

MEATINGPOINT

magazine

SUSTAINABLE TECHNOLOGY, PROCESSING & PACKAGING

**THE STRONG
COMBINATION
OF MAN AND
TECHNOLOGY
FOR PURE
ENJOYMENT**



**OPTIMISING PRODUCTION HYGIENE
WITH BACTERIAL BARCODES**

**SALT: TASTE &
HEALTH CONSIDERATIONS**

**REAPING THE BENEFITS OF THE
'DIGITAL SAUSAGE FACTORY'**



Plant-based. Protein-packed. And delicious.

Consumers seeking protein from plants shouldn't have to sacrifice taste and texture. That's why ADM is at the very forefront of plant-based proteins with an ever-expanding portfolio of non-GMO, gluten-free, organic and minimally processed ingredients and solutions. Our unrivaled technical expertise and application support combined with our broad range of on-trend ingredients – including natural colors and flavors – is unique in the industry and makes us the ideal partner to help you innovate plant-based products consumers will love.

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Visit us at: Anuga in Cologne, Germany
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Dear reader,

Dreaming at your desk about your recent vacation? Having trouble concentrating? You are not alone. The lazy days of summer are officially over, and the stark contrast of the joy and freedom of family and friends time with the drudgery of answering loads of emails, can be hard. However, September brings new energy as people begin to focus on what needs to get done before the end of the year. Some even say September is the other January - time to push the "reset" button and make a new fresh start with more business-focused goal setting. This month marks great and purposeful period to get started with excitement on whatever business and professional goals that you put off. So if you're thinking of starting a new routine or a change, beginning a big project, September feels like a natural time to get cracking. It also sets the beginning of the autumn fair trade period too. Make a list of the upcoming trade fairs and discover new trends, new perspectives, and new opportunities, the meat industry sector is offering.



Jenny Smart

To start with Fachpack, to be held from 24 to 26 September 2019 in the Exhibition Centre Nuremberg, the packaging sector is set to offer an outstanding spectrum of products for packaging, packaging machines, and packaging processes, as well as an impressive complexity in packaging and labelling technology and a lot more.

Then in October, Anuga Meat is uniting the who's who of the international meat industry at Anuga in Cologne from 5 to 9 October 2019. With over 1,000 exhibitors from 50 countries the biggest trade show for meat, sausage and poultry in the world is among the most expected fairs. In order to accommodate the demands of the consumers for a healthier diet, more regionality, sustainability and improved animal welfare, in addition to meat, sausage and poultry this year's Anuga will also be focusing on vegan and vegetarian meat alternatives as well as vegetable-based substitute products containing proteins.

Enjoy your read!

Fight food waste with shelf life

A chilled ready meal made with the Micvac system will last for weeks in the fridge – without preservatives! The result is less food waste all the way down the value chain!



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GEA CUTMASTER - FASTEST MACHINE TO PRODUCE HIGH-QUALITY SAUSAGES AND OTHER INNOVATIVE FOOD PRODUCTS

GEA CutMaster, the market leader in terms of speed, is the key machine for producing high quality sausage on an effective way. However, the versatile system can do much more, where ever its needed to cut and mix for example the production of various high-quality end products of the innovative food industry, such as filling mass for dumplings or combined with pasta, protein snacks containing cereals and honey or petfood.

With more than 70 years of experience and the synergetic effects of a world-wide successful company, GEA has set new standards for the processing industry with its GEA CutMaster range. Once invented as the well-known Propeller - Blitz cutter of the family-owned company Krämer+Grebe in Biedenkopf-Wallau (Germany), the CutMaster, which is still produced in this city but in a modern lean organized GEA production plant, has since been further developed.

High Speed and Flexible Production for All Kind of Sausage

The leading models of the GEA CutMaster cuts, mixes and emulsifies all different kinds of sausage products from coarse to very fine. The machine offers a high flexibility via variable cutting speed and highest degree of fines due to extremely high cutting speeds of more than 160 m/s. GEA developed a special feature for more flexibility, named buffle



plate. The plate builds a defined room around the fast turning knife to hold the meat long as possible in the cutting area to receive a very fine emulsion. If customers need to change quickly the system for gentle cutting like for raw sausages the buffle plate can easily turned out.

Optionally, the GEA CutMaster can also vacuum, cook or cool products, so additional equipment will no longer be required. It is also suitable for a wide range of poultry, fish, confectionery, vegetarian products, processed cheese and many basic products in the food processing industry as well in the pet food industry.

Cutmaster Duo - with Second Knife Head Higher Capacity for Raw Sausage

When capacity all come to its limits for production of dry

fermented products like Salami, from coarse to very fine structures, with only one knife head, GEA developed and integrated a second knife head with two independent drives and special knives in one bowl, each with variable speed control.

The production process of raw sausage needs to be very fast and sensitive, so the final salt and starter culture addition has no chance to bind proteins - this would prevent the later ongoing drying and fermentation process.

The meat mix must retain its open structure so that the water content can be reduced during the drying process.

The two independent driven knife shafts with the specially designed raw sausage knife heads enable this fast mixing and cutting process. The raw sausage

recipe mix is ready in two to three minutes, which is an extremely short batch time.

The CutMaster offers shortest processing times, achieving uniform grain size with clean cut and minimal temperature increase.

VSH TopCut Knife Head

The VSH version of the TopCut knife head has been improved in terms of variability, safety and hygiene. It has been made more hygienic by removing grooves and gaps from the closed discs. The fixing bolts are integrated into the support discs. These modifications make thorough cleaning easier. Operational safety has been improved by incorporating a reduced number of support discs which reduces the rotational mass due to less weight on the shaft. Clearly marked support discs avoid incorrect installation, further boosting safety. Every knife can be placed on any possible position. The feature GEA Quick-Lock-Cut

REX TECHNOLOGIE
VACUUM FILLER & PORTIONING SYSTEMS

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www.rex-austria.com

fixes the knife heads with the right tension and pressure with a hydraulic nut. This allows the operation to set the knife in the right tension very easily.

Hygienic & Ergonomic Design

The GEA CutMaster DUO is designed according to the latest hygienic standards, with curved angles and easy access for

cleaning and inspection. From an operator perspective, the machine is designed in such way that the operator has a good overview and full process control at all times, with easy access to the operating panel and infeed and outfeed. The height and scale of the GEA CutMaster DUO is built with the operator's ergonomic needs in mind.

GEA offers fully automated production lines, where the CutMaster can be integrated easily, ensuring consistent high-quality products and minimizing labor costs with full traceability. GEA is recognized worldwide as a leading supplier of complete preparation solutions for processed meat, poultry and fish as well as other products. All GEA technology developments are application-oriented and support customers in optimizing their production sites. With machines from GEA customers are prepared for the future - go with market trends and react very quickly on special demands.

www.gea.com



STAY FLEXIBLE AND KEEP AN EYE ON YOUR PRODUCT WITH MULTIPOND TAILORMADE WEIGHERS AND THE PATENTED ARGUS 3D CAMERA SYSTEM

MULTIPOND's team is targeting to work closely with customers and cater to their specific needs. Company's first exhibit at the PPMA 2019 is a semi-automatic radial multihead weigher, the MULTIPOND SAR. It was designed especially for difficult to convey products making it possible to achieve highly accurate portion weights when piece weights vary widely. The weigher is mounted around the circumference of a traditional Multihead weigher.

Highlights of MULTIPOND SAR System:

- * Customised design tailored to customers' needs and perfectly adjusted to the diameter of the MULTIPOND weigher
- * Standardised interfaces enable easy integration into the production process



- * The software of an SAR and a MULTIPOND combination weigher can easily be linked so both weighers work together as one mixture weigher

- * Difficult to handle products such as sachets or micro leaf can be filled individually into the prefeed hoppers by the machine operator

The "J Generation" has become a synonym for high quality, accuracy and speed in the weighing business. You haven't seen it for yourself? Then you will be excited to learn that MULTIPOND will be exhibiting a 14-head variant, the MPI4-1000-400-J. To get the most out of this weighing system the company will also inform visitors about their patented ARGUS 3D camera system. The system makes it even easier to control difficult to handle products: mapping out the top of the weigher product shortages or excesses can be identified. This information is automatically passed on to the external product feed adjusting the amount of product transported to the weigher guaranteeing an optimal tray occupation. By introducing the ARGUS system the need for operators to alter the settings for different product conditions is eliminated. The ARGUS results in higher efficiency and bags out of the door!



MULTIPOND has been an owner-managed German company since the very beginning. Drawing on more than 70 years' experience in industrial weighing technology, we are a pioneer in this sector. Company's success is based on the high quality and excellent technical standard of our weighing systems. MULTIPOND consciously commit to a high level of vertical integration, as well as production exclusively in Germany. Customer focus has become company's corporate maxim. A team of more than 300 employees commits worldwide to offer our customers from the food and non-food sectors optimized, unique solutions tailored exactly to their requirements at all times. Sales, project planning and service activities are handled by the headquarters in Germany, by the four subsidiaries in France, the Netherlands, UK and the USA and by a worldwide network of agents.

www.multipond.com

A TEAM SPECIALIZED IN QUALITY MEAT BONE SEPARATORS

LIMA which means "Les Innovations Mécaniques Alimentaires" (the mechanical innovations of the meat industry) was incorporated in 1981.

Since that time, LIMA is a specialist in the design, manufacturing and sale of meat bones separators, deboners and desinewers corresponding to the highest EU-USA quality standards.

Thanks to dynamism in innovation, a complete range of machines internationally have been developed.

A Team of representatives and associated companies markets and services the separators in more than 100 countries on all continents.

Today more than 95 % being exported worldwide making LIMA technology a world leader in this field, and illustrate the relevance company's conception of quality in separation.

LIMA's Technological Advantages:

- * the higher end product quality,
- * the highly hygienic design,
- * the very easy operation maintenance and quick cleaning,
- * no pre-breaker needed,
- * the very low temperature rise.

Worldwide sales :

At reception of your product characteristics :

- * Type of raw material,
- * Capacity per hour or per day,



LIMA will advise an optimal technology and type/model of separators, dweboners for ground type meats or desinewers and we will provide you all detailed specifications and information you need to receive.

A local LIMA agent will be looking forward to receiving your questions, and advise you on the advantages of company's technology, technical details and all new developments.

www.lima-france.com



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Caring for Consumers - Responsible Sourcing at All Stages of Production



COMPOUND FEED

Covers All Species of Finfish, Crustaceans & Molluscs



HATCHERY

2+ Million Metric Tons Certified Worldwide



GROW-OUT

Aquaculture Certification in 34 countries



HARVEST

Aquafeed Certification in 29 countries



POST-HARVEST

Chain of Custody Certification in 39 countries



351 Producers under Certification



15 Accredited Certification Bodies



The **only** Aquaculture Certification Standard at farm level recognized by the Global Food Safety Initiative



Consumer Label & Portal for Certified Aquaculture www.ggn.org



Recognized by the Global Sustainable Seafood Initiative to be in alignment with all applicable Essential Components of the GSSI Global Benchmark Tool V1.0.

www.globalgap.org/aquaculture

HYGIENIC CONVEYOR ENHANCES FOOD QUALITY AND SAFETY

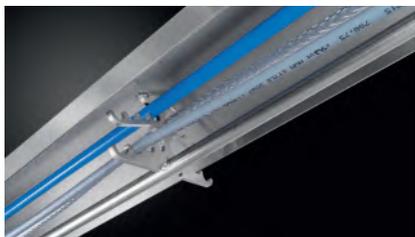
Tray sealing specialist Proseal has developed a new ultra-hygienic conveyor to help food manufacturers meet the highest food quality and safety standards.

The next generation OC Conveyor incorporates a number of unique features that avoid potential food



traps, together with an enhanced design which ensures fast and thorough cleaning during wash down.

The new fully folded construction of the conveyor has removed any box sections or tubing. These are areas where food can sometimes fall or become trapped. In particular,



sealed tubes have the potential for bacteria to develop if the integrity of the tube is breached in any way, for example through a small hole or crack in the weld, since the inside of the tube cannot be cleaned.

Similarly, open wiring looms have replaced the more common wire bundles, removing another potential food trap and providing easier access for the cleaning of individual cables.

A further significant feature is the replacement of moving belts with a new wash-through chain

transport system. This again avoids any food traps and speeds up cleaning as well as eliminating belt maintenance costs.

This latest version of Proseal's proven OC Conveyor retains all its existing benefits including a modular design that allows customers to specify length, width and tray pitch for precise integration into the production line. It is capable of up to 60 packs per minute in single lane configuration and 120 packs per minute in twin lane, providing the ideal complement to Proseal's GT range of tray sealing machines and their various speeds as part



of a fully automated line. A user-friendly, menu-drive control panel ensures ease of operation and fast set-up and changeovers.

The introduction of the new model reflects the trend towards increasingly stringent legislation and retailer standards in terms of food

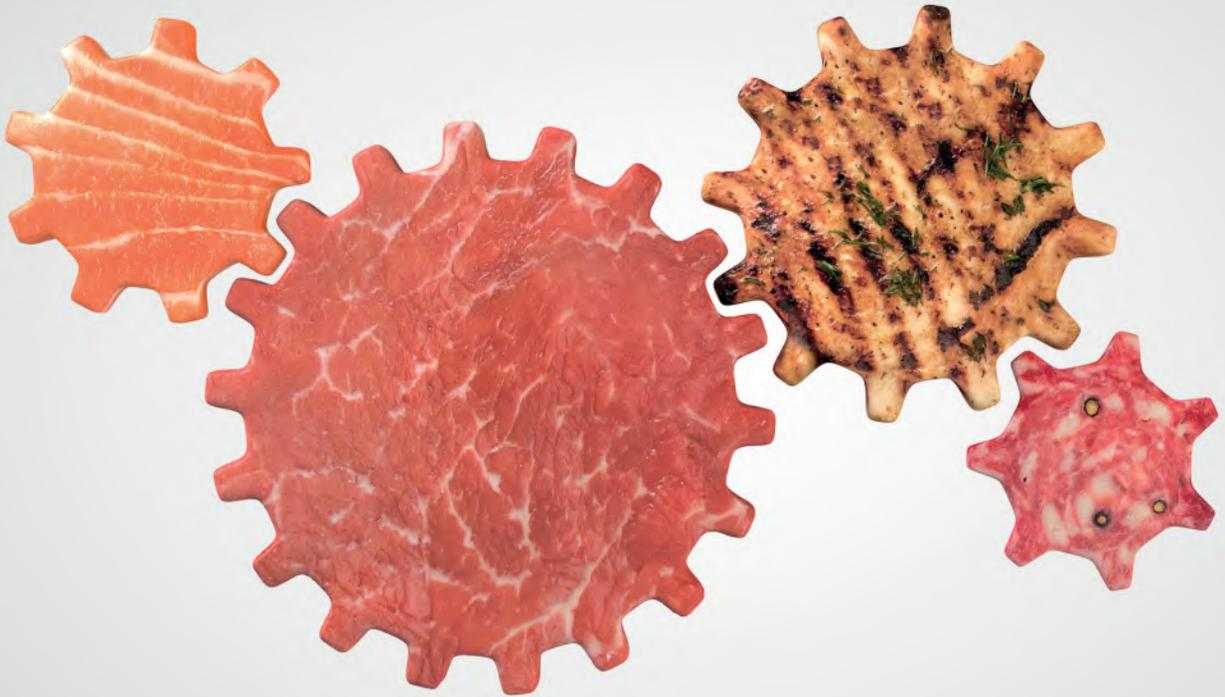


quality and safety, as well as more demanding consumer expectations.

"Hygiene has always been a critical part of our equipment design, and we are always seeking ways to develop this further," explains Proseal director Rob Hargreaves.

"The conveyor is a vital but sometimes overlooked part of the food packing line. By further enhancing the design of our OC Conveyor, we are providing manufacturers with the reassurance and peace of mind of a fully integrated tray sealing solution that enables them to deliver the consistently high-quality foods that consumers have come to expect."

www.proseal.com



Retail ready. Smarter, faster, together.



Every business has challenges; ours is to help you overcome yours. Ishida can help you get your product to market quicker, without compromising quality or compliance. From foreign body and leak detection through to checkweighing, working smarter, faster, together, we can achieve higher standards at every stage of your quality control process.

FOOD INGREDIENTS: THE FUTURE INDUSTRY OF THE 21ST CENTURY

New Hydrosol Book Explains Opportunities, Challenges and Future Nutrition Trends

“With the growing world population, supplying future generations with safe, affordable and good-tasting foods is one of the major challenges of our time,” declares Dr Matthias Moser, Managing Director Hydrosol. In *The Stabiliser People*, which the company brought out to mark its 25th anniversary, Hydrosol talks about conceivable solutions and why the food ingredients industry plays a key role.

The book discusses developments in the food and nutrition industries in the past 25 years, and presents key upcoming trends. For example, trend researcher Hanni Rützler talks about our culinary future in an interview. What foods will be on tomorrow’s menus? How will we eat meals? And what drivers are pushing innovations in food technology? Rützler, the well-known author of the annual Food Report, answers these and other questions. The book provides practical examples, focusing on

forward-looking product ideas in the dairy, meat and sausage, deli foods and dessert categories, along with plant-based alternatives. Readers also get a close look at Hydrosol research and development, and the authors discuss the various product quality requirements of different national markets. Visual presentations of market research on current and future nutrition trends add more interest.

Throughout the many topics addressed by the book, whether food trends or research, feeding the growing world population and the importance of the ingredients industry are never far from the focus of interest. According to the UN Food and Agriculture Organization, by 2050 demand for meat will increase by a time and a half to 420 million tonnes per year, requiring a 60 to 110 percent increase in agricultural output. With this in mind, the importance of alternative protein

Dr Matthias Moser - Morning tasting of current test results



sources quickly becomes clear. Dr Moser comments, “For some time now we’ve been working hard on ideas with high potential to secure adequate supplies of alternative proteins in future. It’s no exaggeration to say that in the past three years we have turned into a competence centre for stabilising and texturing in this area. We’re researching the properties and functions of many different plant proteins. We’re also looking at sustainable concepts for making better use of raw materials, because there is valuable protein not just in filet, but also in by-products like trimmings or whey.”

As diverse as the product concepts are, to be successful on the market there is one criterion they all must meet - they have to taste good. “Ultimately only flavour and texture determine whether a product is purchased more than once,” notes Dr Moser. “A vegan product can have great protein

The food industry in figures



content, be super healthy and trendy - but if people don't enjoy eating it, they won't buy it again. So in my view food technology will be one of the key technologies of the 21st century. It's functional ingredients that make it possible to turn natural, sustainably grown raw materials into attractive products for consumers in all the different international markets. With our system solutions it's already possible to make plant-based products that come very

Hydrosol
The Stabiliser People



close to the flavour, texture and mouth feel of animal products."

It is a fact that food is a very emotional matter, now more than ever; according to trend research it is also more and more a status symbol. The resulting potential for the food industry is clearly shown in Hydrosol - The Stabiliser People, published in German, English, Spanish and Russian by Robert Wenzel Verlag.

www.hydrosol.de

TAKING FOOD FURTHER WITH SUSTAINABLE, WHEAT-BASED RAW MATERIALS



both the ease of processing and added value of this new generation of wheat-based raw materials.

easy it is to produce products with optimised nutritional values using ingredients that are sustainable and eco-friendly.

Proteins are an essential component of a healthy diet. However, increased global demand, along with ecological and ethical concerns, means there is growing consumer desire

These offerings will be complemented by Loryma's base portfolio consisting of Lory® Starch, native and modified wheat starches for the enhancement of bakery, confectionery and convenience products, as well as functional blends to improve coatings, breadings, stability and texture of numerous finished products.

FiE 2019, booth 6G140: Loryma presents wheat proteins, wheat starches and functional blends for multiple, future-proof applications

Loryma, specialist in advanced ingredients produced from wheat, will focus on solutions to meet the world's growing need for high quality, protein-rich food at this year's FiE. With Lory® Tex, Lory® Bake, Lory® Starch and further functional specialities, the company offers a range of options for products such as vegan meat alternatives and enhanced bakery goods, as well as processed foods. Indulgent samples including vegan bacon, low-calorie muffins and high-protein bars will demonstrate

for vegan sources. Lory® Tex textured wheat proteins, being a plant-based protein source, are the perfect solution - improving texture, taste and the nutritional value of vegetarian and vegan alternatives, and many more applications besides. Protein enrichment with Lory® Tex is highly flexible too, as it is neutral in both odour and flavour, with various forms and colours available for use in a variety of food concepts. As part of the company's functional blends portfolio, Lory® Bake Cereal Binder and Lory® Bake Muffin HP allow for the creation of snacks that are high in protein and fibre, yet low in sugar. At FiE, visitors can taste samples demonstrating how

Henrik Hetzer, Managing Director at Loryma, explains: "It is commonly agreed that due to the ever-increasing needs of the worldwide population, forward-looking concepts are urgently requested. Otherwise, the environment, agriculture and food industry will be continually over-stretched. Therefore, our most important guiding principle is to develop high-quality raw materials that support industry and, moreover, offer optimized dietary impact while being sustainably produced."

www.loryma.de

RAPS LAUNCHES NEW SOLUTIONS FOR COOKED HAM PRODUCTS

Building Block System for the Flexible Use of Injection Brines and Seasonings

Cooked ham, cured meat, pork, poultry and beef products are traditional meat classics. Due to their low fat content, cooked ham products also meet the dietary demands of increasingly health-conscious consumers. Nowadays, more and more attention is being paid to both quality and ingredients when meat and sausages are served. RAPS has adapted to this trend: With its latest generation of injection brines for trade and industry, the company has committed itself to the further development of concepts that are as clean, sustainable and functionally convincing as possible. In addition to products for organic cooked ham, a specific VLOG-approved injection brine has also been developed for the industry (VLOG = certified GMO-free according to the German VLOG "ohne Gentechnik" production and certification standard).

The graduated clean combi products from RAPS allow a wide range of different solutions. With the building block system developed by RAPS, finely balanced brines and seasonings can be flexibly combined depending on the application and flavour preference.

The compositions of both RA-LAK injection brines and LAK-TOP seasonings enable the production of exciting cooked ham products, e.g. with barbecue, butter, coffee, Mediterranean, asparagus, umami, juniper or cured meat flavours.

The powder form LAK-TOP seasonings are added directly



to the brine. What makes it even more impressive is that, thanks to the separate dosage of injection brines and seasonings, the intensity of flavour can be individually adjusted. By using the residual brines, particularly economical small-scale production of ham specialties is also possible.

Finally, decorative seasonings provide the perfect appearance and mouthwatering flavour sensations. In addition to various classics with local or Mediterranean herbs, flavourings such as Bacon, Rodeo, Colorado, Marengo or Samba not only add a splash of colour



but also an exotic flavour, while lemon or orange pepper as well

as freeze-dried asparagus add extra finesse.

Besides a well-rounded flavour and an appetizing visual appearance, the focus is always on the perfect degree of succulence. The control of pH is therefore of primary importance, as it is essential for water binding, slice consistency, optimum curing and, above all, the shelf life of cooked ham products. In the development of its new liquid and powder form injection brines, RAPS has paid particular attention to optimum functionality. What's more, the experts at RAPS offer detailed advice on all aspects of cooked ham products, dealing with topics such as meat selection, cutting, yield, slice consistency, brine and injection, as well as injection rates, tumbling and moulding, cooking and cooling. Starting in autumn 2019, seminars covering the topics of "tender and succulent" and the preparation of cooked ham specialties will be held.

www.raps.de

AL SYSTEM PVLS 125 PLUS LINKING AND CUTTING LINE FOR SAUSAGES IN NATURAL AND COLLAGEN CASING

Since the introduction of the first model in 1993, the Handtmann AL system has become synonymous with leading technology in industrial sausage production. From this time on, the Handtmann AL systems have been constantly further developed and perfected by means of innovative features, and they thus still enable excellent productivity levels for the production of fresh, cooked or dry sausages in natural, collagen or artificial casing, coupled with maximum flexibility. The systems' modular design provides a suitable solution

One AL system for semi-automatic casing change of natural and collagen casings is the new AL linking and cutting line PVLS 125 plus for medium-scale producers

technology is integrated with EtherCAT. Separation with the 2-belt solution and sensor for exact identification of the separating point is a highly precise process. This

averts the need for rework and reduces both casing and production costs. With its 2 independent conveyor belts, the cutting technology creates a defined gap between the portions. The cutting sensor detects the gap and guarantees cleanly separated

AL system PVLS 125 plus



for every application. Either with full automation thanks to automatic casing change and slug feed via the casing magazine or with manual casing spooling. Casing changes are of key importance in terms of the cost-effectiveness of a sausage production system, as simple, fast casing changes reduce non-production times, thus improving the productivity of the entire process. Handtmann AL systems enable gentle, safe and highly efficient casing changes for every application.

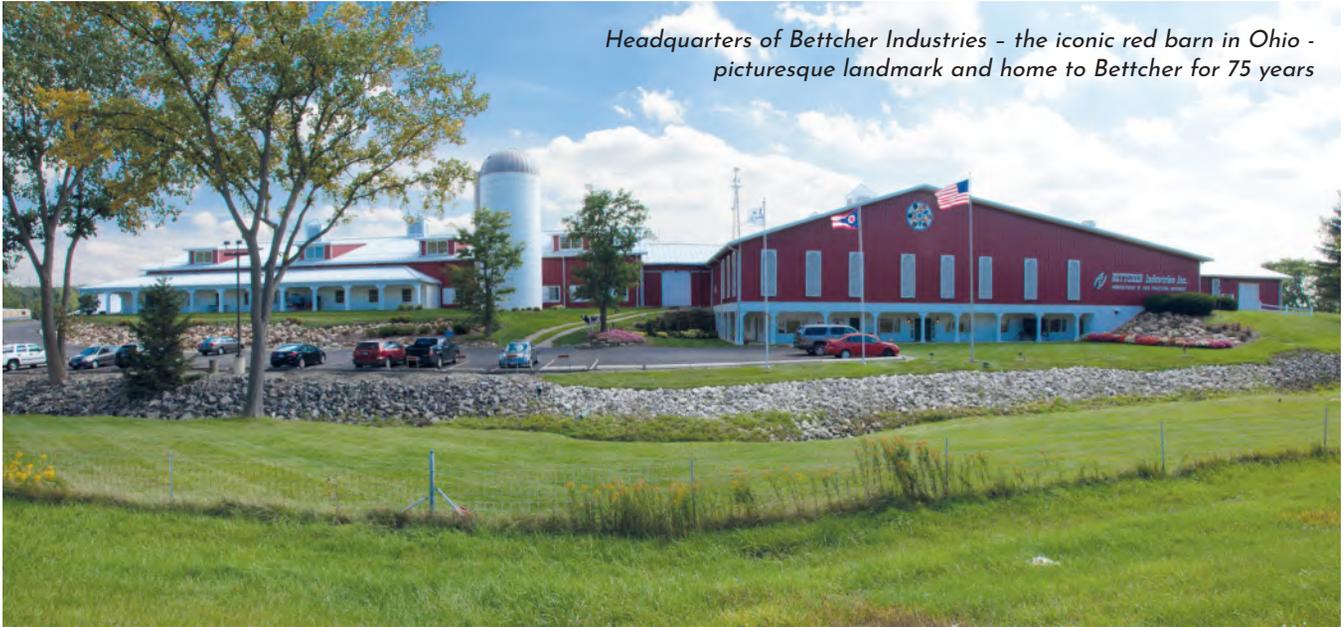
and industrial users. The process includes portioning and linking, voiding, equal lengths and cutting. This new PVLS 125 plus AL system offers numerous new features. The tried and tested system technology including revolver, voider and length unit optimises sausage productions with new extras, such as the casing pusher for natural casing and even faster setup. The optimised parallel voider ensures a plus of up to 800 portions per minute. State-of-the-art, pioneering communication

portions with closed casing ends. Individual cutting provides scope for diversity coupled with short setup times, from fresh products to dry sausages. Separation is possible into individual portions or strings of any desired length. These and many other new plus options means added value for the entire line. Therefore, production performances of up to 1,500 portions/min. in collagen casing from cal. 13 to 40 mm in portion lengths from 40 mm onwards are possible.

www.handtmann.de

BETTCHER INDUSTRIES CELEBRATES 75 YEARS OF TRIMMER EXPERTISE FROM OHIO/USA

Headquarters of Bettcher Industries - the iconic red barn in Ohio - picturesque landmark and home to Bettcher for 75 years



Bettcher Industries turns 75. The world's leading manufacturer of innovative cutting and trimming tools for the meat processing industry celebrated its anniversary at the company's headquarters in Birmingham, Ohio, USA. Larry Bettcher, company founder and former CEO, took present and former employees and their

families on an exciting journey through the history of Bettcher Industries.

Success of a Cutting Tools Specialist

Bettcher Industries was founded in 1944 by Louis A. Bettcher as a repair shop for meat processing equipment. However, as early as 1947, the company moved beyond repairs to present its first tool developed in-house - the Bettcher carcass splitter. From then on, Bettcher was on course for success: the award-winning Whizard® hand trimmer was introduced in 1954 and was soon used throughout the USA. Since then this trimmer has been updated and today is still one of the top sellers in Bettcher's product portfolio. From 1959 onwards, Bettcher expanded internationally. In 1978 the European sales and service subsidiary was founded in Dierikon, Switzerland, and additional branches were opened in Brazil and China. The

Bettcher Innovation Center, which opened in 2017, provides state-of-the-art R&D facilities and ideal conditions for the development of new and innovative precision meat processing tools. Thus, Bettcher continues to excel at delivering high-performance tools that increase productivity and have standout features such as ergonomic, safe and comfortable handling.

Expansion of Product Portfolio

Today, Bettcher has a worldwide customer base that spans more than 70 countries. With the acquisition of Gainco, and in 2019, Cantrell -- two companies that provide systems for real-time monitoring and cutting in the poultry industry - as well as the establishment of Exsurco Medical, a producer of cutting tools for medical applications, Bettcher has again expanded its product portfolio. Now, Bettcher's innovative products not only



Historic view of building

serve the food industry, but also the food service and the medical sector. The multi award-winning company currently holds more than 100 active patents and its handheld trimmer systems have a worldwide market share of over 95%.

Optimized Service with Direct Sales

The most recent step, which is designed to provide Bettcher customers with even better service, and guarantee future growth, is the gradual expansion of direct sales. "After Germany, Great Britain, Ireland and Italy, the Spanish market will also be serviced directly by our European operations from September. For our customers, this means even higher levels of individual and expert support, as well as first-

class service with rapid response times," explains Gregor Thomalla, Managing Director of Bettcher GmbH.



About Bettcher Industries

Bettcher Industries, Inc. is an ISO 9001: 2015 certified, vertically integrated manufacturing company with a worldwide customer base, as well as direct sales and service sites in over 70 countries. The



Gregor Thomalla, Managing Director of Bettcher GmbH, and Russ Stroner, Head of Worldwide Sales at Bettcher

company is a leading developer and manufacturer of innovative tools for the food, food service, industrial and medical sectors.

Bettcher was founded in 1944 and has been successfully bringing innovations to market for 75 years, including nearly 100 active patents.

www.bettcher.com

KAUFLAND MEETS G.MONDINI PAPERSEAL

Thanks to the introduction of the new PAPERSEAL® SYSTEM, Kaufland will save 125 tons of plastic per year for a single product. The concern for the protection of the environment has always been a priority for the Schwarz Group, which has established the REset Plastic program, which provides for various implementation measures on the themes of recycling, innovation and education aimed at reducing plastics.

In this context, its supermarket chain Kaufland will introduce from September 2019 the most innovative solution by G.MONDINI, THE PAPERSEAL®, which is a unique packaging system that allows the use of a cardboard container, covered with a thin

recyclable plastic film for such products as cheese, fresh meats, processed meats, ready-made products, frozen foods, snacks, salads and fruit. The system allows to easily separate the cardboard and the film, which can then be recycled separately following the instructions on the packaging.

The Green Smart Generation has Already Started

The first step will be to obtain the REDUCTION UP TO 70% of the plastic used in the packaging of minced meat. Thus, 125 tons of plastic will be saved each year for just one product, and since the packaging is printed and assembled directly in the meat



Kaufland Verpackung SB-Fleisch

processing companies, transport costs will also be significantly cut, reducing costs and pollution levels. Minced meat in the new package will be available in all Kaufland supermarkets from autumn 2019. Another important successful achievement for G.Mondini SpA!

www.gmondini.com

WEBER MASCHINENBAU AND WIPOTEC EXPAND STRATEGIC PARTNERSHIP

Ever since 1993, Weber Maschinenbau GmbH and Wipotec Group have been working together very closely in the area of weighing and scanning technology. Where the focus of these inspection features so far has been on their use in slicers for the production of meats cheeses, both globally successful companies have now intensified their strategic partnership and are expanding into quality control of the final packaged goods.

With the development of its own packaging machine technology, Weber meets a key demand of today's marketplace and has established itself even more

strongly as a reliable and strong solutions provider. After all, it is the central goal to make customers' lives easier. This works especially well thanks to a deployment of complete and comprehensive solutions from product setup to quality-checked packaging „Expanding our portfolio with well-established equipment from Wipotec for an optimized quality check of our packaging - including process steps like weighing control, checks for foreign objects as well as optical control of all packages - means an optimal completion to our full-system solutions“, explains Jörg Schmeiser, Chief Technology Officer of the Weber Group.

„This expansion of our strategic cooperation is ideal to meet the demands of our customers and provides an opportunity for even more advanced and stronger solutions in the area of slicing applications and in the automation and packaging of fresh products.“

The decision to expand this cooperation with a partner of so many years is rooted very strongly in the core values of both owner-managed family businesses. Furthermore, it mirrors the commitment to true partnership that is felt by benefitting customers as well.

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MAKING SMOKING FIT FOR THE FUTURE INTERNATIONAL CLEANSMOKE COALITION CONGRESS IN HAMBURG



minimising the PAH content in meat products, on 3-MCPD in smoked fish and on the genotoxicity of smoke and smoke flavourings. Other topics include the re-registration of primary smoke products from 2023 onwards, the revision of best available techniques (BAT) and their impact for the industry, CleanSmoke in organic foods and consumer protection and food safety. Furthermore, you can expect an insider report from Sweden, where more than 90 percent of smoked food is already produced with CleanSmoke in an environmentally friendly and resource-saving way.

The fourth CleanSmoke Coalition Congress will take place in Hamburg on October 29th this year and addresses the responsibility for consumers and the environment. At the Hotel Atlantic Kempinski, around 100 participants from several European countries will discuss how smoking can be made fit for the future. Since 2017, the CleanSmoke Coalition has been inviting the industry to exchange views on how food can be produced more sustainably, how a clear declaration of CleanSmoke as smoke can be achieved and benefits for producers, retailers and consumers. In the CleanSmoke Coalition based in Brussels, private persons, companies and associations, that have a professional interest

in smoked food and the smoking industry, have joined forces. Their aim is to make smoking future-proof and make modern smoking technologies well-known throughout Europe. The CleanSmoke Coalition is committed to enable companies to continue smoking despite strict environmental regulations, to ensure that sustainability does not end at the smoking chamber, to guarantee that traditional smoked goods will continue to taste as they have done for centuries and are not harmful to health.

At the CleanSmoke Coalition Congress 2019, toxicologists, chemists, environmental experts, engineers and specialist lawyers will report on the possibilities for

Speakers include Jens Karsten of KWG Rechtsanwälte in Gummersbach/Brussels, Lisa Zastrow of the Max Rubner Institute in Kulmbach/Germany and Dr. Ute Ostermeyer of the Max Rubner Institute in Hamburg/Germany. Frank Quiring from Rheingold Marktforschung will also report on the demands and potential of the "green paradigm shift" in food retailing. A new study has examined the consumer's expectations of contemporary smoking. Among the manufacturers and users of CleanSmoke, we welcome Dr. Benjamin Voß, head of the Regulatory Working Group of the CleanSmoke Coalition, and Peder Fischer, smoking market expert from Sweden.

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THE STRONG COMBINATION OF MAN AND TECHNOLOGY FOR PURE ENJOYMENT

Obere Metzgerei Franz Winterhalter relies on bowl cutters and mixer angle grinders from K+G Wetter. The products of the Obere Metzgerei Franz Winterhalter, which are acclaimed in the truest sense of the word, come from the beautiful Black Forest. Raw, boiled and cooked sausages as well as smoked and cooked ham have been made here with a love of workmanship since 1749. The innumerable awards, which impressively prove the enjoyable quality of the specialities from Elzach, have already become a tradition. Be it within the framework of Süffa, IFFA or quality competitions, over the past decades the Obere Metzgerei Franz Winterhalter has received numerous awards as one of the best butcher's shops in Germany and its outstanding products have been honoured hundreds of times with gold, silver and bronze medals.

*Wendelin Winterhalter,
Managing Director of Obere Metzgerei Franz Winterhalter*



© K+G Wetter

An experienced team of 150 employees, six regional sales outlets, nationwide popularity, high-quality technology and the passionate commitment of the two brothers and Managing Directors Peter and Wendelin Winterhalter are behind the success. "Our butcher's shop is 270 years old this year, and we are leading it in the 9th generation.

That speaks volumes," stresses Wendelin Winterhalter. "He who ceases to be better ceases to be good. My father coined this phrase. And that is exactly how it is. Tradition also means change. You have to preserve what is good, try something new and combine it with your own experience and the skills of your trade."

The Bowl Cutter as the Heart of The Butcher's Shop

The specialities from Baden are known far beyond the borders of the Black Forest. Throughout Germany, butchers offer products from Baden. From the Elzach Hüttenwurst and Bratwurst to the Schwarzwald Luft Salami, the magic touch is required for the production - finely tuned in combination with the powerful use of machines. "The bowl cutter is the heart of the butcher's shop. Together with the artisan intuition, that is what sets our products apart. Of course, the raw materials also play an important



© K+G Wetter



role. But experienced employees and the bowl cutters are especially important. That is why we have been relying on K+G Wetter machines for decades. We are currently using a Cutmix 200 litre bowl cutter and a 130 mm mixer angle grinder," explains Wendelin Winterhalter. "The reason for this has something to do with tradition, if you will. We have the principle of a certain amount of loyalty to our partners. That may be because we Black Forest people are a little conservative. But it has proven worthwhile. If we are convinced of a product, with the people behind it and with the service, then we are all set. This also applies in the case of K+G Wetter. It simply fits, from a human and technical perspective."

Due to the variety of products in the butcher trade, the Obere Metzgerei also needs a bowl cutter that can produce large and small batches in perfect quality. The Cutmix cutting chamber as well as the knife and bowl shape are designed for this purpose. For the

production of raw sausage, boiled sausage and cooked sausage, also for the convenience sector, the Cutmix 200 L with its removable baffle plate brings the advantage of a variable cutting chamber into production. This enables the bowl cutter technician to adjust the bowl cutter optimally to the material to be worked with.

The stable base is formed by the cast iron stand which is completely covered with stainless steel on all sides. "Here, of course, the smooth motion is what counts for us, also in terms of occupational safety," says Wendelin Winterhalter. Thanks to the solid machine stand, the special knife shapes can be adjusted precisely and at a minimum distance from the bowl. This ensures a uniform size, especially when working with fine sausage meat.

In addition, there is the power and drive control for controlling the knife and bowl for production with variably adjustable speeds; the bowl speed range is almost twice as high as that of conventional bowl cutters. The experienced

cutter master Franz Burger also raves about "his" Cutmix: "This is a very reliable machine. Cleaning is quick and easy and the knives can be easily changed with the torque tool." Thanks to the raised bowl edge, the machine is protected from unnecessary contamination even with thin sausages. A large opening in the bowl ensures even more cleanliness and quick emptying of the cleaning water. It automatically moves to the cleaning position. So the bowl runs empty automatically after cleaning. In addition, almost all surfaces of the bowl cutter are bevelled for hygienically reliable water drainage.

Easy Operation and Digital Preservation of Knowledge

The intuitive operation of the bowl cutter takes place using the clearly arranged touch panel. It is also easy to clean. To avoid faulty production, automatic switch-off functions are available for the number of bowl rounds, the meat temperature and the cutting time. "The cutter is also

Ensures simple and self-explanatory cutting: the optimized surface of the touch panel from K+G Wetter.



equipped with the CutControl software from K+G Wetter. This is where we are now, where it makes sense to implement work processes with the use of digital recipe management. This is particularly suitable for a continuous product. Of course, the skills of our cutter masters are also decisive. One experienced employee is about to retire. We want to preserve some of his know-how. I think that the technology supports us very well here”, Wendelin Winterhalter is sure. “Here too we know K+G Wetter will be by our side when it comes to implementation. That’s what a good, continuous partnership is all about.”

Safe Hygiene Even When Mincing

Also part of the production of the Obere Metzgerei is a Mixer Angle Grinder E 130 from K+G Wetter. Thanks to the simple installation and removal of the mixing shaft, the mincer quickly becomes a mixer angle grinder and thus offers more flexibility. The feeder worm can also be removed easily, which simplifies

*Wendelin Winterhalter,
Managing Director of Obere Metzgerei Franz Winterhalter*



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cleaning and visual inspection. Additional safety in terms of hygiene is provided by flushing channels behind the mixing shaft, feeder worm and meat worm.

For homogeneous mixing and red-white distribution, the feeder worm and meat worm work together. This two-worm principle, with the different pitches of the worms, ensures a constant filling flow in the direction of the cutting set. At the same time, the temperature of the material only increases slightly. “The work with the mixer angle grinder runs just as smoothly as with the bowl cutter. And when something does happen - which is really rare - K+G Wetter’s service has always been top-notch over the years and things can get going again quickly,” says Johannes Haiger, production employee at Obere Metzgerei Franz Winterhalter.

Experience and Technology for Future Challenges

In the manufacture of high-quality products, the perfect



© K+G Wetter

connection between user and machine is essential - as in finesse, Wendelin Winterhalter is confident: “Experience is required, be it when it comes to cutting or in other areas. Let’s take salami as an example, for example in the climatized room. Is the humidity right? Is it not right? I go in there every Sunday and then I just smell. I’ll know as soon as it’s right. Our industry is facing major challenges. High-quality, enjoyable results are all the more important. I can only achieve this if everything works together optimally, from the machines to the people. I know that I can count on K+G Wetter - not only on the technology, but also on my contacts and their service. I can just count on it.” With their strong team and the powerful technology of K+G Wetter, Peter and Wendelin Winterhalter and their company are tackling the challenging tasks ahead. They continue to provide real pleasure.

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

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REAPING THE BENEFITS OF THE ‘DIGITAL SAUSAGE FACTORY’

Investment in cutting edge technology, including industry-specific software from food and drink IT specialist CSB-System, has enabled leading Austrian sausage

producer Wiesbauer to be at the forefront of the development of the smart food factory. “It is a big advantage to have one partner and one system that is so closely interlinked,” explains Wiesbauer’s Managing Director Thomas Schmiedbauer.

On their way, scanners at strategic information points read the crate barcodes including the crate number, weight excluding tare, item number and batch number as well as the destination defined in the CSB-System.



The required quantities of meat and fat are calculated during stock removal, based on the relevant recipe details, and retrieved from the high-bay storage at a CSB-Rack. Conveyor belts then take the retrieved crates to the mixing unit for chopping. The next stages are grinding and stuffing, followed by the smokehouse and the fryer and cooker units. At another data capture station, the finished products are entered into the warehouse before they are customer labelled and dispatched.

Error-Free Labels

producer Wiesbauer to be at the forefront of the development of the smart food factory.

“Thanks to CSB, our company is much rationalised in many areas.”

This optimised production is supported by effective data management that ensures a smooth and flawless flow of information. This is particularly important in weigh price labelling, which has to handle Wiesbauer’s great variety of sausage and ham products with

When the company’s facility in Vienna was conceived more than 20 years ago, all the major factors for a smart factory were taken into account during the planning stage. They included paperless information processing, automatic production and logistics processes, intelligent material flow control, and networking with other company locations

Non-Stop Cutting, Batch Processing and Production

The design of the factory ensures a highly automated and therefore fast process flow from cutting to production. Movement of hanging meat to the cutting lines is carried out automatically using CSB software. The meat cuts are placed in E3 crates and transported to the high-bay meat warehouse in accordance with information from Recipe Management.

A strategically important part of this was the integration of all processes into one software system. Enterprise resource planning, labelling, logistics and traceability are all accessed from the same



the need for the correct recipe details and food information regulations to be included on each label.

This is achieved by the central storage of all relevant labelling details in the ERP system. As a result, changes in bills of materials are made available immediately at all locations and result in automatic adaptation of labels. This eliminates the need for time- and cost-intensive double data maintenance, while the risk of incorrect nutrition information or missing allergen information is also reduced.

In addition, central data management facilitates the easy handling of mixed packages where various items with different ingredients are combined in one consumer package.

Well-Prepared for Meetings and Negotiations

The system also delivers a great deal of data transparency that

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provides accurate information to help in the decision-making process, including key performance indicators from production, sales volumes, terms of payment, order rhythms, conditions, rebates, and discounts. "When I'm talking to my customers and conducting negotiations, I want to be able to decide right away whether it's a

deal or no deal," reports Thomas Schmiedbauer. "For this, I can draw on the calculation in the ERP system, its reports and the customer evaluations."

Expanding the "Digital Sausage Factory"

In the future, the current technologies implemented from shop floor to top floor at Wiesbauer will enable further optimisation. Several new digitisation projects will be implemented, the aim of which, according to Schmiedbauer, is a smart sausage factory that is resilient to downtime and can always respond flexibly to the changing requests of customers.

This is what he considers as Wiesbauer's major competitive advantage. "If I cannot rely on my software and technologies, I will not be able to guarantee my services to customers, who I would then lose. This is why continuous digitisation is extremely important nowadays."

www.csb.com



REAL-TIME INSIGHT TO REACH FULL POTENTIAL

Innova Impaqt Shows The Way To Improve Processing



keep recurring, however small their loss may be, it is time for plant management to intervene.

IMPAQT Leaves No Discussion

Innova IMPAQT focuses on reliability. It makes key performance indicators available real-time, highlighting the smallest losses and giving the reasons for them. In this way, IMPAQT cuts out all discussion about why a problem has happened. It allows management to take decisions based on real data, 100% reliable and transparent data from IMPAQT.

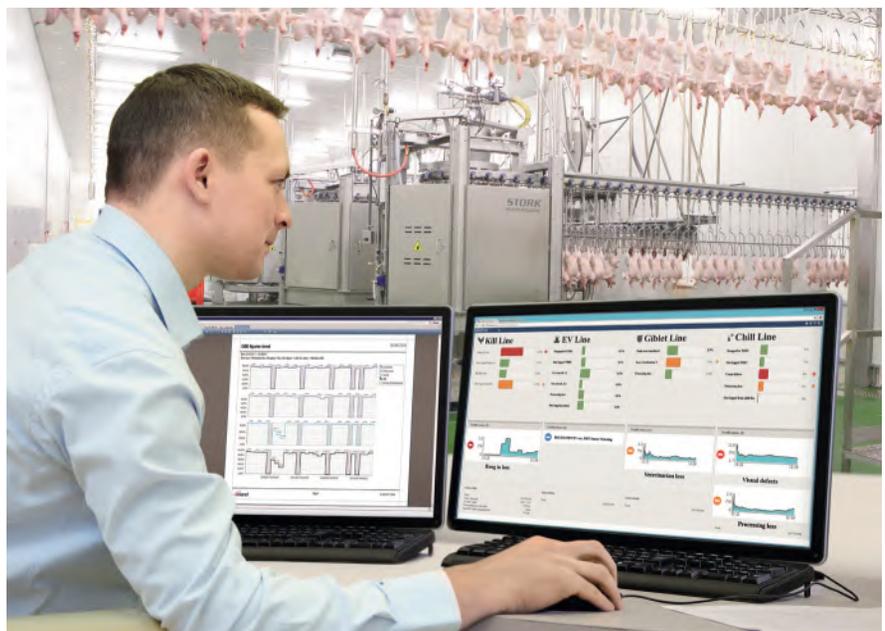
Realtime figures appear on the Innova IMPAQT screen. When a production drop occurs, IMPAQT immediately shows a history graph of the process involved, which helps decide whether the situation is alarming or not. This really goes to show that IMPAQT is a tool for the long term, for indicating actual loss trends rather than one-off situations.

Getting the highest overall effectiveness out of a processing plant can no longer be achieved without solid software control. That's exactly where IMPAQT (Intelligent Monitoring of Performance, Availability and Quality Trends), Innova's overall equipment effectiveness module, comes in: it can pinpoint the smallest undesirable production losses. Even in a very well organized and automated poultry processing plant, IMPAQT can add value.

on estimates, this information is entirely reliable. One-off incidents or isolated malfunctions can always happen and are hard to prevent, but when the same malfunctions

Once installed in an advanced, automated processing plant, Innova IMPAQT is the perfect tool for keeping performance at peak level. In practice, it enables the management to identify and react instantaneously and at the very earliest stage to even the smallest drop in performance, quality or availability.

Almost all equipment in the primary process can feature integrated sensors to measure line performance during production time. By making use of the data from these sensors, IMPAQT can reveal which processes are causing performance losses or line stops. Based purely on solid data and not



Shackling Loss

Shackling loss is an important issue that can be tackled by IMPAQT, as empty shackles are as unwanted as a line malfunction. Every empty shackle at the beginning of the line comes back time and again further downstream in the process. At multiple places in the line, people and equipment will stand still, waiting for full shackles.

Integrating hang-in efficiency levels in IMPAQT means that the data is easier to gather and is available real-time. It is IMPAQT's task to detect whether each empty shackle is down to poor manual hang-in performance or not. If there is a problem with the supply of live birds, IMPAQT should not include the empty shackles caused by this in the hang-in loss figure. This can be done by making use of sensors at the line feed belt. These register the availability of live birds.

Face the Facts

How can hang-in losses be reduced? If IMPAQT shows a similar loss in performance each time a certain shift changes, the employees involved can be shown the graph. Data based on hard fact should be enough to motivate them to perform better. This goes to show that IMPAQT makes everyone face the facts, facts which leave no room for further discussion. "This is a splendid example of how IMPAQT can monitor and analyze even the smallest details in order to reach full potential." says Dirk Kuijpers, Innova IMPAQT project coordinator

Corrective Action

IMPAQT goes even further than the usual OEE type systems, as it not only flags up real-time losses, but can zoom in on specific problem

areas such as the defeathering or EV-line to find the reasons for these losses. This high level of production control makes it

easy for processors to identify opportunities for improvement and to take corrective action quickly.
www.marel.com/IMPAQT



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OPTIMISING PRODUCTION HYGIENE WITH BACTERIAL BARCODES

By Steffen Lyng Jørgensen and Tomas Jakobsen

With its long tradition of producing top quality food efficiently and maintaining high standards of food safety, Denmark has established a solid international reputation for its food products. In order to retain its leading position in terms of food safety and products of high quality, the Danish food industry must constantly assess the potential for new microbiological methods. The aim is to establish faster, easier, more accurate and cheaper analyses.

Sequencing of DNA Reveals Every Bacteria

DNA-based methods have become a well-established means of identifying microorganisms. These methods include analysis of the 16S rRNA sequence, which is a kind of bacterial barcode which makes it possible to identify virtually every bacteria present in a product, or in a production environment. DNA sequencing has previously required expensive equipment and highly specialised staff. In recent years, however, sequencing technology has experienced such significant growth that the DNA sequencing analysis, including the equipment,

is now so cheap and fast that it is of practical relevance in a production context. User-friendly sequencing equipment and real-time analysis of DNA sequences, make it possible to obtain results in a matter of hours.

Traditional Bacterial Control

Traditional culturing methods are generally used for only a small number of microorganisms that are commonly considered to be the most frequently occurring shelf life-limiting bacteria. The problem with these culturing methods is that they are laborious and, more importantly, that they are only used to determine the presence of specific organisms. Therefore, other shelf life-limiting bacteria may still be present in the product. You only obtain answers to the specific questions you ask, and how could you know in advance which naturally occurring bacteria are present in the production environment? The answer to this lies in sequencing of bacterial DNA.

Sequencing for Process Control

In a production context, it can be challenging to identify which bacteria are capable of limiting the shelf life of a product, since it is not always clear which bacteria

need to be identified and where in the process the contamination occurs. Using 16S sequencing, the Danish Technological Institute has investigated the bacterial composition of MA-packed cold cuts, both when freshly produced and then after expiry of the shelf life. It was observed that the freshly produced products contained a broad spectrum of bacteria, whereas the products whose shelf life had expired were dominated by just one or two bacterial species that had been capable of multiplying



in the packages throughout the shelf life period. Furthermore, the investigation showed that several of the bacterial species that had been found after expiry of the shelf life, required special culturing methods. Therefore, they would not normally be found in meat products and nor would they be perceived as important spoilage bacteria. Subsequent special culturing of the dominant bacteria confirmed that the expired products contained high levels of the identified bacteria.

This new knowledge makes it possible to target the bacteria



that limit the shelf life of a given product. In future, samples taken from the production line will be able to indicate whether these bacterial species originate from a specific point of contamination in the production chain, or whether the bacteria have been present in the raw material right from the start. If the bacteria are present in the equipment, additional or specialised cleaning can reduce accumulation of the bacteria, thus preventing potential contamination of the products.

No Two Production Environments are Alike

During process control, 16S sequencing can be used to reveal differences in the bacterial composition in products, production facilities or equipment, at different time points during a production period or in physically separate production areas. The Danish Technological Institute has compared the bacterial composition in products produced in the morning and in the afternoon at two different companies. The investigation showed that the products from one of the companies had a statistically different bacterial composition, depending on whether the products were produced in the

morning or in the afternoon. At the other company, the products had the same bacterial composition in the morning and in the afternoon. It was therefore possible to demonstrate that at one of the companies there were factors that had an impact on the bacterial composition of the products during a production day. Regular analyses of the bacterial composition can reveal a lot about a product. For example, they can demonstrate whether changes, such as, work shifts, seasonal effect, the place of origin of the raw material and changes in processes and cleaning procedures, have an impact on the bacterial composition within the production environment and products. Therefore impacting on the quality, including the shelf life, of the product.

Perspectives and Challenges

At the Danish Technological Institute, both 2nd generation (Illumina) and 3rd generation (Oxford Nanopore) sequencing technologies are used in R&D projects to identify the bacterial composition in products, production equipment and production environments. Sequencing with Oxford Nanopore is the latest technology in DNA

sequencing. The instrument called 'Minion' is not much larger than a mobile phone. Using Minion, sequencing and analysis can be performed in real-time, making it possible to conduct sequencing on site rather than having to send the samples to a state-of-the-art sequencing laboratory. Therefore, it will be possible to obtain the sequencing results in a matter of hours. However, there is still the challenge of having to pre-process the samples before they can be sequenced, and this takes time. The bacterial DNA must first be extracted so that it is representative of the sample. It must also be extracted in large, high quality quantities to allow it can be measured accurately.

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SALT: TASTE & HEALTH CONSIDERATIONS

By Henk Hoogenkamp

For years, it seemed that marketing low-sodium foods was a thing of the past, when suddenly low-sodium and reduced-sodium food re-appeared in the limelight. That change is partly due to the Centers for Disease Control and Prevention (CDC) and the Institute of Medicine, along with proactive food companies that have weighed in on the urgent need for sodium reduction.

Salt is an essential nutrient for the human body. The big question is, “how much?” Sodium, potassium, and calcium salts are essential for: nerve cell activity, muscle movement, and the osmotic balance of body fluids. Since the beginning of agriculture and farming 8000 years ago, salt consumption has remained relatively stable. In the last 50 years, however, the use of salt has skyrocketed primarily due to the significant increase in the consumption of processed foods and meats.

Salt (sodium chloride and potassium chloride) is essential for human health and development, particularly for regulating the body’s electrolyte balance, preventing dehydration, and maintaining cellular functions.

However, excessive sodium intake can be considered a key component of the diet that is related to high blood pressure and its many subsequent medical conditions. There has been a profound change around the world in risk factors associated with death since 1990. Back then, the biggest risk factors were child and maternal malnutrition, unsafe water, and

lack of sanitation. The situation has now changed drastically on a global scale. The most important contributors to the overall burden of diet are high sugar, low fruit, low vegetables, low wholegrain, low nuts and seeds, as well as high sodium.

Dietary sodium reduction is important for those with hypertension, heart conditions, and certain types of kidney and liver ailments. Certain ethnic groups and older people might want to restrict their salt intake. Most people consume far more than the 5g per day recommended by the WHO. An average table salt intake of 8g to 12g is quite normal in Western countries - an amount that has not changed in a decade.

The Social Status

It is critically important to reformulate processed foods and significantly reduce high levels of salt. However, it is true that increasingly people of all socio-demographic status are consuming increasing amounts of highly processed foods.

Convincing evidence shows that there is an association between salt intake, income, and educational status. People of a low-income background typically eat more salt than those with higher incomes, which can subsequently contribute to a lower life expectancy. The health benefits of lower salt foods have not reached those who need it most. Perhaps the only way to stop unhealthy salty junk food is

for Governments to interfere and mandate specific salt levels for certain food or food categories

Children and Adults Alike

In the US, nearly 90 percent of young adults aged 19 and over eat more sodium per day than recommended by the 2015-2020 Dietary Guidelines for Americans. The Dietary Guidelines



for Americans recommends adults consume less than 2,300 mg per day of sodium, which is the upper limit for people ages 14 and older set by the Institute of Medicine.

Salt consumption by Chinese adults is consistently ranking above 10g a day. This is over double

the recommended limit of 5g (Queen Mary University, London, July 2019). The recommendations are lower for children younger than 14. These recommendations are in contrast with the Lancet publication August 2018, advising a moderate sodium intake range of 3 to 5g/day (3,000 - 5,000mg/day). Lowering sodium intake from average levels of 3,000 - 5,000mg/day, will not result in a benefit against cardiovascular disease or mortality, and might even be harmful.

It is also true that increased salt consumption in children can contribute to raising blood pressure, subsequently predisposing them to high blood pressure and diabetes type 2 as adults later in life.

Monitoring Salt

On a molecular weight basis, sodium chloride is 39.34 percent sodium and 60.66 percent chloride. For example, 100g of NaCl contains 39,34g Na and 60,66g Cl. Table salt is the most common and consists of one atom sodium combined with one atom of chlorine representing an equal amount of ions. It is the general term for a compound from the neutralization reaction of an acid and a base. These ionic compounds dissociate completely in water. The US Food and Drug Administration (FDA) standards allow regular table salt to contain up to 2 percent additives like anti-caking agents and processing aids.

From a government point of view, regulating salt is more complicated than it might seem. Many traditional foods like pickles have high salt levels, which will make mandatory federal standards difficult to implement. Most

probably, a voluntary initiative to reduce sodium is the smart way forward.

Policymakers tend to take a precautionary approach in recommending a uniform sodium intake across the population. Salt reduction generally bodes well for the at-risk or subgroups. To balance the discussion, there are downsides of cutting salt intake: it also tends to increase levels of cholesterol, triglycerides, and hormones.

The effects of increasing sodium intake on raising blood pressure, become worse as sodium intake rises above 5g per day, especially among people who already have high blood pressure or who are older than 55. While there has been much focus on reducing salt intake, an important and often ignored approach to lower blood pressure is increasing the amount of potassium consumed. Sodium is an important contributor to high blood pressure, one of the leading causes of heart attack and stroke.

Moderation and a balanced approach are likely to have the greatest benefits in lowering blood pressure. This can be achieved through moderation in salt intake combined with eating fruits and vegetables. Rates of strokes, cardiovascular death, and total mortality decreases with increasing potassium intake, and thus diets rich in vegetables and fruits that are naturally high in potassium will serve as a protection mechanism. Additional translational research activities are needed to determine the acceptable range of sodium intake for optimal health. This evaluation should include research that indicates health risks for people who consume too much

sodium, as well as health risks from consuming too little sodium.

It should be pointed out that insufficient sodium intake also has other associated effects, including adverse elevations of certain hormones that are associated with increased risk of death and cardiovascular diseases. Those with the lowest risk of death and cardiovascular events are people who consume moderate amounts of sodium - 3,000mg to 6,000mg per day- with an increased risk above and below that average (New England Journal of Medicine, August 14, 2014). For healthy people, salt reduction might indeed be a double-edged sword.

Instead of reducing sodium intake in all populations, sodium reduction strategies should focus on consumer segments with high levels of sodium consumption exceeding 5,000mg/day. Perhaps the best way forward is to generally ease up on sodium restriction, and focus on improving overall diet quality instead.

To be on the safe side, there is strong evidence that population-wide salt reduction may be associated with lower incidence of heart disease and stroke. For now, the sodium reduction debate among academics continues.

Sodium: In Everything and More

Before sodium intake can be reduced, it is essential to know the sources. Salt is probably the oldest and the most widely-used food additive. Although salt addition to food is of great culinary importance, it can cause numerous health problems if consumed in excess. Too high consumption is associated with

high blood pressure, obesity, cardiovascular disease, and osteoporosis.

Traditionally, the savory and zesty food products, such as soups, seasonings, canned vegetables, noodles, and pizza, contain high levels of sodium. Balancing consumer demands for healthier food with consumer's taste can be a complicated exercise. During the last few years the legacy food companies have struggled with slowing sales as consumers increasingly shun over-processed packaged food that they perceive as unhealthy. Especially millennials who are attracted to natural and locally-sourced foods, are accelerating the shift. On top of that, legacy food companies want to be perceived as proactively changing the product formulas to gain strategic marketing positions, and to avoid government implemented sugar taxes and salt cap regulations. This is a careful scripted exercise, as these food companies don't want to do anything that might cause consumers to stop purchasing their brands.

Reducing salt (sodium chloride) in processed food and processed meat products is easier said than done. The majority of the salt eaten comes from the salt hidden in processed foods, such as bread, pasta, pizza, soups, and canned vegetables. And yes, also plant-based meat alternative products often contain excessive levels of salt.

Many times, when the taste and flavor of food falls flat, the answer lays in adjusting the salt level. No question that salt has a greater impact on flavor than any other ingredient. As a matter of fact, the relationship of salt to

food is multidimensional: it has its own distinctive taste, and it simultaneously balances and enhances the flavor of other ingredients.

Clean and Green

Health advocates and medical experts are now often challenging time-tested additives and ingredients like salt, phosphate, and nitrite. The removal of these components might have unwanted technological side effects, such as the increased risk of oxidative rancidity, unattractive discoloration, and shorter shelf life.

Evaporating water from saltwater brine produces all salt crystals. Common (table) salt often contains iodine (which makes it taste slightly metallic) and an anti-caking agent (i.e. silicones) to prevent clumps. For flavor purity, kosher or sea salts are better taste options.

In order to meet consumers' expectations for clean labels, it is now quite common in the US to use a blend of sea salt and celery powder in premium processed meat products like hotdogs and bacon. Such a blend can eliminate the need for synthetic curing agents like nitrates and nitrites. The latter -of course- depends on the specific legislative rulemaking. By replacing these chemical artificial additives with natural alternatives, people can expect greater transparency when it comes to what's in the food they eat.

Salt Sources

Processed foods, not the saltshaker, are obviously the source of most of the dietary salt consumed on a daily basis. An estimated 70 percent of total dietary sodium chloride (NaCl) intake comes from processed foods, such as

canned soups, bread, snack foods, deli meats, cheese, condiments and - surprisingly - muffins and donuts. To be fair, sodium is not only added to boost flavor but also to improve texture and leavening.

As a reference: sodium found naturally in food is only 14.2 percent of the daily dietary intake, followed by 5.6 percent added while preparing at home, and 4.9 percent via the salt shaker. Sodium in home tap water, dietary supplements and antacids contribute less than 0.5 percent. (American Heart Association Journal Circulation, May 2017).

Salt and Junk

The current increase in diet-related diseases requires a repositioning of fat and sodium content in processed food, formulated soft drinks, and most fast foods, including processed meats and formulated plant-based meat alternatives. To be fair and balanced, it needs to be pointed out that sodium chloride is closely intertwined with important sensory properties and functional benefits.

Many world societies', including the UK, US and China are consuming dangerous levels of sodium, most often found in processed or restaurant food. In China, most of the salt is added during their own meal cooking preparations. There is little doubt that eating many types of processed foods can be classified as junk food, the consumption of which can become addictive. Salt and fat are especially pleasing to the mouth-feel. With the addition of crunch and sugar, it becomes hard to control compulsive eating.

There is no doubt that there is a clear and consistent correlation

between marketing of products high in fat, sugar and salt and the dietary habits of (young) people. Curbing exposure to junk food advertisements on TV and streaming platforms can be an effective tool to help people make healthy diet choices, thus contribute to reducing obesity and diseases like diabetes type 2.

Going Forward

The food and meat industry has been working to reduce levels

In other words, to select a stealth approach.

- ▶ Maintain the salt perception but reduce the sodium and substitute with potassium and small amounts of magnesium.

A Gradual Decline

Part of the problem is that salt provides important benefits for processed-food manufacturers and meat processors. Salt is a cheap ingredient that is ideally

industry to lower the sodium content in food products overnight. Aside from the fact that consumers are accustomed to a certain flavor profile, many technical hurdles in removing salt from food formulations are still unsolved.

Salt might have a negative perception, but if a product is labeled as “sea salt,” consumers have a very favorable opinion. Sea salt is naturally rich in potassium chloride and other minerals. According to the Innova Database, more consumers are using sea salt at home, and new products containing sea salt are routinely being introduced.

Bring It On

Although most consumers believe that low-sodium products are inferior in taste, it is true that taste preferences may change as the amount of salt is gradually changed over time.

There are a few solutions to decrease sodium content without notably changing salt perception:

- ▶ Using smaller salt microspheres can make more sodium available in the mouth for tasting. Only some 30 percent of salt is perceived when food is eaten; the balance is simply swallowed. When smaller microspheres are used, the surface area increases substantially while it dissolves faster and improves the interaction with the tongue, thus, obtaining a greater salt perception.

- ▶ Combining sodium chloride with aromas like vanilla extracts may boost the salt perception. This is also true when typical umami compounds, such as soy sauce, green tea, and Parmesan are used to simulate salt enhancement.



of salt (sodium chloride) over the last ten years. There is much more to be done to achieve the new nutritional and regulatory targets for further reduction. There are two distinct approaches to accomplish sodium reduction:

- ▶ A gradual reduction in the perception of saltiness by consumer.

suitable to extend shelf life. It also enhances flavor, improves texture, and serves as an ideal masking agent for bitterness. An added problem is that many people would say no when asked if salt reduction or elimination means switching to an alternative synthetic or chemical additive. It is unrealistic to expect the food

▶ A sodium-and-potassium combination can be used in the same crystal or grain. Such a combination performs just like regular salt with little or no bitterness.

The typical food supply in the Western world makes it difficult for consumers to choose lower sodium foods. Of the average daily intake of 3,800mg a day, about 70-80 percent comes from commercially-prepared and purchased foods. This number equals a total daily salt intake of 7,6g.

Sodium Intoxication: The Medical View of Prehypertension

Pre-hypertension is the grey area between normal (under 120/80mm/Hg) and high (over 139/89mgHg), which is also a reason for concern. The condition especially affects an increasing number of young people. Studies indicate that in the ageing Western countries, nearly a quarter of women ages 20 to 44 are pre-hypertensive.

There is a strong correlation between salt intake and blood pressure. In nearly all cases, a low sodium diet shows an almost immediate decline in blood pressure. Salt is a contributor to high blood pressure, which has been linked to higher risk of heart attack, brain hemorrhages or stroke -the leading causes of preventable death. Hypertension -known as high blood pressure- affects more than one in three adults' aged 25 and over worldwide. This equals about one billion adults.

There is a genetic disposition to develop hypertension. High salt intake, high-calorie foods, lack of physical activity, and alcohol consumption all play an important

and decisive role in the increase in hypertension. Associated with hypertension are increased risks of developing kidney failure and blindness.

Renaissance Potassium

The importance of minerals in the daily diet is enjoying a renaissance with a twist -this time, there is more than just anecdotal evidence, with strong scientific confirmation giving new impetus to the important role of potassium. People in the last few decennia have not only over-consumed sodium, but have also under-consumed potassium. The scientific data supported by EFSA and FDA recommends this mineral to maintain normal blood pressure, muscular, and neurological functions in the body.

To put the discussion into perspective: There are physiological consequences to consider when consuming too little sodium. At decreased levels of intake, triglyceride levels increase, as well as insulin resistance and the activity of the sympathetic nervous system. All of these factors can also increase the risk of heart disease. It may be concluded that sodium reduction is an issue of potential harm for subgroup populations, rather than a generalized recommended daily sodium intake.

Contrary to sodium consumption, potassium intake via dietary intake needs boosting. Dietary potassium

can lower blood pressure by blunting the adverse effects of sodium on blood pressure. Besides these important functions, potassium nutrients are also associated with reducing bone loss and preventing the risk of developing kidney stones. Hence, it is likely that the nutraceutical food industry will develop special fortification foods containing tripotassium citrate and potassium gluconate to boost diet absorption of this important natural mineral.



Several factors are correlated with the reduction of blood pressure following increased potassium supplementation. Preferably, increased potassium fortification intake should be done via whole food coupled with a salt (sodium chloride) reduction to achieve the benefits of an optimum sodium/potassium balance. Increasing potassium intake can be obtained by selecting foods like vegetables, fruits (bananas) and nuts.

Dietary potassium intake will not only delay elevated blood pressure levels, but also delay or defer the need for antihypertensive prescription medication. The World Health Organization (WHO) recommends a daily potassium intake of a minimum of 3.5 gram.

Sidestepping Phosphate

Phosphates are frequently used for technological reasons - as acidifying agents, acidity buffers, emulsifying agents, and for intensifying flavor. Phosphate is present in many processed foods like soft spreadable cheese, meat products, beverages, canned and frozen vegetables and soups, as well as baked goods. Natural phosphate esters are also typically present in protein-rich foods like lean meat, and are broken down slowly in the gut before being reabsorbed into the body.

The huge increase in processed food consumption has triggered the use of added phosphate, and it is estimated to have doubled from 1980 to 2012, from below 500mg a day to 1000mg a day. Most food legislation rules do not require quantification, but simply identify the presence of phosphate or its E-number on the food label. According to the Department of Agriculture data from 2006, the average phosphate intake for American males and females over two years old is 1,334mg. The Recommended Daily Allowance is 1,250 for pre-teens and teenagers and 700mg for adults, with a maximum tolerable level set at 4 grams per day (Emory University, March 2010).

Phosphates that are added in inorganic form to foods like meat; dairy, bakery, and cereals

appear to cause higher spikes in blood phosphorous levels than naturally-occurring (organic) phosphates. Too much phosphate is a concern for people who are healthy, but it is also of special concern to people who already have kidney damage or chronic renal disease. Typically, the most significant increase in blood phosphate levels occurs in people who eat dairy foods and cereal/grain-based foods that contain artificially-added (inorganic) phosphate (American Journal of Clinical Nutrition, July 2015).

Recent research indicates that elevated serum phosphate intake is possibly correlated with mortality in people and may cause organ calcification in renal (kidney) patients -a correlation between high blood phosphate and cardiovascular disease in healthy people (Deutsches Artzeblatt International 2012).

It is expected that phosphate additives used for meat and food manufacturing will regain new discussions. Apparently in Germany, the use of phosphates in processed meat products is strictly regulated and even forbidden in most meat products. In most countries, the use of phosphates is (vaguely) regulated to inclusion levels up to 0.5 percent.

In the processed meat industry worldwide, salt and phosphate are probably the most frequently-used additives in nearly all categories: emulsified, coarse, enhanced, and whole-muscle meat products. Perhaps the time has come for the food and meat industry to label the presence of added phosphate not only qualitatively but also quantitatively.

It is necessary to distinguish between natural (organic)

phosphates and chemically-derived phosphates. Natural or organic phosphates are mainly found in protein-rich foods like meat, fish, eggs, and dairy. These naturally-occurring phosphates are slowly broken down in the gastrointestinal tract and gradually re-absorbed into the bloodstream from the intestines. In a typical diet, about 50 percent of these organic phosphate esters are re-absorbed this way.

In contrast to organic phosphate, industrially-processed foods have much higher levels of added phosphate to obtain certain product modulations and cost advantages. For example, chemically-derived phosphates are used as preservatives; yield-manipulating agents, acidity buffers, and emulsifying support, as well for intensifying flavor and reducing warmed-over-flavor in cooked meat products. Phosphates are also frequently used as "melting salts" in spreadable cheese, not to mention in sodas and many forms of frozen food.

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Q. How would you evaluate IFFA 2019? What impressed you the most?

We had a lot of good, quality leads. We were happy to see that many of them were German companies since that is one of our focus markets. There's a huge interest for fresh ready meals. Also impressed by the increased focus on sustainability amongst all exhibitors.

Q. Sustainability has become a major factor in the decision making process of consumers. What kind of solutions, technologies and products did you present at IFFA? What sets you apart from your competitors?

A solution to produce chilled ready meals in a better way. A sustainable process without

preservatives and a natural vacuum that offers possibilities to get better quality but at the same time prolong the shelf life and reduce food waste.

Q. What's your understanding of circular economy and sustainability? What do you offer in terms of plastic and packaging reduction?

Our packaging combined with the Micvac method of in-pack cooking and pasteurising prolongs the shelf life considerably. The result is a minimum of food waste which is a huge problem in this category. We always try to consider the different parts in the total value chain, i.e. how the packages work in production and transportation; how easy they are to handle in retail and also for the consumer.

The packaging material is 100% recyclable, according to the EU Framework Directive on Waste.

Q. What's your company's greatest achievement in terms of sustainability? What are your future sustainability goals and the challenges your company & the meat packaging industry are facing?

One of our challenges is to find an alternative to the plastic trays. This is because we have a package that is active in our process with functions that enables in-pack cooking and pasteurising with a long shelf life, up to 60 days even without preservatives. We need to find an alternative that performs without compromising on shelf life (and food waste). ●

Lars Povlsen

*Sales Manager
TOMRA FOOD*



Q. How would you evaluate IFFA 2019? What kind of innovations did you showcase at the fair?

We showcased the TOMRA QV-P, a unique patented detection system for poultry meat with this abnormality known as "muscle myopathy" or "wooden breast", can now be reliably sorted out. The system thoroughly scans the continuous product flow, classifies the meat in real-time and ejects flawed breast fillet. The system can be integrated into existing lines or used as a stand-alone version. The TOMRA QV-P is the perfect addition to our portfolio for the poultry business and we were pleased to demonstrate to our customers how we are meeting the industry's demanding requirements. We also showcased TOMRA's high-tech optical

sorting solutions for petfood, a first in the industry.

Q. What makes your solutions unique and what differentiates you from your competitors? What's your unique selling point?

Our solutions are extremely reliable and have low ownership costs, which also makes them attractive to small and medium-sized manufacturers. Our efficient machines keep manual labour and sorting to a minimum.

Q. How do you ensure resource efficiency and sustainability of your equipment? What sets you apart from your competitors and how would you define your unique selling point?

Resource efficiency and sustainability means a better use

of raw materials, that practically is equal to a better knowledge of their quality and composition. TOMRA provides easy to use solutions that give processors the ability to standardize or sort based upon a consistent and continuous knowledge of 100% of their production and also to keep full control of final product quality.

Q. What's your company's greatest achievement in terms of sustainability?

What are your future sustainability goals and the challenges your company & the meat processing industry are facing?

Meat industry challenges are numerous, and the ever-growing earth population increases demand. As well as a better use of resources, request for a high-quality product pushes all parties to always tighter tolerances in products composition, product defects detection and foreign objects. This is where TOMRA works hard in a partnership with the industry. Poultry QV-P projects is to cover all identified and future defects, projects for meat is to cover all possible foreign materials. Not only for the sake of the final consumer, but also as a feedback to farming and animal welfare. ●

FULLY AUTOMATED, HIGH-PERFORMANCE LINE WITH SEALPAC A8 TRAYSEALER: INCLUDING BRAND-NEW MA-S DENESTER



SEALPAC A8 traysealer with high-performance MA-S800 magazine denester Capable of producing up to 140 trays per minute.

Minced meat has a market share of around 50% in the self-service segment. If you want to remain in business here, you need extremely efficient and high-performance equipment. SEALPAC A8 provides the answer. This high-output traysealer can now be combined with company's brand-new MA-S series of servo magazine denesters for a highly reliable packaging process.

The SEALPAC A8 traysealer combines highest performance with best packaging quality and economical use of consumables. It reliably processes all sealable materials. In double lane execution, the A8 will achieve outputs of up to 120 trays per minute, depending on tray size and material. Moreover, it guarantees optimal production standards without quality fluctuations. Like all other A-series traysealers, the A8 combines variable sealing

pressure with an exceptional clamping force of the tooling, hence always providing a reliable seal for optimal product safety.

Low-Maintenance Servo Drive

SEALPAC A8 is equipped with a servo-driven lifting system, which has become a standard for high-output mono lines. Even after running millions of cycles, this piece of equipment still has the highest level of reliability, for example with regard to

product safety and packaging functionality. Owing to its flexibility, the SEALPAC A8 is also easily integrated into existing production lines, especially where it concerns high-performance applications.

New: SEALPAC MA-S800 Magazine Denester

A perfect addition to the SEALPAC A8 is the compact and fully electric MA-S800 magazine denester, which can keep up with the performance of the traysealer. Owing to its innovative airless concept, this new denester requires no technical connections other than electrical power. Equipped with servo drive, it achieves an unparalleled denesting result. The new MA-S800 has been designed according to the latest standards in technology and hygiene. Due to its C-shape, the system is easily integrated in new and existing lines. For even more output, this new type of denester is also available as a larger model: MA-S1200.

www.sealpacinternational.com



SEALPAC modified atmosphere pack for minced meat Hermetically sealed for optimal shelf life, yet easy to open for consumers by means of the peel tab.

SAVING FOOD AND WORKING TOWARDS A CIRCULAR ECONOMY - INTRODUCING SCHUR FLEXIBLES' NEW RECYCLABLE THERMOFORMING FILM VACUFLEX(RE) EX-T

In line with its pioneering "rethink" sustainability strategy, the Schur Flexibles Group has developed a number of highly innovative sustainable films. The implementation of the group's strategy is based on its 5R programme comprised of the five pillars of sustainability: Responsibility, Recycling, Replace, Reduction and Renewal

The innovative recyclable thermoforming film VACUflex(re) EX-T based on polyolefins combines the best machinability with the highest product protection and attracts with excellent gloss. (Photo: Schur Flexibles Group)



machinability with extremely high product protection and is equipped with an EVOH barrier. The unique material is available in thicknesses from 80 to 300 µm. It features a high oxygen barrier and offers outstanding machinability on all thermoforming machines, enabling a high production rate and high output.

When used in combination with films such as FlexTop(re), VACUflex(re) EX-T creates

a packaging solution that is ideally suited to fulfil the demands of recyclability in a circular economy. The highly transparent and naturally glossy film can be printed in up to ten colours and thus ensures attractive product presentation at the point of sale. It is suitable for a variety of products such as fresh and processed meat, fish, cheese, convenience foods and more.

www.schurflexibles.com

The Schur Flexibles campaign for a responsible use of resources has met with great interest and very positive feedback from customers. At the IFFA 2019 Trade Fair, a set of new sustainable packaging films were introduced. They are specially adapted to the stringent requirements of the food packaging sector, where highest levels of protection for food safety and waste reduction are indispensable. The prerequisite for the development of each of these new films was to offer a sustainable alternative without sacrificing food protection, hygiene and handling.

VACUflex(re) EX-T - Recyclable and Highly Efficient

One of the most innovative packaging films developed by Schur Flexibles is the VACUflex(re) EX-T. This recyclable thermoforming film made of polyolefins combines excellent

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Stand C40

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THE SCHUR FLEXIBLES GROUP PRESENTS ITS INNOVATIVE, SUSTAINABLE PACKAGING SOLUTIONS AT FACHPACK 2019

Whether it's FoodTray, EcoString bag, CoffeeGuard(re) or VACUflex(re) EX-T, Schur Flexibles is introducing innovative, sustainable and, in particular, recyclable packaging solutions at the Nuremberg trade show; in addition, it is positioning itself as the industry leader for digital printing.

The Schur Flexibles Group will be presenting its extensive product portfolio at FachPack 2019 in Nuremberg between 24th and 26th September. At the European trade show for packaging, processes and technology, the company group - headquartered in Wiener Neudorf in Austria - will showcase its market-leading packaging options that are recyclable, made from renewable raw materials or are extremely reduced with regard to the use of raw materials. Schur Flexibles will also be available to advise on the development of tailor-made solutions. The company will showcase four innovations at the show, in Hall 7, Stand 7-332: the recyclable thermoformable film VACUflex(re) EX-T for meat, processed meat, cheese and fish products, the FoodTray - a new tray concept predominantly made from fibre - for the packaging of fresh foods, the mono PE EcoString bag for cosmetic and hygienic/toiletry items, as well as the CoffeeGuard(re) aluminium-free flow wrap for coffee and dry foods.

Innovative Responses to the New Packaging Law

Of course, these innovations take into account the new packaging



The "rethink" label stands for the characteristic trait of Schur Flexibles's sustainability approach.

Photo:
Schur Flexibles Group

law, which entails extensive consequences for the industry. Constantly striving to deliver innovative answers to the question of compatibility of packaging and resource-protection, the Schur Flexibles Group has already been developing its extensive range of sustainable solutions for years, which naturally fulfil all the most up-to-date requirements and cover the most diverse applications.

In this respect, it is particularly worth emphasising on the protection of food, which, through tailor-made packaging solutions, can be guaranteed in an optimal way. In order to strengthen this commitment to less deterioration and waste of resources even more, Schur Flexibles is part of the SAVE FOOD initiative.

However, Schur Flexibles's commitment goes much further: following the guidelines of "rethink", the company has produced a ground-breaking sustainability

strategy, based on the 5 pillars of Responsibility, Recycling, Replace, Reduction and Renewal. The particular focus involves downgauging and recyclability of packaging solutions. Hence Schur Flexibles is also a member of CEFLEX.

This is because, in a circular economy, recycling helps make the most out of the raw materials which are invested in the production of packaging film.

Vacuflex(Re) Ex-T - The Recyclable, High-Performance Thermoformable Film

Schur Flexibles has already developed a wide portfolio of recyclable materials. A particularly innovative, high-performance product from this range is VACUflex(re) EX-T. This flexible, high-barrier thermoform film is polyolefin-based and offers e.g. combined with FlexGuard(re) a recyclable

packaging solution which can be disposed off into existing recycling streams without any problem.

On top of this, the high-performance VACUflex(re) EX-T, available in thicknesses between 80 and 300 µm, is impressive due to its excellent processability on FFS machines, as well as its highest product protection thanks to an EVOH barrier. The highly transparent film with a PE sealing layer is printable in up to ten colours and has a high gloss finish, guaranteeing attractiveness at the point of sale. Furthermore, VACUflex(re) is suitable for pasteurisation up to 85°C/2h and is ideal for a variety of standard applications, for example for the packaging of fresh meat, sausages, processed meat, poultry, cheese or convenience products.

Foodtray: The System Solution for Sustainable Food Packaging

Another consumer-friendly (for both look and feel) system packaging for fresh food is the FoodTray. It emerged through a successful cooperation between system partners ROBA (owners of the patent), GEA and Schur Flexibles. The innovative tray concept combines corrugated board with film to create a packaging system for fresh food which is pleasing to the eye and touch. In comparison to solid board, it offers greater stability with less material usage and, more importantly, is easily recyclable. The Schur Flexibles Group is bringing a FoodTray line to its stand as the absolute highlight of FachPack and will demonstrate, live, how the innovative packaging is produced.

The FoodTrays are printable on their entire surface - an advantage,

especially for information concerning food and environment, or for attractive preparation suggestions. The corrugated board can be printed in up to six different colours, and the film lid in up to eleven, including lacquer finish. Various printing technologies also allow differentiated product descriptions for small batches. The height of the packaging ranges from 20 to 60 mm, and up to 20 mm for Skin applications; customised sizes are also possible.

In addition, the food FoodTray solution perfectly unites the requirements for product description, consumer friendly look and feel, food safety and efficient manufacturing processes with the requirements for sustainability and recyclability. Thanks to state-of-the-art production technology and to the selection of a special raw material, Schur Flexibles was able to considerably reduce the amount of plastics used. The inner film is thermoformed directly into the tray and is only lightly sealed to the corrugated board at specific points. The material

components can therefore easily be separated by the consumer after use, thereby ensuring that the corrugated board - made either from renewable raw materials or recycled materials - can be returned to the paper/cardboard circuit, and the film classified as recyclable to the synthetic materials.

Ecostring Bag: The Innovative Mono Pe Solution for Hygiene and Toiletries

The EcoString bag is another outstanding solution that offers simple recycling. With this product, Schur Flexibles is presenting the next generation of drawstring bags at FachPack: a 100 % recyclable or biodegradable drawstring bag for hygiene or cosmetic articles such as cotton buds, pads and balls without viscose string. The bag, as well as the string (integrated in the packaging), are made of mono PE film. The separation of the previous mixed materials is therefore no longer necessary and the whole packaging can be recycled as one, EU-wide. Complaints

Photo: Schur Flexibles Group



The recyclable system solution for sustainable food packaging emerged as a result of the cooperation between the patent owner ROBA, GEA and Schur Flexibles.

Photo:
Schur Flexibles Group



The "rethink" label stands for the characteristic trait of Schur Flexibles's sustainability approach.

about cellulose strings getting tangled up in recycling sites will also become a thing of the past.

There is an additional show-stopper: the PE string is made from production residues. Schur Flexibles has achieved one of its sustainability goals with standard bags: zero-waste production. A further advantage is provided by the optimized logistics. The in-house solution requires no delivery of additional materials, which reduces the carbon footprint. Furthermore, in the future, the bags will be produced from 100% renewable raw materials.

Naturally, the functionality of the packaging will remain untouched: excellent appearance and simple ease of handling. EcoString bags can be produced in various forms and can be adapted to the specific shapes of the products. They offer a thickness from 70 up to 100 µm and a high mechanical resistance. Additionally, the pre-made PE bags run smoothly on existing packaging machines and allow for easy consignment. Further benefits of the packaging can be printed and finished in ten

different colours with matt or glossy lacquer, with efficiency and high quality and the synthetic string can also be printed.

Coffeeguard(Re): The Recyclable, Aluminium-Free Flow Wrap Innovation for Coffee

Besides toiletries and hygiene, Schur Flexibles is also revolutionising the coffee market: with Coffeeguard(re). The company is presenting a recyclable wrap packaging without aluminium. This innovative solution, which was developed as a PP and PO variant, has an ultra-high barrier and therefore can safely pack ground coffee, coffee beans and other dry products. In addition, the weight of the packaging will be considerably reduced, and, thanks to its recyclability, the packaging will allow the return of the raw materials into the plastic circular economy.

Coffeeguard(re) is a sustainable packaging alternative - without inconveniences for producers, retailers or consumers. The thickness goes from 64 to 94 µm, with various options such as a PE

sealing layer or peelable sealing. Coffeeguard(re) allows for simple handling and runs optimally on existing flow wrap lines. For the perfect display at the point of sale, a range of different finishes and tactile lacquers are offered, from matt and glossy to PaperTouch, SoftTouch or SandTouch. Printing is possible in up to ten different colours.

Schur Flexibles - The Industry Leader In Digital Printing

At FachPack, Schur Flexibles is not only positioning itself as a pioneer for innovative, sustainable and above all recyclable packaging solutions, but also as the leading industry supplier of digital printing technology. With the experts in digital printing UNI Packaging and Scandiflex - which recently became part of Schur Flexibles - and through collaboration with HP Indigo - the market leader in digital printing - the group completed its performance range in the field of printing expertise. It has at its disposal all state-of-the-art printing technology, produces in various locations Europe-wide, and offers digital printing in up to seven colours and various finishing options for gravure printing on film up to 736 mm in width.

This guarantees printing results of outstanding quality, and with modern digital printing this it provides further advantages: flexible technology without clichés and cylinders allows for a sustainable on-demand production at the time required and to the point. This printing technology is ideal for promotions, market tests or seasonal products and, thanks to the short delivery times, it is also the perfect solution for emergency orders.

www.schurflexibles.com

NEW DIMENSION IN PACK LABELLING PERFORMANCE

At FachPack 2019 MULTIVAC will be presenting a new generation of cross web labellers. In addition to improved performance and operating reliability, one of the features of the new models compared to the previous labelling solutions are their lower life cycle costs. The use of state-of-the-art communication standards such as IO-link and EtherCAT ensures that they are equipped for the future. This enables additional sensor systems for example to be used, such as those for labelling inspection or predictive maintenance.

The new cross web labellers are process-controlled. Individual movements are overlaid as much as possible, so that an optimised and therefore significantly faster labelling process is achieved. Servo drives on all axes, as well as the virtually continuous operation of the longitudinal shift unit, ensure that the cycle output is increased still further.

Higher Performance, Compact Design

The new labellers have been fitted with the latest generation of label dispensers, which also contribute to a higher cycle output thanks to their sophisticated servo motor technology. The use of servo drives also offers the benefit, that no reference runs have to be performed before the labelling operation is begun - and this means that set-up and conversion times are reduced, so that the labellers are operational more rapidly.

The robust construction of the new machine generation also makes a contribution to increasing

the cycle output. The axis of the longitudinal shift unit is for example designed with even greater torsional rigidity than previously. The machines operate with significantly less vibration, and their travel range can be completed in a shorter time. The simplified construction with its fewer number of deflection rollers accelerates label roll change and makes it even easier, so that downtime is also reduced. In addition to these benefits, the more compact design also means a reduction in space requirement.



Greater Ease of Operation, High Level of Efficiency

The new machine generation from MULTIVAC also sets the benchmark in the market for its ease of operation. Menu guidance has been optimised and equipped with an integrated wizard function. The system only needs the required number of cycles to be entered - after that all the relevant speed and acceleration parameters are adjusted automatically. The Quick Control panel is also integrated in the labeller housing, so that the operator has less distance to cover.

Removal of the vacuum box hood and access to the pusher plate set is quick and easy, and this can be performed without any tools. The necessary service work can be carried out in a user-friendly way and above all very rapidly. The reduction in time and effort increases efficiency and makes itself felt immediately in the life cycle costs.

Maximum Reliability, High Level of Availability

Particular importance was attached to machine reliability, especially in view of the high cycle speeds. The constant monitoring of travel speeds and torque ensures that the highest level of process and operating reliability is achieved even at maximum output.

Thanks to targeted minimisation of potential faults, MULTIVAC has significantly increased the reliability and availability of the labelling system. The reduction in moving parts and an improvement in the cable feed also make a significant contribution.

Equipped for the Future

The new cross web labellers are already designed for the demands of tomorrow. State-of-the-art communication standards such as IO-link and EtherCAT enable the machines to be equipped with the latest sensor technology. Additional solutions for labelling inspection can also be easily retrofitted, since the corresponding interfaces are already integrated. And last but not least, the labellers are designed for predictive maintenance.

www.multivac.com

LESS GREENHOUSE GAS EMISSIONS WITH CLIP CLOSURE SOLUTIONS

The study by the Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT on calculation of the carbon footprint of various packaging solutions for sausages clearly points to a reduction in greenhouse gas emissions with clip closure solutions. The latter, when directly compared with injection-molded cups and thermoformed packaging, result in a substantially greater reduction in emissions. In the case of cold cuts, clip closure solutions produce up to 64% less greenhouse gas emissions than injection-molded cups, and up to less greenhouse gas emissions than thermoformed packaging. "We expected our packaging solutions to offer environmental benefits.

As a result of this study we can now for the first time quantify these benefits for our customers," says Mr Kristian Blomqvist, Vice President Sales and Marketing at Poly-clip System.

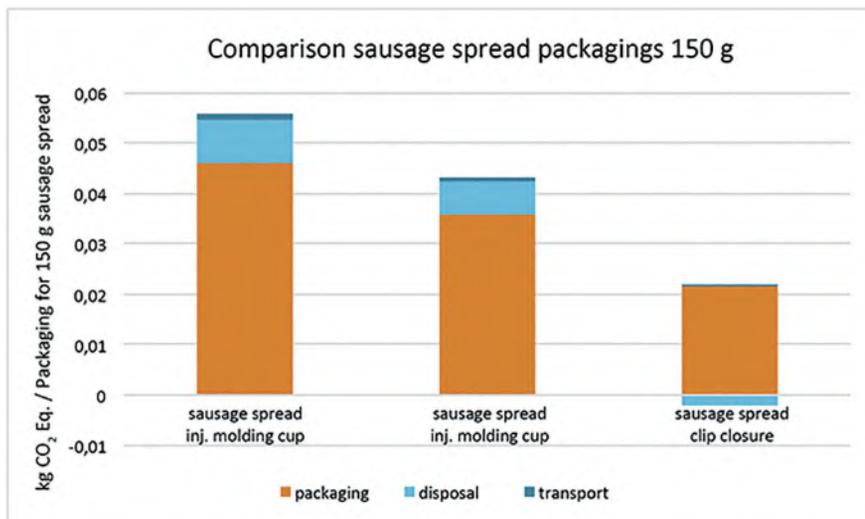
Against the backdrop of the new German Packaging Act, the debate around ocean waste and microplastics and the circular economy, environmentally friendly packagings are increasingly in demand. The results show that CO₂ emissions can be reduced by the choice of packaging. Using eco-balancing, the carbon footprint of a product is determined over its life cycle and a statement on its global warming potential is possible. In order to establish how

environmentally friendly their packaging solutions are, Poly-clip System commissioned the Fraunhofer Institute UMSICHT to investigate a variety of packagings for meat products, comparing clip closure solutions with tray- and thermoformed packaging as well as injection-molded cups for specific meat products one with another.

Method

For determination of the carbon footprint, the ecological evaluation covered everything from extraction of the raw materials (for example petroleum) up to the finished packaging solution, including disposal of the packaging. The packaging solutions were compared using a comparison unit, which for sausage spread packagings consisted of a 150 g pack of sausage spread, and for cold cut packagings a 150 g pack of cold cuts. The bases of calculation included the weight and materials of the packaging solutions and the manufacturing procedure involved. Analysis of the materials was performed by means of infrared spectroscopy and the packaging plastics manufacturing processes were simulated using commercial eco-balancing databases.

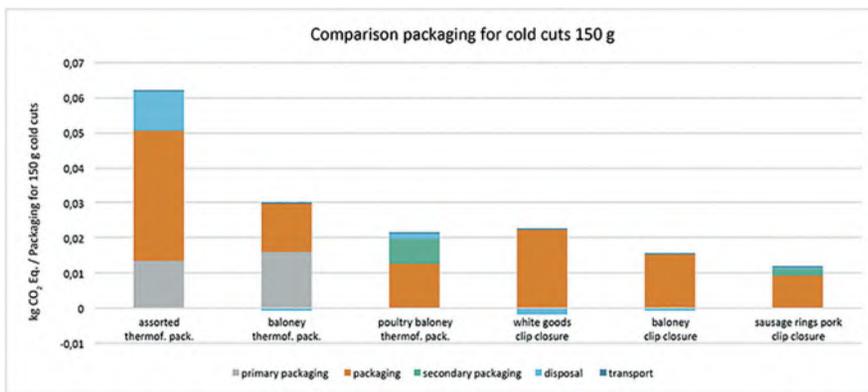
Up to 64% less greenhouse gas emissions using the clip closure solution compared with injection-molded cups.



Results

"For cold cuts, around 0.05 kg CO₂ equivalent can be cut using the clip closure solution, compared with thermoformed packaging. When extrapolated to the consumption of cold cuts in Germany, this represents a reduction of 4,090 tons of CO₂ equivalent per annum, corresponding to around 30,000

Up to 64% less greenhouse gas emissions using the clip closure solution compared with injection-molded cups.



driven car kilometres,” says Nils Thonemann from the Department of Sustainability and Resource Management at the Fraunhofer Institute UMSICHT. “In the case of sausage spread packaging, using the clip closure solution saves up to 0.04 kg CO₂ equivalent per comparison unit, or 3,270 tons of CO₂ equivalent in terms of the total annual German consumption of sausage spread.”

The results demonstrate the climate-friendly benefits of clip closure solutions compared with the types of sausage packaging illustrated. With fewer processing steps, less waste and also lower costs, the designation ‘minimalist packaging’ is more than appropriate. Consumer behaviour changes. In this way, less can mean more. More sustainability in sausage packaging using clip closure solutions.

www.polyclip.com

NEW FRANK-A-MATIC LINKER FROM MAREL

The new Frank-A-Matic Linker provides more consistent performance with increased production and throughput for high speed cellulose and collagen casing.

These new linkers are the successors to Marel’s line of Townsend NL SmartLinkers. Two versions are available, LK 0440 and LK 0450, based on the size of casings used in the production processes.

The history of Townsend Linkers and the Frank-A-Matic Linker name is well known to the global market. This new generation of machines will build on that strong foundation first set in the 1960’s when Ray Townsend introduced the original Frank-A-Matic DB linkers.



The Frank-A-Matic linker provides more consistency in length and weight to sausage producers

Marel is the leading global provider of advanced processing systems and services to the Poultry, Meat and Fish industries. In partnership with our customers, we are transforming

the way food is processed. Our vision is of a world where quality food is produced sustainably and affordably.

www.marel.com

SUSTAINABLE WATER USE IN THE POULTRY INDUSTRY



Mazzraty uses treated water to irrigate the desert land surrounding the poultry processing plant in Qatar.

Sustainability is a subject that is on everybody’s lips today. The poultry industry is making many efforts to tackle this issue and comes up with various solutions concerning energy saving, CO2 footprint, food safety, traceability and water use. For responsible water use, Marel Poultry offers solid practical solutions. One clear example of this is the Mazzraty poultry processing plant in Qatar,

equipped with a well thought-out water management system.

Chicken production has a naturally low carbon footprint and requires a limited amount of resources, such as fertilizer, land and water. Using 2,000 liters of water to produce 1 kilo of chicken meat, poultry production needs a fairly modest amount of water. Just to compare, 1 kilo of chocolate uses 17,000 liters of water.

Water Isn’t Lost

However, water use doesn’t mean that this water is lost. Recycling options are available to treat the water and make it fit for renewed use. The poultry industry has elaborated solutions for this. Mazzraty in Qatar called in the help of Marel Water Treatment to set up today’s most modern water treatment installation. This poultry facility is located in the desert, where nothing grows, so Mazzraty is highly aware of the importance of clean water in these circumstances.

Treatment

Water Treatment starts already in the poultry processing plant. All water used for transport, for cleaning and for the various stages of processing, is collected and drained to the water treatment facilities. In the first phase, the physical pretreatment takes out fat material and larger coarse parts. After that, the biological process takes



over to decompose the pollution in a big basin and convert it to biological sludge and purified water.

Irrigation

In the direct surroundings of Mazzraty's poultry processing plant, four large green circles in the middle of the yellow sand plain catch the eye. This is irrigated land, made fertile with the help of Mazzraty's treated water. Besides being used for truck washing, the purified water is excellently fit for artificial irrigation of areas that are otherwise dry land. Mazzraty manages to drive four center pivot systems with this recycled water to irrigate four quarter sections (each 800x800m). The company grows mainly grass, which they can use in their feed mills.



Lowest Impact

Mazzraty's facility has been designed to not waste or leave behind residual material and all activities aim at causing the lowest possible impact on the environment. The reuse of cleaned wastewater from the factory as irrigation water is part of Mazzraty's bigger environmental plan, which also involves a reduced CO2 emission and production of their own chicken feed. In this way, Mazzraty demonstrates one of the most sustainable ways of working in the poultry industry.

www.marel.com/poultry



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Nadina Krauss

*Head of Marketing & Business Development
ESPERA-WERKE GmbH*



As an expert for automated machines in weighing and labelling of packaged food, ESPERA has known for 95 years what is important in daily operations of meat plants and is working intensively on the development of digital functions that simplify the handling of industrial labelling systems. ESPERA sets completely new standards for the meat industry with digital solutions machine features. Nadina Krauss, Head of Marketing is involved in such digital projects since more than 5 years.

Q. Nadina Krauss, ESPERA has been dealing with IoT (Internet of Things) and digitization for more than eight years. What was the reason for this decision?

Nadina Krauss:
In general, it has to be said that the food industry is not the number one in terms of digitization compared to other industries, e.g. electronics industry. We operate in a very traditional market.

However, if you also look at developments over the last few decades, you can see how the use of computer technology and

automation has gradually made its way into the market. It was therefore clear to us that the trends that had been standard for years in the consumer goods industry or the electrical industry would at some point also find their way into industrial meat production.

Q. How do you see the digital change for our meat industry?

Nadina Krauss:
Until now, classic performance parameters, such as the speed and output of machines or tool-free component changes, have been important key

performance indicators for increasing performance. In order to meet the constantly increasing requirements of the retail trade towards batch size 1 and maximum individuality in the future, changes are required to a greater extent than the previously classic parameters. As a first step, I therefore see a trend towards new functions to reduce downtimes and prevent unexpected service interventions. This allows processes to be sustainably optimized and production efficiency to be increased. In addition, quality assurance will continue to be a driving factor.





Q. Do new packaging trends influence the labelling process for meat products?

Nadina Krauss:
Of course! The trend towards packaging materials with low plastic content or completely absorbable packaging materials will change the market considerably in the future. One example that currently represents a strong trend especially in the meat sector is skin packaging. With up to 70% less plastic a very important alternative. However, these products are a great challenge in the area of labelling.

The products are irregular shaped and no two products are alike. At a speed of up to 150 packs per minute, solutions are needed that always place the label on the correct position of the pack. This can no longer be controlled manually. Digital technologies are used here. For example, camera systems such as the 3D Cam from ESPERA, which automatically detects the perfect labelling position and thus always applies labels at the perfect position. No matter how uneven the product is. This is only possible with the perfect combination of camera technology and software.

head transparent and visible to the operator. In addition, the operator has the option of actively influencing the thermal strip via the integrated assistance system. This allows the operator to control the print quality himself according to his printing requirements and extend the service life. Due to the complete transparency of the thermal bar status, unplanned failures can be avoided and unreadable labels are fully avoided. All in all the perfect tool for quality assurance.

Q. Our industry is characterised by a large number of small and medium-sized companies. Are the digital technologies also applicable for them or are they reserved exclusively for the big producers?

Nadina Krauss:
Increasing efficiency and optimising processes has nothing to do with the size of the company. Everyone can use the new, digital technologies for themselves and make their production more efficient. It is important to choose the functions that are important for the plant and its application in order to meet the increasing retail requirements. ●

Q. What advantages do production plants that rely on ESPERA's digital technologies in the end-of-line area have?

Nadina Krauss:
Especially when printing labels, the thermal head and the associated print quality were previously an unpredictable component. The print quality often decreases at short notice and poorly readable labels are the output.

With new sensor technologies, we are making the thermal



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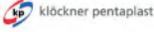
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