0) 1480 184142
Email: europe@sealedair.com
Web: www.sealedair.com

Karl Tichy Handelsgesellschaft mbH

Salaberg 23,
A-3350 Haag
Austria
Tel: +43 664/4433221
Fax: +43 7434/44459
Email: tichykarl@aon.at
Web: www.tichytrading.at

ULMA Packaging

Garibai, 28
20560 Oñati (Gipuzkoa)
Spain
Tel: +34 943 73 92 00
Email: info@ulmapackaging.com
Web: www.ulmapackaging.com

EDITORIAL CALENDAR 2022

1 FEBRUARY

Ordering Deadline: 11 February, 2022
Publication Date: 21 February, 2022

- **IFFA AND ANUGA FOODTEC PREVIEW**
- Slaughtering, Cutting (Blades, Sharpening Systems)
- Skinning, Deboning & Trimming, Portioning, Gringing, Separating, Sorting (Meat and Poultry Focus)
- Conveying Systems
- MAP Trends

2 APRIL

Ordering Deadline: 18 April, 2022
Publication Date: 29 April, 2022

- **IFFA MAIN ISSUE**
- Mincing, Blending,Mixing, Filling, Forming Technology
- Alternative Meat Formulations, Production of Vegetable Products
- Digitalisation, Automation, Industry 4.0
- Hygiene, Disinfection, Employee Sanitation Practices
- Sustainable Packaging Trends

3 JUNE

Ordering Deadline: 13 June, 2022
Publication Date: 23 June, 2022

- **IFFA POST SHOW REVIEW**
- Dicing, Strip-Cutting, Slicing
- Smoking, Air-Conditioning, Ripening Technology, Cooking, Coating
- Weighing, IT Solutions, Process Control, Robotics, Inspection Systems
- Skin and Whole Muscle Packaging Trends

4 SEPTEMBER

Ordering Deadline: 13 September, 2022
Publication Date: 23 September, 2022

- Sausage, Hot-Dog and Ham Production
- Casing, Netting, Clipping, Labelling
- BBQ Trends, Clean Label, Marinades, Sodium Reduction
- Energy Efficient Packaging Equipment's Trends

5 OCTOBER

Ordering Deadline: 10 October, 2022
Publication Date: 24 October, 2022

- High-Speed Cut-up Lines
- Bacon Trends, Thermal Processing HPP
- Chilling, Freezing, IQF Products, Ice Machines
- Production and Packaging of Convenience Food

6 DECEMBER

Ordering Deadline: 5 December, 2022
Publication Date: 16 December, 2022

- IPPE Preview
- Extracting, Processing and Packaging of Poultry Meat
- Food Safety, Hygiene, Air mananegement, Clean Roon Technology
- International Flavour Trends
- Shelf-Life Extension of Packed Meat, Poultry and Seafood

POLAGRA-PREMIERY	Poznan, Poland	14 Jan - 16 Jan, 2022
IPPE	Atlanta, USA	25 Jan - 27 Jan 2022
MeatEx	Toronto, Canada	3 Feb - 5 Feb 2022
Fish International	Bremen, Germany	13 Feb - 15 Feb 2022
Gulfood	Dubai, UAE	13 Feb - 17 Feb 2022
IFE Manufacturing Solutions	London,UK	28 Feb - 2 Mar 2022
Meat Attraction	Madrid, Spain	8 Mar - 10 Mar 2022
British Pig & Poultry Fair 2022	Birmingham, UK	10 Mar - 11 Mar 2022
Food Expo	Athens, Greece	12 Mar - 14 Mar 2022
FOODTEC	Helsinki, Denmark	15 Mar - 18 Mar 2022
ALIMENTARIA	Barcelona, Spain	4 Apr - 7 Apr, 2022
FOOD & DRINK EXPO	Birmingham, UK	25 Apr - 27 Apr, 2022
Seafood Expo Global	Barcelona, Spain	26 Apr - 28 Apr, 2022
Anuga Foodtec	Cologne, Germany	26 Apr - 29 Apr, 2022
FOOD PROCESSING & TECHNOLOGY	Zurich,Switzwerland	10 May - 11 May, 2022
IFFA FRANKFURT	Germany	14 May - 19 May, 2022
VIV Europe	Utrecht, The Netherlands	31 May - 2 Jun, 2022
IPAC - IMA	Parma, Italy	3 Jun - 6 Jun, 2022
CFIA	Rennes, France	3 Aug - 5 Aug, 2022
WorldFood	Istanbul,Turkey	1 Sep - 4 Sep, 2022
FOTEG ISTANBUL	Turkey	6 Sep - 9 Sep, 2022
SALON DE I'ALIMENTATION	Brussels, Belgium	15 Oct - 23 Oct, 2021
SIAL	Paris, France	15 Oct -19 Oct, 2021
CIBUS TEC	Parma, Italy	25 Oct - 28 Oct, 2022
Meat Grill Days	Athens, Greece	12 Nov - 14 Nov, 2021

We reserve the right to make any necessary changes.

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