

MEATING POINT

magazine

SUSTAINABLE TECHNOLOGY, PROCESSING & PACKAGING

PLANT AND MEAT: PROTEIN IN HARMONY

Part 1



**PROVEN SYSTEM,
VARIOUS ALTERNATIVES:
SKIN PACKAGING FOR POULTRY**

**TECHNOLOGY FROM HESSE
FOR ORGANIC ENJOYMENT
FROM BAVARIA**

**REDUCE WASTE AND
FUTURE-PROOF PRODUCTION WITH
AUTOMATIC PRODUCT RECOVERY**

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450 PAGES

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HENK HOOGENKAMP – A world renowned protein technology expert and globe-trotting, trusted advisor for food companies, academies and contributor to leading food journals. A powerful thinker and communicator about sustainable protein solutions. Henk Hoogenkamp has a worldwide reach designing and implementing strategic technologies to advance sustainable, nutritionally sound, tasty, and healthy food products. A Board member of public listed companies and also serves on the Advisory Boards of the world's leading food (ingredient & equipment) companies. Henk is probably the world's most referenced publicist in food technology, related to implementing animal and plant protein solutions, including sustainable and ecologically-sound hybrid and meat-free foods. Henk has pioneered and continues to be involved using transitional protein solutions in structured meat analog foods. Hoogenkamp's grand vision has clearly turned into reality now that world's largest food service companies are using plant protein solutions to provide wholesome and affordable nutrition to meet or exceed the consumer expectations. As evolving lifestyles, food choices and its related dynamic society diagnostics, continue to accelerate. Henk's latest work on plant protein solutions is timely and enlightening for the food and meat industry to better anticipate the world of tomorrow.

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Dear reader,

Starting with the magazine, our main promise to you was that we will talk a lot about sustainability and will show examples of companies committed to business sustainability and provide insights into their challenges. Since this is a critical time for our planet, the discussion has become broader and more urgent. Companies strive to find the optimum balance between business goals and sustainable use of our planet's resources.

These companies, which have crafted a strong reputation based on their leadership in sustainability, include well-known names such as Marel, Ishida, Meyn, Micvac, Sealpac, Schur Flexibles, BordBia, Cargil, Tyson.



Tristan Bogaard

All of them have already seen some of the competitive benefits of being leaders in this sphere. However, companies also realize that sustainability cannot be tackled alone. They are aware that business must actively change the conversation. Whereas most business dialogue is around competitive advantage, sustainability requires new ways of thinking and doing. It requires working together to manage natural resources and finding collective - not competitive - solutions to problems.

However, what are the greatest challenges companies face in achieving sustainability?

Some of the top challenges that businesses face in their goal to achieve sustainability are collaborating for sustainability, addressing climate change, designing effective sustainability communications, turning sustainability into strategic priority, transitioning to green products and services.

In this issue, we have some excellent examples of sustainable practises in meat processing and packaging industries, such as increasing energy efficiency, water reduction, minimising or preventing waste, reduction of the consumption of packaging and the use of recyclable materials in the production of packaging.

As always, you will find some latest industry and business news, customer stories, and an overview of the upcoming "Meating" Points.

Enjoy your read!

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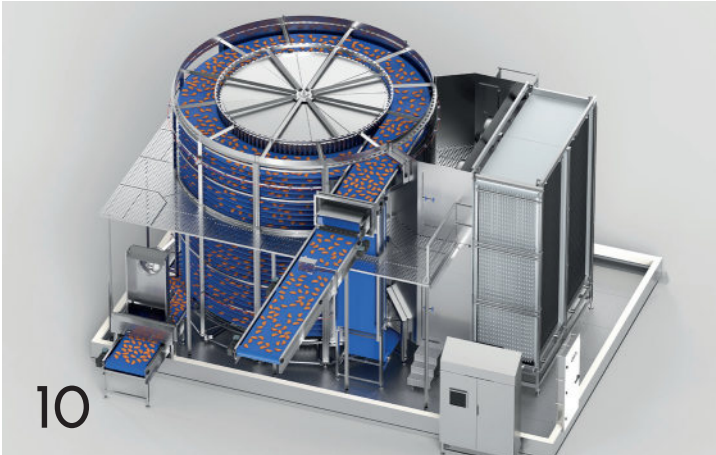
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OMRON BRINGS REAL-TIME EDGE-AI CONTROL TO THE MEAT INDUSTRY



Omron will showcase a new solution that adds artificial intelligence (AI) functionality to packaging and processing machinery for real-time control that provides an instant reduction in waste and machine downtime

On stand B32 at this year's PPMA show, Omron will showcase a new solution that adds artificial intelligence (AI) functionality to machinery for real-time control that provides an instant reduction in waste and machine downtime. The AI controller is based on a machine learning engine (MLE), which is incorporated into Omron's Sysmac control platform (on both PLC and IPC) and monitors multiple signals simultaneously to detect potential anomalies (faults) and determine the appropriate response. The whole calculation can be accomplished in under a single machine cycle, minimising any disruption to the operation of the line. Any industry can take advantage of the technology, but the meat industry in particular can benefit through

almost every stage of production, including processing, packaging and packing.

AI offers functionality which would not be achievable on traditional control and programming solutions. To demonstrate the value it can add to the production process, a technical cell at the PPMA exhibition will show a machine filling containers with liquid, until a fault is deliberately applied. The AI controller will detect the fault and calculate in real-time how to avoid a faulty operation and recommence the filling process. In a similar application without AI, the machine would have to be stopped, with the need for manual analysis of the fault and physical adjustments to be made. This will inevitably cause

downtime to production and reduce the efficiency of the machine.

As robotics and industry 4.0 becomes adopted more widely in manufacturing, it is apparent that current cloud or networked AI solutions are ideal for collating and processing huge amounts of data for long-term performance trends and applications such as predictive maintenance. The issue with these solutions is that they cannot react in real-time, to control machine functions, even with today's high-speed communications technology. Bringing AI capability to a local processor at the "edge" of the production line means that data only needs to be sent to the cloud when absolutely necessary

and enables decisions to be made almost instantly. With EDGE-AI, Omron has brought AI processing technology beyond the edge and directly to the machine, bring even quicker response times.

Adopting EDGE-AI technology in your machine on the factory floor, allows tighter control of the machinery in the line, which can bring an immediate increase in productivity and Overall Equipment Effectiveness (OEE) without the complexity of modelling every aspect of the complete system.

Omron marketing manager Dan Rossek comments: "There is a huge buzz in the meat industry about how EDGE-AI processing can change the way we work. Today, while the majority of companies are still talking about the potential of AI applications, Omron has gone a step further and brought machine learning into the production line. Moreover, the solution that will be shown at PPMA is less complex to implement than proposed AI solutions and will allow manufacturers to access some of the benefits of Industry 4.0 immediately on a platform that is easily scalable."

By employing this solution at machine level, the AI controller can be taught to recognise anomalies and abnormal patterns much easier than traditional techniques, which would require potential faults to be determined at the production line level and require many more input signals and additional computing power to analyse the results. The AI algorithms are pre-integrated into the control system to create the framework for real-time optimisation without the need for further programming. The result is a solution that is powerful but remains easy to implement, with immediate benefits for meat manufacturers.

www.omron.eu

PRODUCTION NETWORKING AND PROCESS CONTROL WITH HCU SOFTWARE

At Handtmann, Industry 4.0 is known as HCU and it stands for the modern management of materials, staff and machines. With the HCU software (Handtmann Communication Unit), Handtmann provides a unique tool for controlling, monitoring and optimising the filling department. HCU MODULES enable simple and effective production optimisation to be implemented step by step: the **Basic Module**, **Weight Control Module** and **Production Planning Module**.



The *Basic Module* covers the recording and analysis of production data. It links filling lines into a network and, as an intelligent control tool, supports the production managers in documenting, analysing and organising the filling department. The production manager organises the filling lines and scales as well as the programmes on the vacuum fillers directly from his PC workstation.

Batch tracking, accurate documentation of production for each filling line and recording down-times ensure 100% traceability, reveal weak points and thus provide information on the potential for savings. It is possible to improve production capacity utilisation in a targeted way due to the transparency and

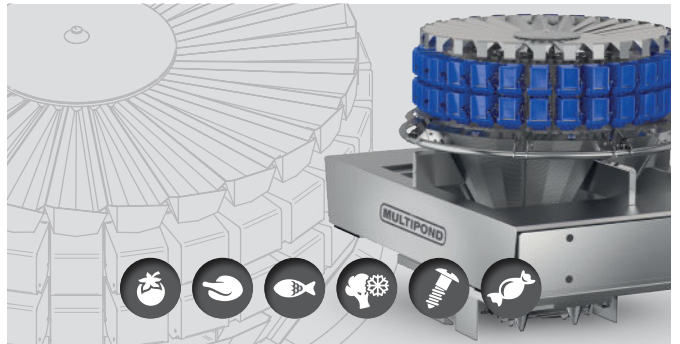
direct comparability of the filling lines. The integration of a weighing system is another tool aimed at production and cost optimisation with the HCU. Check-weighing scales linked to the network are used for an on-going target/actual value comparison of the set values and the measured weights. A trend calculation tunes the Handtmann filling lines that are also connected to the network. The system then automatically adjusts the portion weight. This automatic weight optimisation, facilitated by the **Weight Control Module**, results in a significant cost reduction.

Another effective HCU software tool is the **Production Planning Module**. It ensures that production volumes can be easily planned and transferred to the production lines. Production line availability, the

number of operators and the product to be filled are automatically taken into consideration. The order list is transferred to the vacuum filler control system easily and centrally using drag & drop. And complete production can start right away.

The HCU software can be used throughout the entire production line where the VF 800 and VF 600 vacuum fillers or the HVF 600 high vacuum fillers are deployed as the basic, central element of the production processes. In particular, it reduces the work of the company management team, quality assurance and the production management in the face of cost pressure, greater dynamics and complexity. It guarantees cost reductions, consistent product quality and production reliability.

MULTIPOND



MULTIPOND Weighing Technology and multihead weighing systems stand for maximum accuracy, performance and reliability.

**MEET US –
AT PPMA 2018**

in Birmingham from September 25 - 27, 2018
Stand D30

» www.multipond.com

www.handtmann.de

THE OPTIMUM PRODUCT FLOW IN VIEW



3D cameras deliver basic data for intelligent reactions to changed product conditions of MULTIPOND multihead weighers.

Upon request, in the future MULTIPOND weighing systems will automatically keep a watchful eye on the optimum product flow.

3D cameras on the weighers, which are coupled to the controller, deliver data about the product on the distribution cone and vibration trays. The computer evaluates the information and initiates suitable measures by itself. MULTIPOND has patented this system.

With all MULTIPOND weighing systems, the pre-weigher already delivers information on the product quantity on the distribution cone. The patented 3D cameras now also indicate the location and quantity of the product on the distribution cone and the feed trays. The weigher can use the information supplied to respond, by activating certain individual feed trays for example.

This allows overfills to be remedied quickly and automatically. Product gaps can also be detected and rectified. Moreover, residual product can be localized and automatically removed by taking suitable measures.

Perfect for Products Such as Meat or Salad

The benefit of the camera-monitored weigher is clear to see: thanks to the automated response to the image data, this system innovation guarantees a controlled filling of the weigh hopper. Optimizing the product flow achieves a more constant metering and hence more combinations. The result is a higher output and even more accuracy. This MULTIPOND innovation brings measurable improvements, especially for weighing difficult products such as meat or salad.

www.multipond.com

15,000 BPH POULTRY PROCESSING WITH SEAMLESS INTEGRATED CUT UP AND DEBONING SOLUTIONS BY MEYN



At VIV China, Meyn presents 15,000 bph solutions which lead to lower cost per bird and therefore increases profitability.

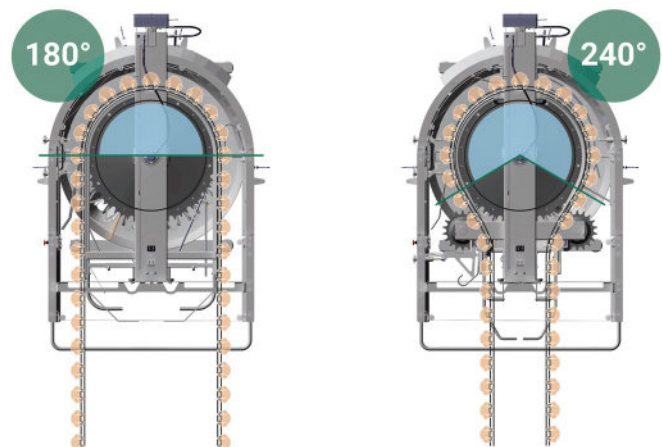
For Chinese poultry processors the future looks bright. In the first place because the consumption per capita of poultry meat has increased. And secondly because it is likely that the

import of poultry meat will decrease.

Another opportunity for the poultry industry is the trend to replace the wet market of yellow birds and layers by modern processing

Although wages are consistently increasing, it is the availability of labor which is the biggest challenge for Chinese poultry processors. In the last decade Meyn has started to transform huge cut-up and deboning areas, where hundreds of people used to work, into fully automated departments.

plants. For these birds where flock uniformity is usually less consistent Meyn offers solutions which can handle the widest weight range in the industry and still meet the quality and yield requirements.





Innovations for Live Bird Handling to Chilling at 15,000 Bph.

Meyn is very proud that this year alone, 3 new factories will be commissioned at 15,000 bph. To be able to run at 15,000 bph and still meet the optimal performance figures it is necessary to innovate several processing steps. Our new 240o evisceration solutions guarantee superior product and food safety.

Other innovations which Meyn would like to highlight in China are the new Meyn Grande drawer system, the Meyn Carousel rehanger M2.0 and the Meyn Line weigher M2.0.

Upgraded Cut Up and Deboning Solutions With the Highest Yield.

The Meyn Physic and Flex M3.0 cut up lines are updated to seamlessly integrate with high speed lines. The Physic line M3.0 offers maximum flexibility and can be configured to situation-specific requirements in terms of product type, quantity, quality and flexibility.

The new Meyn Rapid Plus breast deboner M4.1 has an upgraded capacity of 7,000 breasts caps / front halves per hour. At the same time the footprint is significantly reduced by almost a fifth.

www.meyn.com



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Online auction machinery for the complete food industry in Brokstedt, Germany

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Online auction machinery for the complete food industry in Sevenum, the Netherlands

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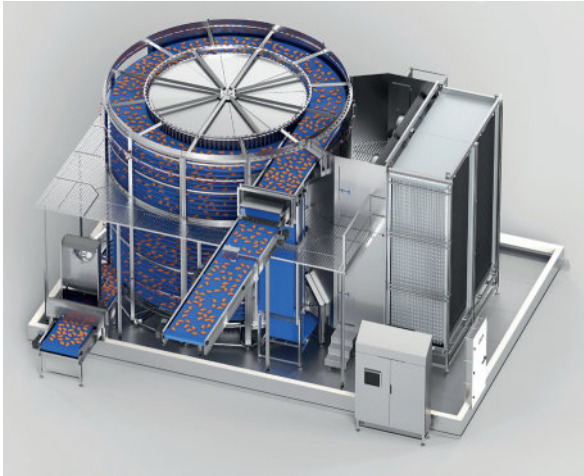
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GEA INTRODUCES UNIQUE CONTINUOUS CONTROL SYSTEM TO ITS S-TEC SPIRAL FREEZER RANGE



The S-Tec spiral freezer, with CALLIFREEZE®, uniquely provides continuous control of the frozenness of food products. (Photo GEA)

GEA has announced the addition of its unique control technology CALLIFREEZE® to its S-Tec range of spiral freezers for the food industry. The new system ensures that all products are frozen precisely to the users' requirements. CALLIFREEZE® takes its name from its ability to calibrate the freezer having controlled the level of frozenness of the products. This reduces power consumption, improves efficiency and helps manufacturers produce the finest quality frozen food.

The S-Tec was first introduced to the market in 2016 for poultry, meat, fish, ready meals, bakery and dairy applications that require capacities of up to 6,000 kg/hr. It was originally designed primarily for the European market and conforms to CE and PED regulations. It has now been selected by GEA for sale in Asia. The S-Tec has always been unique for its highly efficient

airflow characteristics and hygienic design; the addition of CALLIFREEZE®, however, once again sets the S-Tec apart from its competition.

CALLIFREEZE®: A Unique System of Freezer Control

CALLIFREEZE® is a new freezer control system that's exclusive to GEA spiral freezers. It is able to calibrate the freezer parameters through the continuous measurement of the level of frozenness of the product at the freezer exit. GEA has enhanced its control system to continuously

monitor the level of crystallized water in the products and adjust the retention time, air temperature and fan speed to achieve the precise level of freezing required, with the minimum of energy consumption.

Mathieu Nouhin, GEA's Product Manager Freezing, said that there is no point in continuing to cool a product beyond 100 percent frozen but, until now, there has been no way of checking the level of frozenness of products as a continuous part of the process. "CALLIFREEZE® uses GEA's unique sensing and control technology to measure the level of frozenness of every product in the spiral," he said. "It then adjusts the machine to achieve perfect freezing in line with the customer's requirements." Mathieu also explained that for several applications, 80 percent level of frozenness at freezer discharge is acceptable with the product being 'finish off' in the cold store

for energy savings purpose. "The S-Tec, with CALLIFREEZE®, can do this too," he said. Results from one plant operating seven GEA freezers has showed a 10-15 percent production capacity increase with a reduction in energy consumption.

Even before the introduction of CALLIFREEZE® the S-Tec was already a market leader in the areas of hygienic design and operating efficiency:

Pure Horizontal Airflow for Highly Efficient Freezing

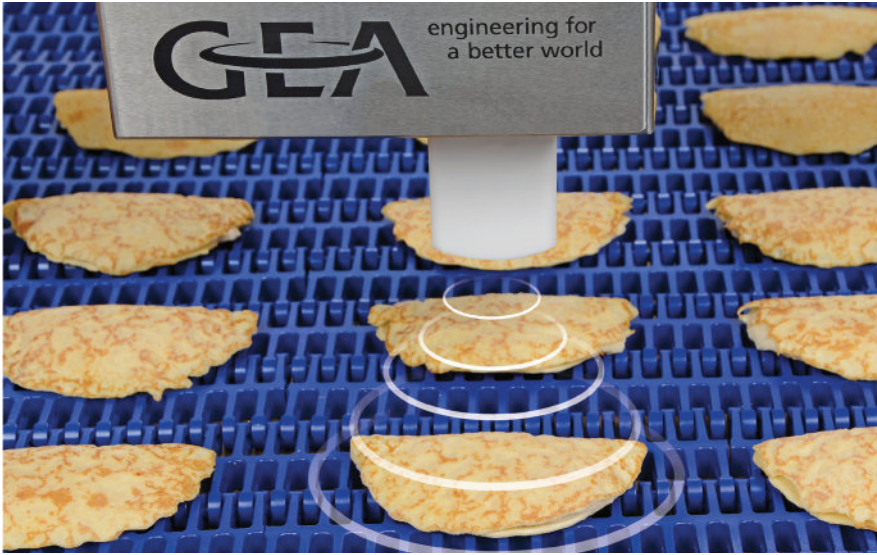
Pure horizontal airflow is a unique feature of GEA spiral freezers. This provides a consistent airflow and temperature distribution across all products wherever they are in the spiral. This consistency, throughout the full height of the spiral, ensures that there is a very small temperature differential within the machine, reducing product dehydration, significantly improving the yield and keeping power usage to a minimum.

Hygienic Design

The S-Tec uses a fully-welded construction for the whole of the product-contact belt area. This eliminates any dirt traps that would be created by a bolted structure and creates a perfect surface for cleaning. The S-Tec is also available with a fully-welded modular floor that does not require floor heating. Again, this removes dirt traps with structure elevated on pins welded to the floor for easy cleaning.

Flexible Configuration

The S-Tec can be configured to meet each user's needs with a choice of enclosure and floor types, single- or twin-drum configurations,



filtration, heating and new chemical dosing.

GEA Servicing for the Lowest Total Cost of Ownership (TCO)

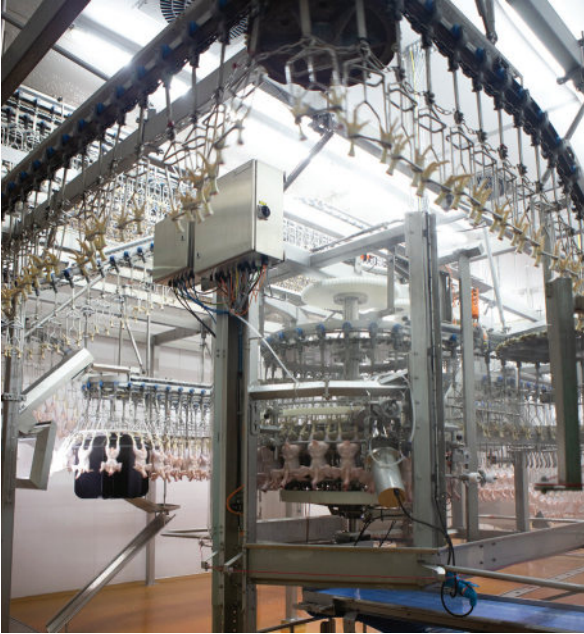
GEA local service personnel are closely involved at the commissioning stage of all spiral freezers. This allows them to build a relationship with each customer and provide maintenance, spare parts and operational advice throughout the lifetime of the equipment. GEA service contracts are available allowing the GEA service team to offer optimized, year-round service to keep equipment in perfect condition for the lowest possible TCO.

www.gea.com

and a selection of infeed/outfeed options - straight through, 90° turn, 180° turn, 270° turn and top-down or bottom-up operation. There is also a range of CIP (Cleaning in

Place) options including the ultimate 6-Zone Recirculating CIP with full zone coverage and a recirculating system that captures and recycles water and cleaning agents after

15,000 BPH PROCESSING - A PROVEN SOLUTION



15,000 bph processing; a proven solution with uncompromised high efficiency and quality.

Taking into account the fast growing and urbanizing world population, the production of poultry meat is expected to increase considerably. Processing plants need to intensify their operations to keep up with consumer demand. There is an unmistakable call for even higher processing capacities than today's maximum of 13,500. Marel Poultry timely foresaw this trend and started developing solutions to handle a line speed of 15,000 birds per hour.

Marel Poultry is the world's first supplier of integrated 15,000 bph lines. Dealing with such high speed, there is no other way than to have paramount reliability; if not, every minute of malfunctioning means 250 lost chickens! Therefore Marel Poultry has profoundly tried and tested its new 15,000 bph configuration before launching it at the market. After this long period of extensive research and development, it is labeled as a truly proven solution.

Keep Control

All systems are set for a processing speed of 15,000 bph. From live bird handling with ATLAS and stunning with CAS SmoothFlow, via evisceration and chilling, up to the distribution line, every process step solidly handles this all-time high speed. Innova software runs in the background to supervise all fast processes plant-wide. The ATC tension control system keeps the powerful forces of the lines under control, while they move at an incredible speed. New LineLink transfer units seamlessly hand

over products from one shackle type to another, while they travel through the processing stages.

"To some people it may seem that a speed of 15,000 birds per hour would drive all components to extremes. On the contrary, I must say; they are operating at ease and perfectly capable of keeping up with the speed and control of the process," says Anton de Weerd, Marel Poultry Process Managing Director.

Proven Solution at Celler Land

Some time ago, Celler Land Frischgeflügel in Germany was the world's first poultry processor to advance to a line speed of 15,000 bph. Managing Director Richard Wenneker tells about the necessity of an accelerated processing line: "Our poultry market was projected to grow. We, however, had already two shifts of people working and couldn't do anymore products per day with this level of performance and quality, unless our line speed increased." Hendry Kuijpers, Celler Land Plant Manager adds, "Together with Marel Poultry we saw the perfect opportunity to expand the 13,500 bph capacity to 15,000."

Uncompromised

An all-time high processing speed is not a goal in itself. Already proven in practice, the fast operational pace of Marel Poultry's 15,000 bph lines brings about a significant increase in performance and yield. Sustainability benefits too, since the existing infrastructure with only a slight modification of machinery can be used for a considerable production growth. Achieving lowest production costs, it is of utmost importance that highest quality and efficiency remain uncompromised.

www.marel.com



FRIGOL IS THE BEST BEEF COMPANY IN BRAZIL

Frigol S.A. was elected as the Best Beef Company in Brazil by the Melhores & Maiores Award (Biggest & Best 2018), of Exame magazine. The ranking also places the industry as



Frigol Lençóis Paulista logo novo

the 2nd best in the area of Consumer Goods. The Melhores & Maiores is the most important award in the sector in Brazil, valuing the performance of companies in the most diverse areas of activity in the country.

“This result gives us immense satisfaction. The excellence of Frigol is being built year after year, with great dedication and focus on the pillars of the company: hard work, entrepreneurship, transparency,

relationships that generate value and operational effectiveness. All of these factors, together and well applied, lead us to exceed goals every day”, Luciano Pascon, CEO of Frigol, stresses.

The leader also highlights that the result of the award for Melhores & Maiores is proof, in practice, that a “strategy well designed and followed to the letter, professional and competent staff, resilience and dedication are essential factors to achieve the objectives proposed, even in an extremely challenging scenario in national and global terms”.

The excellent performance of Frigol also highlights another important survey of the sector, Valor 1000, of the newspaper Valor Econômico. In this ranking, Frigol places 3rd in profitability in the sector of Food and Beverages and 9th best in the agribusiness market.

Frigol closed 2017 with gross revenues of US\$ 450 million, assuming the 4th position among the largest beef

industries in Brazil. Exports represent approximately 22% of revenues. The company processes 180 thousand tons



Luciano Pascon, CEO of Frigol

of meat per year in its five industrial units in operation in the states of São Paulo (Lençóis Paulista); Pará (São Felix do Xingu and Água Azul do Norte); and Goiás (Cachoeira Alta). Production is distributed throughout Brazil and exported to more than 60 countries in South America, Europe, the Middle East, Asia and Africa. The slaughter capacity is of 3,000 heads/day and 400 pigs/day. The company has more than 3,000 employees.

www.frigol.com.br

MICVAC EXPANDS TECHNOLOGY LEADERSHIP IN CHILLED READY MEAL PRODUCTION TO SOUTH AFRICA

Swedish food tech company, Micvac, has revolutionised the ready-meal market. Key to the freshness and quality of Micvac meals are in-pack cooking and pasteurisation as well as Micvac’s patented packaging components: the Micvac tray and the unique Micvac valve. This innovative method for the production of chilled ready meals is currently utilised in

almost 20 countries around the world. The South African brand “The Whistling Chef” by Clover was recently added to that list. Micvac ready meals in South Africa: first taste of African success story The South African Clover company, initially specialised in dairy products, is a leading branded food and beverages group in South Africa



Produced with the Micvac method: high quality, fresh and healthy ready meals full of flavour.



Photo: Clover

A flash mob of whistling chefs introducing these new, delicious and fresh Micvac chilled ready meals without additives in South Africa.

and selected African countries. The “The Whistling Chef” range is Clover’s most recent offering for the ready meal market. It includes South African favourites such as Creamy Macaroni & Cheese, Cottage Pie, Creamy Alfredo, Beef Lasagne and Spaghetti Bolognese.

Nationwide Social Media Success for Whistling Chef Launch

The brand was launched with the help of local celebrities, Pearl Thusi and Ntokozo Dlamini, who led an intrigued crowd to a “The Whistling Chef” tasting event. This was accompanied by a viral promotion campaign that included reports and hits on TV, radio and

different social media channels including YouTube. In the run-up to this event, groups of chefs walked around whistling in various South African cities. Amateur videos posted on social media led to an overwhelming viral success. People tweeted about whistling chefs not knowing about the brand yet. In the middle of this, the big launch event took place, finally revealing the actual product. The event hit the media with reports on a flash mob staged by employees dressed as chefs, and celebrities Thusi and Dlamini sampling “The Whistling Chef” ready meals. During the launch consumers were able to taste the products and test Clover’s promise of delicious convenience food with quality ingredients. Interest for “The Whistling Chef” products is now at an all-time high. Karolina Eldh, Communication Manager, Micvac, is excited: “It’s very nice to see how they have combined social media with fun activities to arouse interest in the meals. This provides great inspiration for the launch of our exceptional products.”

First In Africa to Use the Micvac Method

The collaboration between Micvac and Clover make “The Whistling

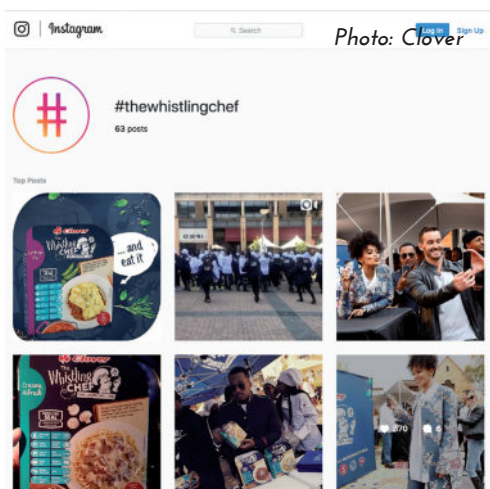
Chef range the first in South Africa to use Micvac’s innovative ready-meal production and packaging method. Clover decided to invest in Micvac’s flexible option with a semi-automatic line using the MSA20 and a smaller tunnel. Its capacity can easily be increased with more tunnel modules and an automatic sealing and filling line. The two companies worked closely together on recipe and tray development. This led to a new tray specifically geared towards Clover’s needs and market requirements. The “The Whistling Chef” range is completely halal and was developed by food technologists and specialists. It has



Karolina Eldh, Communication Manager, Micvac AB

Photo: Micvac AB

been available since 14 th of May at select retailers and forecourts throughout South Africa. The product’s fun slogans perfectly sum up its appeal across target markets: ‘Working late again!’, ‘Mum’s night off!’ and ‘Cooking for one made fun!’ “We are very excited that our collaboration with Clover has led to the release of



Clover’s ingenious launch campaign trending on social media sites like Instagram, facebook and Twitter.



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NÜRNBERG  MESSE



Johan Zetterberg,
Business
Development
Director,
Micvac AB

Photo: Micvac AB

this innovative new range into the South African market,” says Johan Zetterberg, Business Development Director at Micvac. “The Whistling Chef contains real Clover cheese, milk, butter and cream. Only the

best and freshest ingredients are used, and the Micvac method guarantees that they keep their delicious flavour.”

www.micvac.com

SPIRALLING ENERGY COSTS AND CLIMATE CHANGE SPUR MAJOR REVISION OF INTERNATIONAL STANDARD FOR ENERGY PERFORMANCE

* Landmark international energy standard, ISO 50001, revised for the first time since 2011 to reflect current industry insight

* BSI’s Head of Sustainability warns of a ‘perfect storm’ of climate change and surging energy costs for organizations in all sectors

Organizations large and small are facing pressure to cut their energy use, with demands from governments, regulatory bodies, and consumers increasingly necessitating that every organization has in place an energy management policy.

BSI, the business standards company, has revised the original global standard for energy management systems, BS EN ISO 50001: 2018. Drawing on the knowledge and experience of energy management experts globally, the standard has been updated to provide step-by-step guidance on how an organization can reduce its energy costs, become more resilient, comply with legislation and grow more sustainably.

The standard outlines the energy management processes considered to be the current best practice globally and provides a shortlist of activities for establishing policies, processes, procedures and specific energy-tasks to meet an organization’s energy objectives. It

requires an organization to define the desired energy performance, and work towards achieving the stated objective.

David Fatscher, Head of Sustainability at BSI, said: “Unpredictable weather patterns and ever-increasing energy costs have created a perfect storm for organizations. Businesses across a wide range of sectors regularly cite the monetary and environmental costs of addressing climate change as one of their number one concerns.

“ISO 50001 first published in 2011 to address in plain English the surmountable energy challenges of today and tomorrow – and to manage them in a systematic way. Technology, the regulatory environment and scientific knowledge have all changed markedly in the last seven years, and this update of the standard acknowledges that transformation.

“We know that the status quo is unsustainable, so guidance is given on how an organization can improve its financial performance, bolster its compliance, and how energy management can be integrated into every aspect of an organization.

“The bottom line is this: reducing energy costs is a win-win for organizations, who can achieve lower financial outgoings whilst minimizing their carbon footprint. ISO 50001 can assist organizations of all

shapes and sizes in establishing a process for continual energy improvement.”

ISO 50001 increases an organization’s understanding of what types of energy they use, and crucially, how much they are wasting and the cost of that waste. The standard provides tools to reduce energy consumption, thus lowering costs and enabling an organization to become more competitive.

The guidance in the standard improves compliance with energy legislation, regulation and overall climate change mitigation goals; indeed, certification to ISO 50001 continues to be an approved compliance route to meeting the requirements of the UK Energy Saving Opportunity Scheme (ESOS).

Importantly, ISO 50001 does not dictate what an organization’s energy targets should be or how an organization’s energy performance improvement should be demonstrated; rather, it recognizes that every organization is different, with energy targets being an internal concern. ISO 50001 was created to support organizations in this goal rather than to impose.

The updated standard provides greater clarification on concepts related to energy performance and has a stronger emphasis on the responsibility of leadership in driving an energy management policy than the 2011 version of this standard, which the 2018 version supersedes. It also has improved compatibility with ISO 14001 and other management improvement standards, and an amended section on data collection and normalization.

www.bsigroup.com

PROVEN SYSTEM, VARIOUS ALTERNATIVES: SKIN PACKAGING FOR POULTRY

Whether chicken, turkey, duck or goose – today's kitchen not only values poultry meat for its versatile flavours, but also because it provides biologically important protein and contains less fat and therefore fewer calories than other meats. This is why poultry has become extremely appreciated by consumers, as can be seen from its ever-growing share in the global meat consumption in recent years. Poultry meat is a sensitive product. As a result, the demand for suitable packaging has become a decisive factor for many food manufacturers, especially now that the self-service segment is booming. Poultry packaging has to meet many different requirements at the same time: it must offer product safety, adhere to the highest hygiene standards, and should be efficient and cost-effective in production and logistics. Furthermore, consumers increasingly demand convenient handling and improved sustainability.

THE BENEFITS OF SKIN PACKAGING

Of all these requirements, product protection is the most important. Due to the sensitivity of the poultry meat, special hygiene requirements apply to its processing, packaging and storage. In addition, the use of high quality and extremely fresh raw materials is a first prerequisite. A consistent cool chain, as well as processing and packaging under optimal conditions, are just as important.

There are various packaging solutions for poultry. One of them is a proven system, which has recently become more widely used: vacuum or skin packaging. Owing to continuous



TraySkin® for marinated poultry
Easy opening of the skin pack due to SEALPAC's unique EasyPeelPoint system

developments, skin packs that are produced entirely from film reels or that consist of a pre-formed tray and top film, and that are sealed under deep vacuum, offer a number of benefits to manufacturers, retailers and consumers:

Improved Shelf Life and Product Quality

Through skin packaging, the shelf life of poultry, depending on the product and microbiological starting situation, can be increased significantly. A major advantage of vacuum is the hardly measurable residual oxygen content inside the package. The use of high-quality vacuum packaging technology, gas-impermeable films and trays, and thus the exclusion of oxygen, are inhibiting aerobic microorganisms that impair the preservation of food. Retailers are

benefiting from less food spoilage through reduced throwaway, while consumers are happy with the longer shelf life. As such, skin packaging can assist in preventing food waste.

However, not only improved freshness, consistency and shelf life of meat products speak for skin technology. Poultry products can also benefit from better taste due to this type of packaging. The meat juice, an important flavour carrier, is retained when packaged under vacuum, as the tight-fitting skin film prevents drip-loss. A further positive effect can be seen with marinated,

ready-to-grill poultry. As the product is closely surrounded by its marinade, it is able to fully develop its flavour. This leads to excellent aroma and perfectly tender meat. The result: a real BBQ treat, with the additional option of preparing the meat in the oven outside the grill season.

Reliable Product Protection

Hygienic packaging is a first requirement for the protection of sensitive poultry meat. Modern skin technology produces hermetically sealed packs. These benefit from innovative packaging materials, such as films of different compositions that have an excellent barrier against external influences. At the same time, these materials are extremely thin and yet particularly resilient. They prevent puncturing of the film, even in the case of demanding shapes



or bone-in products. As an example, large poultry parts can now also be perfectly skin packaged.

Attractive Product Presentation

From a marketing point of view, skin packaging offers a number of advantages. It supports retailers with a particularly attractive visual presentation on the shelf. The poultry is clearly visible and can even be 'touched', owing to the 3D effect of the film that fits like a second skin. As such, it demonstrates the manufacturer's integrity for showing the product the way it is and creates confidence with the consumer. Due to the secure fixation of the product, for example in a solid skin tray, the poultry becomes an eye-catcher at retail. The packs can be promoted standing or hanging while saving valuable shelf space.

Convenient Handling

Also from a consumer's perspective, skin packaging offers a number of benefits. First, the product is visible from all sides. In addition, the poultry product can be kept longer in the refrigerator without loss of quality. Modern materials and processes also make handling of the packaging particularly easy. Innovative opening aids prevent the need for hand tools, like knives or scissors, while re-closable systems support longer storage with optimal product quality. Functional packaging, such as ovenable skin solutions, facilitate the heating



TraySkin® xplus for whole birds
SEALPAC's special vacuum skin pack for products with high protrusion.

process and guarantee a successful preparation. In addition to this, skin packs are suitable for freezing and can easily be defrosted.

VARIOUS SKIN ALTERNATIVES

To sum it up: skin packaging of poultry products can create benefits along the entire distribution chain. However, not every skin packaging system is the same. Today, there are quite different versions of this innovative vacuum packaging technology. SEALPAC, a specialist in the development of such vacuum packaging solutions, would like to highlight the following:

Skin Packaging in Trays

With the TraySkin® system, poultry products are hermetically sealed inside a pre-formed tray with a highly transparent barrier film that fits the contours of the product like a second skin. This provides stability to the product, allowing for vertical presentation at retail. In case of

marinated products, because the contents are securely held inside the tray, the product is able to fully develop its flavour. An optional second top film allows for easy stacking or labelling. The created headspace can even be used for extras, such as seasonings or recipes. The TraySkin® system is suitable for a wide range of products, such as chicken breast, thigh and even whole birds.

Ovenable and Microwavable Skin Packaging

New materials have made it possible to produce ovenable or microwavable skin packs that allow for easy and error-free preparation of meat by consumers. In this case, the poultry is skin packaged in a heat-resistant tray that can be placed straight from the freezer or refrigerator into the oven or microwave. The controlled internal pressure inside the vacuum pack leads to a gentle cooking process



Ovenable skin pack in aluminium tray
TraySkin® allows for no-touch cooking in the traditional oven.



that preserves taste and consistency. To consumers, such skin packs stand out for their convenience and hygienic handling, as they prevent any contact with raw products whilst keeping their oven or microwave clean.

**Paper-Based Skin Packaging:
FlatSkin®**

With regard to food packaging in general, another aspect is playing an increasingly important role: the demand for more sustainability. Manufacturers are making every effort to reduce the amount of packaging material without sacrificing product safety. Consumers, on the other hand, pay ever more attention to recyclable packaging that should nevertheless provide them with convenient handling. With this in mind, SEALPAC has now launched its FlatSkin® system that combines a cardboard carrier and skin film. This carrier is made from bleached or unbleached fibre (with FSC or PEFC certification), and can be printed on both sides by means of low-migration printing inks



FlatSkin® for fresh poultry
Secure fixation and attractive presentation of various poultry products

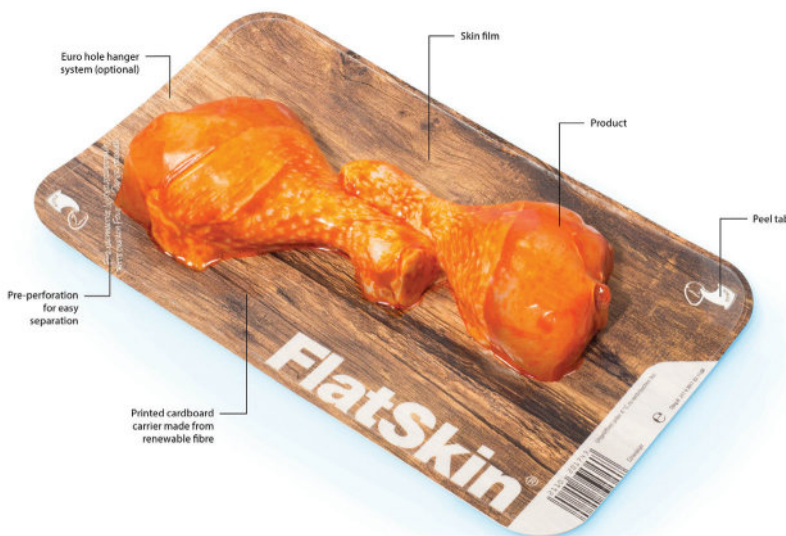
and varnishes. The carrier is coated with a polymeric protective layer. A highly transparent barrier skin film fixates the product directly onto its flat support, which allows for excellent vertical presentation. A peel tab simplifies the opening of the skin pack. After taking out the product, the thin polymeric layer is

easily removed from the cardboard to allow for separate disposal. By using this new skin system, up to 75% less plastic is used compared to common skin packaging. At the same time, due to deep vacuum, the shelf life of the packaged poultry products is improved even further. That is why FlatSkin® convinces in terms of sustainability. Finally yet importantly, the extremely flat tray offers optimal branding opportunities, for example to highlight specialty products (e.g. bio or organic poultry).

THE PERFECT MATCH

No matter which type of skin packaging system a manufacturer selects for his poultry products: every single link in the distribution chain counts. In order for sensitive food items to finally end up fresh on the consumer's plate, first-class products, innovative packaging technologies and modern packaging materials must be perfectly matched to each other.

www.sealpacific.com



The FlatSkin® system
Sustainable, ecological and with outstanding appearance

PLANT & MEAT: PROTEIN IN HARMONY

By Henk Hoogenkamp

Part 1

The plant-based meat market still has a long way to catch up the conventionally processed meat market. Globally, the processed meat market is US\$ 148 billion (2018), far outpacing the US\$ 2.2 billion in packaged plant-based meat analog sales. The gap is narrower in the US, where about US\$ 30 billion (2018) processed meat sales compares against US\$ 700 million in plant meat sales. In the US, Quorn takes the No. 1 spot, followed by Morning Stars (Kellogs) and Beyond Meat. Whole Foods (an Amazon-owned company) carries most of the leading plant-based meat alternatives.

These days, the food and meat industry stands at an unhappy T-junction, because food and meat production is on the frontline of climate change. The industry is one of the largest contributors of human-induced greenhouse gas emissions causing global warming.

There is no question that the collective food industry is highly vulnerable to the repercussions of climate change, resulting in food insecurity and subsequently uncertainty in supply chains. Intensive animal farming -for example- is one of the main sources of human-induced greenhouse gas emissions accounting for some 15 percent of the total emitted in the atmosphere.

By altering the biophysical conditions of agricultural crop growing, long-term disruption of both the ecosystem and human health can be expected. Rising climate temperatures could potentially shift growing seasons. The extra carbon dioxide that is



emitted into the atmosphere can change the chemical makeup of plants by diluting important macro- and micronutrients such as protein, vitamins and minerals.

For many people living in affluent societies, a reduction in daily nutrients is not such a big deal. However, for the billions of people living in poor societies, a reduction of essential dietary intake can have severe long-term health consequences. For example, countries like Indonesia, and Bangladesh, rice accounts for 70 percent of the calories and the population has little choice to compensate by choosing other foods.

In a way, extra carbon dioxide that is emitted and make crops like rice and wheat less nutritious sound counterintuitive, because plants need

carbon dioxide for photosynthesis and therefore beneficial to grow. However, it seems that plants have a certain optimum balance of carbon dioxide uptake from the air and the nutrition uptake from the soil.

Platform of Change

Tackling climate change, including the taxation of agricultural greenhouse gas emission is a topic that is appearing on the horizon of debate. These rather revolutionary ideas are combined with moves to incentivize farmers to adopt regenerative practices to sequester carbon -putting back CO₂ into the soil.

The decarbonization through the mobilization of agricultural resources is something that is likely to become

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The Global Sustainable Seafood Initiative recognises the GLOBALG.A.P. Aquaculture Certification System V5.1-1 to be in alignment with all applicable Essential Components of the GSSI Global Benchmark Tool V1.0.

a serious topic of debate; though it is also likely that considerable pushback will happen from stakeholders with a different agenda.

So the question is not if, but when the food industry will collectively embrace regenerative agriculture by sensibly using systems -the electronic ledger methods that allows transactions to be verified autonomously- like smart technologies to improve efficiency where CO2 (carbon) can be taken out of the atmosphere and return it to the soil, thus improving its "health" and productivity. As a bonus, over time, also the reliance on chemical fertilizers can be reduced. Examples are crop rotation, cover cropping, mixed farming and the use of cellular agriculture such as cultured milk protein and cultured meat, not to mention the advantages of hydroponic or aquaponic technology.

A Fundamental Rethink

The future of food requires a fundamental rethink of what people will eat. It may sound drastic, but it will be essential to eat more plant and less meat. If every one on the planet Earth ate a US-style diet, up to 5 times as much meat as in 2018 would be needed by 2050.

The human population could reach 10 billion in 2050 and nourishing without desecrating the planet is one of the biggest challenges. Creative solutions and unpalatable compromises will be needed to start another green revolution beyond today's use of mechanized farming, modern fertilizers, effective irrigation, and improved seeds to increase harvest yield output.

There is disconnection between how food is produced and how people

think it is produced. The farming sector is largely industrialized and consumers somehow do not want to let go of their idyllic view of the farming countryside. The realities of mass farming are quite different, especially when it concerns intensive animal production.

By 2050, the world will need to boost agricultural production by at least 70 percent. Specifically, sub-Saharan Africa has huge potential to achieve agricultural production with around half of the world's unused agricultural land -4.5 million sq. km- in that continent. Yet, it should be recognized that Africa has a series of major challenges to tackle, some of which paint a bleak picture for future generations.

Unsustainable Going Forward

The current agriculture model is unsustainable and modern food



production methods will be needed to keep up with the world's rapidly growing population. As the population grows, so does the need for ecological and nutritive sustainable foods with manageable environmental footprints. To summarize, animal proteins are packed with beneficial nutrients and vitamins, but very inefficient to produce. Plant proteins are environmentally sustainable but lack essential amino acids that the human body requires.

Some of the changes need to be radical in terms of production and consumption. To meet the demand, this translates to 2 percent annual growth on average in agricultural output through 2050, which is highly unlikely under the current practices. To basically achieve the objectives more food for the entire world - not only for the happy few - it makes sense to freeze the current agricultural footprint, improve land and water efficiencies, embrace modern cellular biotechnology, and shift diets (partly) from meat to plants. In addition, it is important to reduce the huge food waste in the various steps between harvest and point of consumption.

The plant protein movement is not "anti meat" or "anti dairy". Rather, it is about recalibrating supply chains and ultimately incorporates disruptive technologies, including cellular post-animal systems. The key factors are a transition to more sustainable protein production, while nurturing the welfare of animals, environment, ecology, and generating to a lower-carbon food platform.

It is expected that meat processors, including companies like Cargill and Tyson, will tap into the alternative protein market, be that for meatfree products, cultured meat and possibly

also insect protein. These emerging market drivers will continue its growth patterns and have the potential to capture a material share of traditional animal protein demand. Growth in alternative protein products can ultimately reach one-third of total protein demand in 2025.

The Changing Consumer

By 2018, about 70 percent of Germans and 40 percent of Americans will eat meatless meals once a week or more. In the UK, every fourth meal is now vegan or vegetarian. These consumers are known as flexitarians, a group that is rapidly increasing

now that the millennial consumers (1982-2004) are coming to age.

These millennials have increasingly recognized the value of protein of both animal and plant origin and, subsequently, the legacy meat companies have started to approach plant protein foods as a business opportunity -not a threat. There is no question that the meat industry will diversify and welcome plant protein formulated foods to their product portfolio line-up.

As consumer tastes shift and entrepreneurial-driven startups seek to create meat analogs that sublimely imitate the real thing, legacy meat packers are jumping onto the bandwagon so as not to be left behind in investment or acquisition opportunities.

Too Fat and Too Skinny

Never before has food been such a global issue. Overweight and obese people sharing the planet with chronically malnourished and hungry populations represent both sides of the spectrum. All things considered, the bottomline is how to produce more food with less land, as well as reduce waste and improve equal access to wholesome food at less price volatility.

Besides the availability of sufficient cropland, variables such as food waste, spoilage, politics and economics are increasingly infringing upon the basic human right of access to food for many underprivileged world citizens. According to the Joint UN report (September 2014), slightly more than 800 million people are chronically undernourished. Asia -the world's most populous region- is home to the majority of the hungry (525 million people), with most of the balance in sub-Saharan Africa.

Hunger kills more people than malaria, tuberculosis and AIDS combined. Hunger kills about 1.3 million more people than cancer. Hunger reduction requires sustained political commitment and an integrated approach that needs to include public and private collaboration. This is especially true for the vulnerable, particularly to address the micronutrient deficiencies in mothers and children under five years of age.

Almost every country in the world, affluent and poor, faces a serious public health risk due to the level of nutrition, whether from malnutrition, obesity or micronutrient deficiencies. It is estimated that about a third of the global population suffers from hidden hunger, better known as micronutrient malnutrition. The cost of poor nutrition is huge: stressed health systems, premature death, and a severe drag on economic progress (UN FAO/WHO, November, 2014).

In certain Latin American and African countries, malnutrition has been substantially reduced. Unfortunately, more and more people are now facing another type of malnutrition, which is obesity. The World Health Organization expects childhood overweight and obesity prevalence in Africa to reach 12.7 percent in 2020, up from 8.5 percent in 2010. It is clear that excessive sugar consumption in countries like South Africa stands at 75 grams per day (2016), three times the daily recommended amount by the American Heart Association. Most of the sugar is consumed via sugar-sweetened beverages.

Many political and financial issues hound governments so that they no longer have the stomach to tackle issues causing future food uncertainties and possible shortages. For now, it seems that food insecurity has been moved to the back burner.





There is little doubt that providing enough food, particularly sufficient protein, for the rapidly increasing world population is a challenging task. The fact is that more than 500 million people are suffering from protein deficiency, while emerging research also suggests that the aging population will require extra protein supplementation in their diet to prevent sarcopenia.

Undoubtedly, the sustainable agricultural production of food of animal origin represents the biggest environmental challenge. The love for meat by consumers might well be on a collision course with the need to rebalance the consumption of more resource-efficient plant proteins. In other words, it is time to move actively to a more environmentally balanced diet to reduce the consumption of foods like meat and dairy with a higher environmental impact.

Meat, Dairy & Socioeconomic Changes

Worldwide socioeconomic changes, such as population growth, increased income and rapidly increasing urbanization have significantly changed dietary patterns, and in particular, animal protein consumption.

Urban growth in the coming years will be heavily influenced by migration in countries with low- and middle incomes. In addition, population in developing countries tend to be younger which will speed up urbanization; both factors that will impact food consumption patterns and diets:

- * Increased demand for processed food.
- * Increased demand for convenience “ready-to-eat” food.
- * Increased demand for “out-of-home” consumption.

Global population growth will not be uniform and strong growth is especially seen in sub-Saharan Africa and Asia. Going forward, for these reasons, it is projected that developing countries will be responsible for more than 80 percent of the estimated increase in meat and dairy consumption. It is likely that in developing countries the risk is real that demand will surpass supply.

Conflicting Alignment & Disruptive Green

Health and environmental agendas are not always aligned with the current dietary recommendations. For example, in affluent countries, the recommended amount of meat consumption is significantly less than current consumption levels. People are encouraged to eat more vegetables, fruits, wholegrain, low-fat dairy products, and omega-rich seafood. Instead, they consume more hyper-processed foods containing hidden levels of sugar, sodium, transfat, and refined grains. The price differences between healthy and unhealthy foods are widening, which may contribute to food insecurity and increase health inequalities. The latter could further exacerbate social inequalities in health.

The global demand for meat will require industry to grow animals faster than ever before. Demand for meat is a primary growth driver especially in the developing countries. Southeast Asian countries, the meat consumption will rise faster than population growth.

Meat is a mainstay, as evidenced by global data on its production from 2000 through 2018:

- * 75 % increase in chicken
- * 35 % increase in pork
- * 14 % increase in beef

Average Global Meat Consumption (2018)

- * Beef 9.7 kg
- * Chicken 15.4 kg
- * Pork 16.3 kg

These figures are lower than the consumption for developed countries, and thus illustrate that significant growth of animal protein is about to happen in developing countries. The total world production forecast for meat and poultry shows an increase of about 16 percent from 2018 to 2025, or from 308 million metric tons to 336 million metric tons.

In developed countries and affluent societies, there is a huge trend towards consumers who are cutting back on their meat consumption for health and sustainability reasons. The number of so-called “flexitarian” affluent consumers is expected to increase to further grow and drive development of new foods formulated from plant proteins. Obviously, consumers are looking for innovative options to take the inherent benefits of plants into their daily lives.

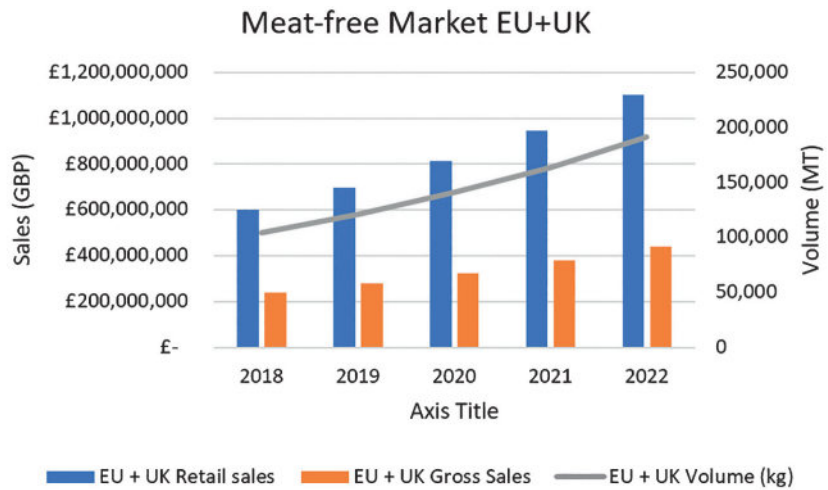
The overall meat consumption in the US stands at 125 kg a year (2018), which is considerably more than the average body weight of an adult. Americans are at the top of the global pyramid of carnivores. US consumption of beef per person is 38 kg, while chicken consumption is at 45 kg per person. When these numbers are extrapolated on the world population, the question of sustainability has an easy answer.

Consumers in developing countries such as China, India, and Indonesia are especially gobbling up more meat and dairy products. It is difficult to predict trends in developing markets. Often continuing geopolitical issues and

significant currency volatility impact these markets. On a wider horizon, however, most developing nations will deliver sustained and profitable business expansion. It is increased purchasing power that mainly gives an intensified appetite for protein. This is especially true for consumers in emerging economies. To “meat and feed,” livestock farmers expand their production and heavily rely on sharply increased harvests of the main crops: soy, corn, wheat and rice.

It often happens that developing countries adapting to economic

for at least one billion people –or some 15 percent of the world population. As income rises, meat and dairy are the preferred sources of protein. Despite the fact that international organizations would like to reduce meat intake, the opposite will happen. For example, it is predicted that globally meat consumption will rise 2.0 percent a year from 2018 over the next decade (USDA). The United Nations FAO had projected that, globally, the average person will consume in 2016 about 45 kilos of meat, versus 40 kilos in 2007, and 35 kilos in 1991.



nationalism are struggling to “beef up” their meat supply to service the growing appetite of the rising middle class. Expanding domestic meat farming and feedlot industries is difficult to achieve without relaxation of protective legislation. Beef especially remains a luxury food. For example, the projected beef consumption in Indonesia in 2018 is only 2.6 kilograms per person, as compared to the US with 38 kg per person per year. In comparison, the total meat consumption in India and Bangladesh’s are among the lowest in the world, with annual per capita intake being just 4 kg.

In developing and poorer countries, protein deficiency remains a problem

About the author:



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ISHIDA X-RAY ENSURES HIGH QUALITY FOR SAUSAGE EXPORTS

An X-ray inspection system from Ishida is enabling leading German meat and sausage manufacturer Goldschmaus Natur to meet the highest quality standards required for the export of its Frankfurter sausages to Japan.

The Ishida IX-GA-2475, which has been designed for inspecting small products at high speeds, has been installed at Goldschmaus Natur's factory in Garrel, Münsterland to check for foreign bodies in unpacked Frankfurter sausages produced according to a special recipe for the Japanese restaurant and catering industry.



The sausages are taken to the production line in strings on special

smoke trolleys and manually fed onto the processing line. Once cut from

the strings, the individual sausages pass through the X-ray system at

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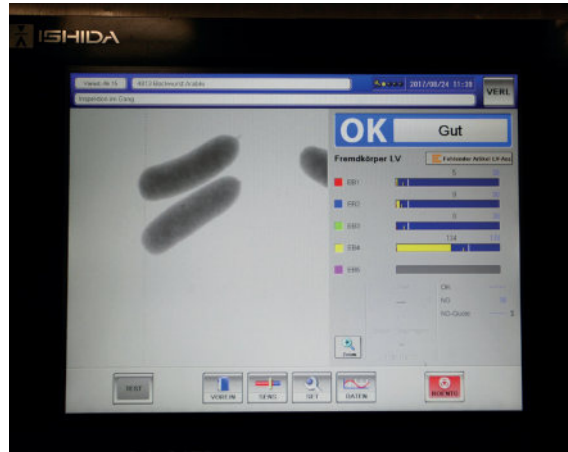
The patented technology behind Ishida's X-ray inspection systems is based on software incorporating an intelligent genetic algorithm. By analysing image data over a number of generations, the machine achieves an extremely high level of inspection accuracy. Since similar contaminants are usually found again and again in sausage manufacture, the system can be optimised to look for these objects. This collects valuable visual and numerical information that helps to eliminate recurring sources of contamination. In this way, Goldschmaus Natur can demonstrate that its production and packaging processes are properly and correctly performed.

The Ishida IX-GA 2475 is operating at a belt speed of 60 metres per minute, inspecting up to 200 sausages per minute. While the X-ray inspection system could potentially deliver even better performance, this is limited by the upstream cutter.

Despite its high speed, the system reliably detects foreign bodies such as pieces of metal, glass and plastic as well as gristle and bone. The

requirement to reliably detect pieces of metal with a diameter of 0.6 mm, glass with a diameter of 2 mm and plastic with a diameter of 5 mm has been fulfilled, as regular functional checks with specially prepared products demonstrate.

In addition, the system is also able to reject



processes are properly and correctly set up.

The new X-ray inspection system is used by Goldschmaus Natur mainly in a two-shift operation and, thanks to its IP 65 protection rating, can easily withstand the humid production environment. It did not take long for the operators to familiarise themselves with this largely maintenance-free machine. The easy-to-use X-ray system features an automatic set-up function and is ready within 90 seconds. Fine adjustments can be made during operation without interrupting the production. Up to 100 programmable pre-sets allow rapid product changeovers.

For operations manager Michael Schmolke, the benefits of this X-ray inspection system

are clear: "It can find all sorts of foreign bodies – and not just metal. Also, no other system on the market can check for foreign bodies at such high speeds."

Goldschmaus' customers, too, have been informed about the new X-ray inspection system, which sends out a clear message that Goldschmaus Natur is committed to maintaining the highest standards of quality control.

www.ishidaeurope.com



sausages that exhibit other flaws such as clumps of herbs or damaged items. A special high-speed reject arm directs rejected sausages into a reject bin. The data log collects all information and helps to eliminate recurring sources of contamination, while also providing confirmation that the production



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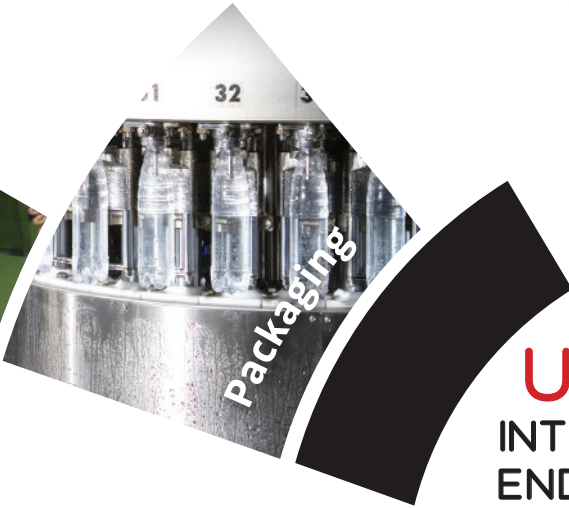
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SANITARY ZERO-MAINTENANCE SCREEN CUTS VIRGINIA POULTRY'S BIRD WASHER WATER USAGE BY 50%

By Patrick Roberts

Screening and recycling the water stream from Virginia Poultry's bird washers is reducing its water usage by 170 GPM, an estimated 19 million gallons annually and savings of \$160,000 each year in water purchases and treatment. The newly-installed Sanitary, Zero-Maintenance liquid/solids separation screen from Lyco Manufacturing has also provided the turkey processor with the most sanitary rotary-drum screen in North America.

For poultry processors, water consumption, water reuse, ease of sanitary cleanup and robust operation are key elements driving plant operation and machinery selection today. One turkey processor that knows this well is Virginia Poultry Growers Cooperative (Virginia Poultry or VPGC) located in Hinton, Virginia. Processing 25,000 tom turkeys per day, averaging 40 - 45 pounds per turkey, Virginia Poultry produces in excess of 250 million pounds of turkey annually. The plant 100-percent debones the whole turkey, sending the parts out to other plants for further processing.

"Turkey processing is a high-water-usage activity," said Phil Miller, Engineering Manager with Virginia Poultry. "We are processing 900,000 to 1,000,000 gallons of water each day through our on-site wastewater treatment plant. For every gallon we buy, we have to pay to get rid of this high-fat and high-protein-content water."

"From a maintenance viewpoint, running one production shift per day, we devote a full eight-hour second shift to cleaning and sanitation



Sanitary Zero Maintenance Screen

of the entire plant," added Miller. "Ensuring product cleanliness and integrity is critical."

VPGC has, since the beginning, been committed to producing an exceptional product. It was one of the original processors of antibiotic-free (AFB) and organic turkey products. Its programs have consistently been recognized by the trade as superior, and verified independently as exceeding government and industry standards. VPGC administers a proprietary organic program that carries the USDA Certified Organic Seal.

The cooperative is America's eighth-largest turkey processor, and the second largest in Virginia, supplied by 165 contract turkey growers spread throughout the Shenandoah Valley of Virginia and West Virginia.

Employing 560 people working within its 250,000 square-foot, state-of-the-art processing plant, Virginia Poultry's business has continued to expand since it incorporated in 2004. Along with that growth, the cooperative has also continued to invest into upgrading its facilities and equipment.

Bird Washer Water Reuse

Its most recent development, in January of 2017, is the addition of a sanitary, zero-maintenance liquid/solids separation screen which utilizes the water stream from its final bird washers, screens it, separating the solids from the water stream, then reuses that water for its inside/outside bird washers.

"In essence, we are cleaning up the bird wash water stream, then using

that same water to wash the birds with twice,” continued Miller. “We are getting double the use out of the same water. In the process we are saving 170 GPM. Over a 12-month timespan, that equates to saving 19 million gallons of water, with an estimated cost reduction of \$160,000 in water purchases and treatment.”

Sanitary, Zero-Maintenance Screen

The Sanitary, Zero-Maintenance liquid/solids separation screen, developed by Lyco Manufacturing, was designed to not only effectively screen out solids to a very close tolerance of .020 inch, but also to be the most sanitary rotary-drum screen in North America, as well as requiring virtually no maintenance.

The screen utilizes rotary action to separate solids from the water. Effluent enters the drum, and as the drum rotates the suspended particles are screened down to .020 inches. The water is then pumped to Lyco’s dual-canister water filtering system.

“A dual-canister water filtering system takes prescreened water at a rate of 50 - 400 GPM from the final bird washer water stream,” explained Miller. “The two-canister filters remove more solids, making the water clean enough to be used a second time.”

Self-Cleaning

The Sanitary, Zero-Maintenance screen, comes with a spray bar for cleaning during operation. Additionally, Spray balls inside of the cover in

the tank enhance the CIP during sanitation.

The system was designed to have 100 percent complete access, as well as side-opening doors to easily access the tank inside.

Mechanical Simplicity

The Sanitary, Zero-Maintenance screen eliminates trunnion wheels and bearings. It rotates on oil-impregnated bushings. Its maintenance-free design removes the need for routine lubrication of bearings.

“The sanitary screen is very practical,” said Miller. “It is a simple but effective design. We have been running the machine eight hours a day, five days a week for several months now, and we have not had to do almost nothing to it.”

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SUSTAINABLE PACKAGING SOLUTIONS WITH ADDED VALUE

From 25 to 27 September MULTIVAC will be presenting at FachPack 2018 in Nuremberg a complete range of solutions for packing food and non-food products. A major focus at the trade fair will be on the presentation of packaging concepts, which meet the growing requirement for ease of re-cycling and saving of resources. MULTIVAC will be demonstrating a R 105 MF thermoforming packaging machine and a T 800 tray-sealer, which is integrated in a completely automated line, both of which will be running recyclable materials based on paper fibre. In addition to other exhibits, the new X-line generation of thermo-forming packaging machines will also be presented, which is equipped for the digitalised production technology of the future thanks to its comprehensive sensor system, and which sets a new benchmark in the market.

Multifresh™ Paperboard Application On Traysealers

MULTIVAC will be showing a T 800 traysealer, which is integrated in an automated line, for producing MultiFresh™ skin packs using pre-cut board. Pre-cut board with different weights or sealing and barrier layers can be run. The packs can be designed in such a way, that the end user is able to separate the carrier board from the plastic barrier layer and then put it into the paper recycling.

The traysealer line includes a multifunctional GMS 520 singlecut meat portioner from TVI, which can process all types of red meat and poultry at a very low level of processing cost for every portion in any consistency,



and always optimised for weight and product trim. Pack labelling is handled by a L 310 conveyor belt labeller, which applies a D label to the packs. In addition to this, a blow-on applicator is integrated in the line for applying promotional labels, which are increasingly being used for packs on the fresh food shelves.

Multifresh™ Paperboard On Thermoforming Packaging Machines

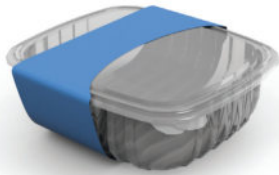
The production of MultiFresh™ PaperBoard packs on thermoforming packaging machines will be demonstrated on the R 105 MF. A high level of efficiency is a feature of this particular solution. The running of reel-fed materials also contributes greatly to this, since they have a higher level of material efficiency than pre-cut board. As regards the pack design, the spectrum ranges from unformed packs to formed packs with deeper cavities, in which

products with different heights and shapes can be packed.

A New Benchmark In Thermoforming Packaging: the X-Line

Thanks to its wide range of innovative features, the new X-line generation of thermoforming packaging machines offers customers a high level of added value, when it comes to pack quality, process reliability, output and future-proofing. The machine, which has a sensor system unique in the market, produces packs of excellent quality without any loss of packs during start-up, since the machine is already set to the optimum running condition by Pack Pilot at the start of operation, and its parameters are adjusted to the ideal operating point by the extensive sensor system. This leads to significant savings as regards product, packaging materials and production time - and it also ensures that a higher level of process reliability

and cycle output is achieved, which means greater machine output. The innovative die system and intuitive operating concept also contribute to



times, it offers a high degree of flexibility as regards the pack de-sign, the format to be produced and the packaging materials used. The BAS 20 can be



turers, and it is able to accept the paper products directly. A central height adjustment feature on the frame enables the label dispenser to be adjusted quickly to different working heights, while separate servo drives for the top and bottom transport belts enable it to be adjusted to different paper thicknesses and formats. The machine is changed over to other label widths and labelling positions by means of dispensing edges, which can be exchanged very easily, in conjunction with special format plates for the press-on system. Depending on the folded product, this solution is capable of achieving very high speeds of up to 12,000 units per hour.

a high level of process reliability. The new Multi Sensor Control ensures that optimised non-stop mode is maintained.

The constantly generated process data forms the basis for providing MULTIVAC Smart Services, which enable the packaging procedure to be run even more efficiently. The X-line is perfectly equipped for ongoing factors such as Industry 4.0, preventative maintenance, condition monitoring, benchmarking or producing comprehensive analysis of overall equipment effectiveness.

Economical Solution For Producing Shaped Contour Packs, Even In Small Batches

The R 145 thermoforming packaging machine with its innovative BAS 20 shaped contour cutter enables shaped contour packs to be produced economically, even where it is a case of small batches. Thanks to short set-up

designed to cut without trim waste, and this therefore contributes hugely to reduced consumption of packaging materials and to lower pack costs.

Labelling And Inspection Solutions

MULTIVAC will be demonstrating its comprehensive expertise in the labelling and inspection sectors with three selected exhibits. The L 35x labeller series was specially designed to apply sealing labels for closing the open edges of folded products such as for example package inserts, outserts and mailshots. The L 352 model will be presented at FachPack with a label dispenser, which applies a sealing label and self-mailer to the back of package inserts and outserts, as well as applying a label to the front edge of the product and a further label to the rear facing edge.

The L 352 can be installed on folding machines from various manufac-

MULTIVAC will be showing the I 410 visual inspection system from its portfolio of inspection solutions. Thanks to its high-resolution and height-adjustable line scanners as well as its powerful image processing, it ensures that reliable label and quality inspection from above and below is achieved. The areas of use range from completeness checks on the packs, through to presence and position inspection of the labels, and right up to checking printed text - and this includes pattern and character recognition, character verification and inspection of legibility and codes. The progressive image-capturing technology enables extremely good images in high resolution to be transmitted and verified even at the highest speeds within the packaging procedure.

In addition to this, the exhibits will also include an I 211 checkweigher with integrated metal detector. The detector coil used works with multi-simultaneous frequency and thus offers increased sensitivity as well as improved product compensation. This enables the smallest metal foreign bodies to be detected reliably, even at a high level of product effect.

www.multivac.com

INNOVATIVE, FLEXIBLE PACKAGING SOLUTIONS - COMBINING EFFICIENCY, FUNCTIONALITY AND GREATER SUSTAINABILITY

Combining modern packaging solutions with efficient manufacturing, attractive optics and greater sustainability - this is the key idea of Schur Flexibles presence at FachPack 2018. The packaging specialist will present its portfolio of innovative packaging materials and concepts at the packaging sector's leading trade fair in Nuremberg, Germany, from 25-27 September. Central to Schur Flexibles showcase will be its focus on protecting the environment and saving natural resources. The Schur Flexibles Group stand will present the entire spectrum of the Group's commitment to sustainability, featuring all the latest functional and sustainable developments, as well as highlighting the specific field of excellence of each Group company.

Focus on Greater Sustainability

Packaging ensures that products receive the necessary protection. In many sectors, e.g. for certain foods or pharmaceuticals, packaging is essential. As a supplier of flexible packaging solutions, the Schur Flexibles Group assumes responsibility for the environment by making products and processes as environmentally friendly as possible. At the same time, the company strives to find the optimal balance between business goals and the sustainable use of our planet's resources.

EU guidelines currently emphasize higher levels of recyclability and encourage companies to find

environmentally friendly alternatives, but in 2030 regulations will come into force that exclusively allow recyclable plastics within the EU. Today, Schur Flexibles Group is ensuring that its packaging solutions are future-proof by investing in recyclable solutions for a wide variety of applications.

Additionally, the Group is investing in the development of new packaging solutions that offer maximum product protection and consistently high functionality at the same time as minimising their environmental impact. These solutions are characterised by significant material reductions, the use of alternative and renewable resources, and in some cases, they result in completely recyclable products such as FlexiClosere.

Furthermore, the Group has placed environmental responsibility and

sustainability at the centre of all company processes and activities. To find out more about the 360-degree sustainability concept and the innovative packaging solutions offered by the Group, Schur Flexibles experts will be on hand to answer questions at the FachPack Sustainability Lounge.

R&D - Pioneering Flexible Packaging Solutions

Schur Flexibles product innovations are created in cutting-edge research facilities in Finland, Germany and Denmark and are the result of intensive collaboration with customers and partners. The continuous optimisation of products and processes underlines the Group's drive for innovation and highlights its role as an industry leader for quality, product range, flexibility and sustainability.



Photo: Schur Flexibles Group

Recycling is the way to efficient use of resources. Schur Flexibles' top film FlexiClosere meets this high standard.

Photo: Schur Flexibles Group



Schur Flexibles product innovations are created in cutting-edge European research facilities like at the PackScience Center in Germany and are the result of intensive collaboration with customers and partners.

At FachPack, Schur Flexibles is presenting a broad range of packaging solutions that set new standards. These include the fibre-based DanaFibre, a bottom web suitable for thermoforming which consists of 75 % renewable materials, the extremely thin but highly tear-resistant BarrierTop X 35 films, and E-base, the high-performance thermoforming PP rigid films.

A One-Stop Shop Under the Schur Flexibles Umbrella

The comprehensive portfolio of services offered by the Schur Flexibles group of companies provides complete solutions from a single source. In addition to extrusion, printing services cover a wide range of processes: from gravure printing to flexo and offset printing, as well as the recent addition of digital print. Schur Flexibles guarantees fast processes and delivery times whatever the

size of the print run - from large to small batches. The company is also a specialist for sensory enhancements such as optical effects or tactile effects that engage the consumer at the point of sale.

Schur Flexibles Centres of Excellence - Specialist Know-How for All Packaging Enquiries

Ideal conditions, expert advice - this is what customers will find when visiting the Schur Flexibles stand at FachPack. The Group encompasses 15 businesses and 23 production sites throughout Europe.

Each of these is highly specialised and a leading service provider in its area of expertise. The range covers specialisations in food and pharmaceuticals at Danapak, polymer expertise at PS, a comprehensive

range of skin and shrink films at Dixie and the digital print know-how of UNI Packaging, the latest addition to the Group. Apart from high-performance printing services, UNI Packaging also offers a wide spectrum of flow wrap packaging and innovative stand-up pouches. Schur Flexibles Group has the perfect solution for all packaging demands - from choice of material to printing to enhancement to further processing.

"For every requirement, a matching centre of excellence. This sums up our expansion strategy in a nutshell. Our current acquisitions have enabled us to expand our services and add important technologies that open up new markets. Not only can we offer customers the best solution for every application, we are also always close at hand," says Frank Hilbich, Head of Sales Unit DACH and Export.

www.c-b-c.de

TSCA 160 - THE ECONOMICAL PACKAGING SOLUTION USING FLAT FILM. NOW ALSO WITH INTELLIGENT PC CONTROL.

Continuous, uninterrupted production out of the question? Think again! With the TSCA 160 automatic transfer-sealing clipping machine from Poly-clip System it can be done. Fully automatic, self-monitoring processes, the use of the more economical flat film instead of shirred casings and the combination of sealing and clipping in a single automatic machine make the TSCA 160 unbeatable.

The TSCA 160 is ideally suited to the industrial production of chubs in plastic film up to a calibre of 160 mm and at speeds of up to 160 cycles per minute in continuous mode. It offers the most up-to-date clipping and sealing technology for today's ever more rationalised production, including large calibre products.

With the TSCA 160, cash can be saved by the use of flat film which is less expensive than shirred casings. The flat film is taken from the roll and processed by sealing to form a ready-to-fill tube, which is then filled and subsequently securely closed by the double-clipping process in the integral clipping unit. The machine will take flat film rolls up to 3,000 metres in length, which represents more than 4 hours of continuous production. No intervention or correction of the film length by the operator is required, and thus continuous, automatic production is guaranteed.

State of the Art with Pc Control

The high degree of automation of this TSCA allows for a considerable measure of process monitoring, involving for example the parameters



stored in recipe management. When irregularities occur the TSCA 160 automatically displays a warning. The operator is intuitively guided by self-explanatory pictograms through the flat menu structure of the SAFETY TOUCH panel. Another particularly operator-friendly feature lies in the first-rate, individually assignable operator control panels, used for inching mode for example. PC control also facilitates rapid and precise signal processing. On the SAFETY TOUCH display the diagnostic system provides direct and clear indication of the machine's operational status as well as analysis of both sealing unit data and filling and clipping times. The USB port for data import and export comes as standard. Also available as an optional extra is the WS Food Standard interface for operational data acquisition via the customer's own network. Automation and operator comfort guarantee even higher operational reliability and maximally efficient machine utilisation.

Economical Thanks to Optimum Use of Material

This TSCA offers once-only loading of film rather than reloading of shirred casings up to 100 times, thus facilitating continuous production. This and the optimum use of material thanks to minimum film overlap at the seam make the machine unrivalled in its class. The TSCA 160 is capable of processing all sealable films, coated and uncoated, as well as laminates, and offers a very wide range of applications for cooked (parboiled) and pre-cooked sausages.

Even in long-term operation the machine remains quiet. State of the art noise reduction technology protects the operator and the production environment. Cleanliness, too, is paramount: the stainless steel used meets the highest hygiene requirements and ensures that the machine has a long service life. Smooth surfaces all around make for rapid and thorough cleaning - the TSCA 160 sets hygiene

HIGH VACUUM FILLERS FROM HANDTMANN OPEN NEW DIMENSIONS IN HAM AND COOKED SAUSAGE PRODUCTION

standards in sausage production. The on-board technology is assured of absolutely watertight protection and will work without interruption.

The TSCA 160 may optionally be equipped with an overspreading function. In conjunction with a vacuum system, air-free filling of these large calibres is guaranteed. Air-free loose filling of shaped products with overspreading is servo-supported, just as the clip pressure setting and separator hole size, and can be stored as a product parameter. The programmable and continuously adjustable conveyor belt speed also guarantees products true to calibre.

Automation That Pays Off

The high level of automation of the TSCA 160 is also reflected in its machine cycle-dependent central lubrication system. Lubrication is an essential function of the machine, and automation ensures that it is no longer neglected and at the same time represents a saving in man hours. It guarantees maximum process reliability and improves the benefits of investment, since wear and tear is reduced and maintenance and downtimes are cut to a minimum. Consequently the service life of the machine is 'automatically' extended, thus increasing the value of the investment.

Furthermore, simple and reliable in-line batch marking of individual products by printing on the flat film using an integral inkjet, hot stamping or thermal transfer printer not only provides consumer-oriented product identification but also supports the first-in/first-out principle in logistics.

www.polyclip.com



Handtmann offers a groundbreaking system for the production and portioning of cooked sausage and ham products based on the world-leading VF 600 vacuum filler technology: the high vacuum filler (HVF) system. HVF 664 and HVF 670 high vacuum fillers open up new dimensions in terms of performance, quality and cost-effectiveness. Examples of the technical highlights are the vane cell feed system, latest generation control technology, Handtmann's servo drive technology and the Intelligent Vacuum Management System IVM. The perfect interaction between these components results in first-class product quality and allows a wide variety of applications while ensuring exceptional cost-effectiveness. The customer benefits from optimum product protection, a high production output and accurate portioning.

By focussing the two HVF 664 and HVF 670 models on clearly defined market segments, target groups and product types, the system is able to cover the entire market volume in all its diversity. Formed ham from small-piece initial product or ground material with pieces weighing up to approx. 500 grams as well as cooked sausage can be produced with maximum quality and weight accuracy for the industrial volume market with the new HVF 664. The HVF 670 covers the segment including

large and whole muscle pieces with individual pieces weighing over 500 grams, up to entire silversides/top sides. Adapted in line with various different performance requirements the HVF 670 is available as the HVF 670-7 version with 7-tonne filling capacity, HVF 670-11 with 11.5-tonne filling capacity and the proven large-scale industry version, the HVF 670-16 with 16-tonne filling capacity. However there are no compromises in terms of processing quality all the versions operate with the proven high vacuum hopper system and the special vane cell feed system for whole muscle pieces.

The requirements placed upon cost-effective automation solutions in industrial ham and sausage processing are continuously increasing. These requirements are met by the Handtmann high vacuum filling technology. The filling and portioning units are compatible with all standard additional equipment and are synonymous with most modern production. The Windows CE-based control system developed by Handtmann combines the mechanical and electronic components to form a perfectly matched and synchronised overall system. As reliable production factors, the HVF 664 and HVF 670 provide process reliability, which is decisive for long-term success in high-performance industrial production.

www.handtmann.de

TECHNOLOGY FROM HESSE FOR ORGANIC ENJOYMENT FROM BAVARIA

As One of the Largest Organic Meat Producers In Upper Bavaria, Packlhof Relies On Solutions from K+G Wetter

The organic sector is booming – and at Packlhof, about 35 kilometres south of Munich, the reason for this is immediately clear to everyone. Idyllically situated on Lake Starnberg, with a majestic view of the Alps, cows grazing peacefully in the pasture, like in a picture book, and chickens eagerly scratching in the straw. The fact that this is the right path was already recognised by Josef Urban in 1981, and, as a “green visionary”, he subsequently switched his business to a natural cultivation. Instead of quantity and medication, the knowledgeable farmer now focuses on quality and pure enjoyment. With success: Packlhof is one of the largest organic meat producers in Upper Bavaria today, and has made a name for itself far beyond the region thanks to numerous awards and its trading partner Alnatura. You can look in vain for nitrite pickling salts and additives in



The organic sector is booming: Packlhof is one of the largest organic meat producers in Upper Bavaria today, and has made a name for itself far beyond the region thanks to numerous awards.

the Bioland-certified meat and sausage products. But there is one thing that Packlhof cannot and does not want to do without: modern technology that meets the high demands placed

on the production of high organic quality. That is why the Bavarians maintain a special relationship with neighbouring Hesse, home to the headquarters of K+G Wetter.

Uncompromising Quality

“The company’s reputation worldwide naturally also reached our ears. And because we do not compromise on quality, it soon became clear to us that K+G Wetter was the right partner for us. In addition, we share common values, because both K+G and ourselves have pure enjoyment as our ultimate goal,” says Florian Holzmayr. Since the sudden death of his father-in-law, Josef Urban, two years ago, the master butcher has successfully continued to run the family business together with his wife, and has stayed true to the course first taken by Urban. As a result, spirits are high when Florian Holzmayr leads us



Shared values: Butcher Florian Holzmayr relies on quality and state-of-the-art technology from K+G Wetter.

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through the in-house production site in Eurasburg, three kilometres from the Packlhof main site. The employees at the machines laugh and joke, while the new vacuum bowl cutter from K+G is running at full speed and is already turning meat into the finest organic salami. As the creative head of the company, Florian Holzmayr came up with the recipe for this, and then transferred it directly from the PC to the machine.

"The Cutcontrol software from K+G was quite certainly decisive for the purchase of our bowl cutter," said the 36-year-old. "It ensures efficient processes and guarantees exactly the same quality because it guides our employees through the production process step by step. And that's much more important to us than it is for regular meat processing because we do not offer anything off the shelf. "The software is easy to operate via the touch panel, which is standard equipment in all K+G trade bowl cutters. Frequently used commands such as the opening and closing of the knife cover are placed on prominently placed illuminated ring keys, other commands are quickly activated in turn by using the panel's clearly-structured display. A further advantage: Due to the software and corresponding settings, the bowl cutter can be stopped automatically, which effectively prevents the accidental over-cutting of the product. "For us, this means that we do not have to constantly stand at the machine to be able to rely on consistent quality."

The Highest Standards of Hygiene

The VCM 120 Vacuum Bowl Cutter processes around three tons of meat day after day. Eight more are running through the grinder, which is also from K+G. "We bought both machines in October 2017 because we know from experience how robust and reliable

they are. This is extremely important to us because we cannot afford any failures", emphasises Florian Holzmayr. "In addition, we work to the highest hygiene standards, and so the simple cleaning process for the machines plays a major role for us. And it really is a perfect process." K+G ensures that with lots of clever details. All stainless steel surfaces on the machines are thus designed so that no cleaning water accumulates but simply drains off via



The touch panel, which is integrated as standard into all K+G trade bowl cutters, makes it easy to control the Cutvision and Cutcontrol software solutions.

sloping planes. In addition, the closed stainless steel cladding prevents dirt from accumulating in small cracks or welds. Dust and moisture reliably remain outside due to special seals on the inspection openings. Another

special feature is the special flushing channels behind the rotating components such as mixing shaft, feeder worm or meat worm. Using a hose, the non-accessible area behind the shafts can therefore be rinsed with water and an additional cleaning agent via rinsing connections on the machine body, and cleaned as best as possible. The cleaning water is then simply passed through a drainage channel across the machine floor to the outside.

K+G also makes the work of Packlhof operators easier with other well thought-out ideas. The grinder, for example, has the so-called "Easy Access" entry point, a generous opening to the mixer space, which allows cleaning to be carried out much faster and more thoroughly. The intelligent sorting device also ensures clean workmanship. This sets hard parts to the side, which allows the rejected material to be carefully checked at a glance. For cleaning, the sorting device can then be dismantled and remounted without the use of tools within seconds.

The vacuum bowl cutter also has large cleaning access points. Even cleaning under the bowl, which often



For cleaning, the sorting device can then be dismantled and remounted without the use of tools within seconds.

requires a lot of time, is quite easy here, because water and cleaning agents can be introduced in a targeted manner. Another plus is the divided noise protection lid. Thanks to this solution, it is no longer necessary to lift the entire lid, only the front area. This provides quick and easy access to the cutter bowl. "We're not getting any younger, either," winks Packlhof employee Julian Kawa as he passes by.

Simply Delicious

Some of what leaves the Packlhof production line goes directly to firm's own organic shop next door. It too, of course, just like the farm, butcher's and livestock, is in firm family hands and attracts visitors from near and afar with its delicious treats and the relaxed, feel-good atmosphere. They have a choice between around 250 sausages and meat specialities, and can also stock up on many other organic products. Whether fruits and vegetables, eggs, bread and baked goods, or dairy products: for everything, enjoyment comes first. Of course, after the tour through the production site, Florian Holzmayr does



Some of what leaves the Packlhof production line goes directly to firm's own organic shop next door. Visitors have a choice between around 250 sausages and meat specialities, and can also stock up on many other organic products.

not hesitate to extend an invitation to a taste test. The first bite into the delicious salami immediately highlights the fact that the young manager understands his craft. "By cutting in a vacuum, the taste becomes incredibly intense and we need significantly less seasoning. Instead, we rely on vegetable extracts and, of course, on our skills," grins Florian Holzmayr

mischievously, adding: "We have also definitely noticed a difference in terms of consistency with the vacuum bowl cutter. The products are simply more stable in the end."

Since 1992, the rest of Germany has also been able to enjoy fine Packlhof specialities: With Alnatura, the organic butcher has a strong partner at its side which sells its meat and sausage products in selected supermarkets. This also shows the high standards held by the Holzmayr family. For Alnatura insists that all agricultural ingredients of the products they distribute must come from organic farming, and not just the minimum of 95 percent required by German law. No wonder, then, that Packlhof has already won several awards from the renowned Bioland Association. "The next competition is just around the corner, so we're really looking forward to it and, of course, we all work hard", says Florian Holzmayr quickly, before he gets back to work. Back to the PC, where even more delicious recipes are waiting to make their way to the K+G bowl cutter.

www.kgwetter.de



Since 1992, the rest of Germany has also been able to enjoy fine Packlhof specialities: With Alnatura, the organic butcher has a strong partner at its side which sells its meat and sausage products in selected supermarkets.

ALWAYS A STEP AHEAD

The reduction of the consumption of packaging and the use of recyclable materials in the production of packaging are currently at the top of the agenda in the packaging industry and among consumers. In the near future, the demand for recyclable packaging in particular will increase significantly. With MULTIVAC PaperBoard, MULTIVAC, as one of the leaders in the market and technology, offers a variety of solutions for the production of packaging based on paper fibre that fully meet the requirements of recyclability.

Primarily, packaging must protect the product. In respect of food, packaging substantially contributes to the improved use and prolonged shelf life. Plastic composites, which have the required barrier properties and can be easily processed on packaging machines, are predominantly used for this purpose.



Photo PaperBoard Thermoformed Paper MultiFresh with Label

The new German Packaging Act, which will come into force in 2019, and the EU Plastics Strategy, which was adopted in January 2018, are intended to counteract the massive increase in the production of plastics worldwide. The requirements essentially relate to the introduction of a recycling economy for the plastics industry and the reduction of the consumption of plastics.

At MULTIVAC, these topics are not new. "As one of the leaders in the market and technology, we continuously strive towards developing innovative machine concepts and setting new standards in the market for packaging quality and efficiency as well as the conservation of resources and the reduction of packaging. We are also convinced that the use of alternative materials will create further sustainable prospects for the future," as Valeska Haux, Vice President Corporate Marketing, explains and who is also responsible for the film business at MULTIVAC.

Alternative Packaging Concepts With Multivac Paperboard

MULTIVAC PaperBoard offers various solutions for the manufacture of packaging from paper fibre based materials. In this regard, MULTIVAC works with leading manufacturers on suitable packaging materials that can be processed in standard systems. The thermoforming packaging machines and traysealers can be individually customised for the respective performance requirements of the customers. They accordingly offer real added value in terms of package quality, output and process reliability. In addition, by means of combining infeed, outfeed and pack labelling modules, fully automated packaging solutions can be offered that fully meet the requirements in respect of efficiency.

For example, both MAP and skin packs made from paper fibre based materials can be implemented on the MULTIVAC systems. The backing material can be processed either as a roll or as a cut sheet; in addition, prefabricated trays can be used.

All the materials can be separated into their respective parts by the end user and the paper backing sent for recycling.

Advantages of Packaging Made of Fibre Based Materials

The use of functional layers makes it possible to produce paper-based packs that meet the barrier property requirements of plastic composites. Either the paper backing or the entire paper composite can be sent for recycling; in this regard, countries have different regulations that need to be observed.



Photo PaperBoard blank meat MultiFresh with Label

Another advantage of paper backings is their wide design range for purposes of printing. This contributes significantly to differentiation at the point of sale. Product data can also be displayed on the paper backing so that large labels can be dispensed with.

Processing Cardboard Trays

For the processing of cardboard trays in MAP or skin packs, MULTIVAC offers both thermoforming packaging machines and traysealers that can be equipped with appropriate modules for the infeed and outfeed of the trays.

In contrast to the trays made of cardboard composites that are

processed by the traysealer and that can be separated by type after use, the trays used for the thermoforming packaging machine are made of mono cardboard. In the thermoforming moulding die of the machine, the trays are equipped with a corresponding plastic sealing layer that can then also be separated from the cardboard after use. The output requirements of the packaging solution significantly influence the decision as to the respective ideal system.

Processing Cardboard Backing

Skin packs on the basis of cardboard backing can be produced with MULTIVAC thermoforming packaging machines as well as with traysealers. In contrast to the traysealer which processes cut cardboard sheets, the thermoforming

packaging machine can use material from a roll, which makes this technology far more flexible in respect of the design of the packs. In addition, processing the material from a roll is also significantly more efficient.

Processing Malleable Paper

Similarly, MAP and skin packs made of malleable paper composites can also be produced. Paper and cardboard composites with different grammages and different functional layers are used. Pack cavities with a depth of up to 20 mm can be produced with the standard version of MULTIVAC thermoforming packaging machines. As with the previously mentioned packs, the materials of this pack can also be separated according to type and the paper backing sent for recycling.

MULTIVAC Expertise

In order to achieve optimal results, MULTIVAC supports its customers with comprehensive pack tests that are then used for a holistic assessment of the packs. MULTIVAC, as a system supplier, also offers suitable packaging materials that are designed for processing in packaging machines.

Our pronounced line expertise also enables the development of automatic solutions that fully meet the specific requirements of the processors in terms of output and process reliability. Initial customer projects have already been successfully completed.

In general, MULTIVAC has sufficient experience in the handling of paperbased packs – and will increasingly focus on innovative packaging concepts at future trade fairs.

www.multivac.com

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REDUCE WASTE AND FUTURE-PROOF PRODUCTION WITH AUTOMATIC PRODUCT RECOVERY

By Matt Hale, International Sales & Marketing Director, HRS Heat Exchangers

It seems that everybody is talking about Industry 4.0. Whether you are reading a magazine, visiting a trade show or talking to business consultants, it doesn't take long for the latest manufacturing buzzwords of 'Industry 4.0', 'fourth industrial revolution', or 'internet of things' to be mentioned.

All three terms refer to the shift in industry towards autonomous production systems using not just pre-programmed machinery and robots, but machines which are controlled and monitored by computer-based algorithms, often using the internet to link controls and systems in different locations, sometimes known as 'cyber-physical systems.' While there is a lot of hype around Industry 4.0, there is no doubt that the general direction of travel in manufacturing is for the use of more autonomous systems.

This trend also presents a fantastic opportunity for businesses to tackle key challenges, such as increasing energy efficiency, improving working conditions, or minimising and preventing waste. For example, installing a system which automatically diverts residual product when it no longer meets specification can significantly reduce waste and improve cleaning processes.

The Scale of Residual Food Waste

When processing various, often viscous, food products a certain amount adheres to the inside surfaces of machinery and pipework. Some product may also be left behind upon completion of each production run.

The scale of this problem is huge, with a 2010 European study suggesting that 4.1 million tonnes of food is lost during processing each year in the UK¹, costing hundreds of thousands of pounds annually.

A combination of good design – to minimise the amount of product that remains behind or adheres to the surface – and cleaning systems can be used to overcome the issue. The three main techniques – physical 'pigging systems', water-based flushing, and forcing clean air through the system – all remove residual product as part of cleaning-in-place (CIP) procedures. Depending on the range of products handled and product complexity this may need to be carried out several times a day between production batches.

Regaining Control

While all three of these recovery techniques have the ability to salvage residual product, inevitably, a certain amount is still lost as waste. However, by using inline monitoring equipment linked to a system designed to allow

product which meets the specified parameters to be reworked, the amount of valuable product recovered from equipment such as pasteurisers and sterilisers can be maximised.

This technique works by using an inline instrument to measure changes in the physical or chemical properties of the product, such as concentration. This information is passed to a controller which determines whether to 'keep' or 'discard' that material based on pre-determined quality parameters.

This concept of feedback control is not new in automation. Every HRS pasteuriser or steriliser already has a temperature transmitter and a three-way valve installed after the holding tube. If for any reason the pasteurisation or sterilisation temperature (set point) is not maintained through the holding tube, the temperature transmitter sends a signal to the valve to return the product to the holding tank.

This same principle is now being applied to the HRS Product Recovery System. Rather than just measuring



Control box installed to allow the reading from a monitor (such as a Brix meter) to control product recovery from an HRS heat exchanger.



Controlling product flow based on Brix levels, using a combination of a 3 way valve and a Brix meter.

temperature, any suitable physical or chemical property can be continually monitored, such as Brix, pH, viscosity or density. The choice of which parameter is used depends on the nature of the product and the sensors that are available.

Recovery in Practice

A line producing fruit juice may have a typical sugar level of 12 Brix. The concentration of the juice leaving the pasteuriser is monitored using a Brix meter, and any juice which falls below this level is diverted to waste. The line employs water flushing as part of its

CIP systems. Traditionally, because it could not accurately be determined where the mixing zone between residual product and flushing water began, anything passing through the pasteuriser during this cleaning phase would have been discarded, including any perfectly good product left in the pasteuriser at the end of the production cycle. However, by monitoring the product concentration from the beginning of the flushing cycle, it is possible to send juice with a Brix level of 12 or higher to the next phase of production (such as packing), and only discard material which falls below this set parameter.

Another example involves a manufacturer of BBQ sauce. Assuming the company makes a profit of 40 pence per litre of sauce, even if 200 litres are lost per production line during cleaning cycles each day, that equates to a loss of £80 a day or £24,000 a year (assuming 300 days production). If the company has four lines then it is losing almost £100,000 worth of profit, not to mention the creation of around 68 tonnes of waste each year.

Benefitting Pocket and Planet

As well as increasing the amount of product which can be sold, reducing the amount of waste generated decreases disposal costs such as storage, transport and treatment. Alongside these financial benefits, the environmental footprint of the production line will also be improved, with more end product being obtained for the same effort – effectively lowering CO₂e emissions per unit produced. Furthermore, cutting down the amount of product mixed in with the flushing or cleaning water means that the resulting waste stream is cleaner and will require less processing, further reducing financial and environmental costs.

As all HRS pasteurisers and sterilisers already include a three-way valve to allow for the diversion of out-of-specification product, the only real additional expense are the monitoring and control systems. With potential cost savings running into hundreds of thousands of pounds, such systems rapidly repay any additional capital expense. With manufacturers' focus on Industry 4.0 now prompting them to reassess the efficiency of all their processes, it's easy to see why Product Recovery Systems are increasingly being specified alongside both new and existing sterilisation and pasteurisation systems.

www.hrs-heatexchangers.com

¹ Preparatory Study on Food Waste across EU 27. Technical Report - 2010 - 054. http://ec.europa.eu/environment/eussd/pdf/bio_foodwaste_report.pdf

MORE HASTE LESS MEAT & FISH WASTE

The most recent research shared by food waste prevention experts WRAP reveals that over half of the food waste generated by the UK manufacturing and retail sector is avoidable. Good news is, the figures appear to be falling. Phil Brown, European Managing Director, Fortress Technology explains how faster high performance metal detector systems play a part in reducing the volume of false rejects and subsequently avoidable food waste.

Total food waste - avoidable and unavoidable - across the UK supply chain in 2015 was an estimated 1.7 million tonnes, with surplus and avoidable waste in meat, poultry and fish manufacturing representing 18%, 160,000 tonnes. Retailers and manufacturers are already doing a lot to ensure suitable food surplus is being made available for redistribution, and under the UK Courtauld 2025 Commitment, three signatories reported a 74% increase in the amounts being redistributed between 2012 and 2014 reports WRAP.

Equipment choices, robust quality control processes and staff training are all critical factors when it comes to reducing factory food waste states Phil. However, putting all these waste reducing mechanisms in place doesn't mean compromising on line speed. "If anything, production lines today need to be faster, accommodate quicker product changeovers, recalibrate at the touch of a button and provide suppliers with assurance that contaminants haven't slipped through the net," says Phil.

The newest metal detection technology can help to keep



Surplus and avoidable meat, poultry & fish waste from UK manufacturing is around 160,000 tonnes

meat, poultry and fish waste to a minimum while maintaining high product integrity and food safety levels.

Cutting False Rejects

False rejections occur when perfectly good product is identified as

containing a contaminant. The product has to be discarded, regardless of whether metal has actually entered the food chain or not. This is more common on lines inspecting wet products, so is very applicable to meat, poultry and fish. However, product effect also occurs in dairy, ready meals,



False rejects occur when good product is identified as containing a metal contaminant and can cost a food manufacturer up to £14k annually per line.

dips, bakery and even salted and fortified mineral snacks.

Primarily this is because food metal detectors have until recently struggled to reliably distinguish between the signal generated by a genuine metal contaminant and the signal caused by product effect. Moreover, stainless steel has been especially difficult to detect in wet products since any signal can be effectively disguised by the product effect.

Adding up the amount of product wasted due to false rejects can be challenging. Yet, industry estimates put the cost per line of false rejects at up to £14,000, depending on the scale of the problem. In addition to physical waste, repeated line stoppages to clear reject bins and troubleshoot machine issues can undermine the cost effectiveness on production lines.

Designed to overcome this issue, the Interceptor metal detector from Fortress applies both high and low frequency ranges in order to isolate the product signal, and more readily identifies any contaminant signature beyond that. Trials with stainless steel in wet products have shown that Interceptor can pinpoint contaminants half the size of those detectable by former generations of equipment.

Increasing Inspection Output

Increasing the volume of inspection lanes for specific product ranges can also attain reduced food waste and enhance inspection productivity.

This could be accomplished by channelling multiple lanes through a single, large metal detection aperture. The clear drawback

here is that the larger aperture size sacrifices valuable levels of sensitivity. In addition, any reject system will remove an entire line of product across all of the lanes being checked, so creating unnecessary waste.

Of course, there is the option of positioning a separate metal detector over each lane. This will mean product is only ever rejected from one lane, but the approach has major impacts in terms of cost and space efficiency. In today's food factories, many of them working around legacy equipment and within severe spatial limitations,

So, in a twin lane configuration, false reject waste can instantly be halved.

A single control panel manages all lanes, which streamlines operator access and enables users to select and view production data by individual lane as well as analyse comparative lane data side-by-side. Because each lane can be programmed to run asynchronously from each other, if one lane goes down or requires maintenance, the remaining continue to run as normal. Which means production never has to grind to a halt.



With the multi-aperture, multi-lane metal detector, each lane works independently, enabling a potential contaminant to be isolated without rejecting good product from other lanes.

compact design is often a prime consideration.

Because the multi-aperture multi-lane metal detector designed by Fortress has a dedicated aperture for each lane, the system is more sensitive to smaller metal particles and copes better with orientation and product effect. Best of all, each aperture operates like a standalone metal detector, inspecting and rejecting products on each line.

"Our recent developments in metal detection can have a direct bearing on the amount of meat, poultry and fish waste manufacturers generate. It serves to demonstrate that food safety on the one hand and concerns about cost, speed and wastage naturally overlap. What's more it proves that on fast moving production lines waste doesn't always equate to more waste," add Phil.

www.fortresstechnology.co.uk

OVER 95% OF EXHIBITION SPACE HAS BEEN CONFIRMED FOR MEAT EXPO CHINA 2018

Meat Expo China will open its 2018 edition from 13 - 16 September in Changsha, and a number of renowned brands have confirmed their participation at the fair. Less than a month to go, over 95% of exhibition space has been booked.

Organised by Messe Frankfurt (Shanghai) Co Ltd and the Circulation Industry Promotion Center of Ministry of Commerce (CIPC), the fair will once again be held in conjunction with the China Food & Catering Expo (CFCE), which is jointly supported by the Ministry of Commerce and the People's Government of Hunan Province. To maximise the effectiveness for fairgoers, it will also be held alongside the 2018 First China Hunan Cuisine Ingredient E-commerce Festival, which is supported by the Department of Commerce of Hunan Province.

Mr Richard Li, General Manager of Messe Frankfurt (Shanghai) Co Ltd, is excited about the upcoming edition: "We're proud to almost reach maximum exhibiting capacity at Meat Expo China this year. The

"Last year was a great success for Meat Expo China and CFCE. With 2018 First China Hunan Cuisine Ingredient E-commerce Festival joining us this year, I am sure new elements will enrich our show. We can't wait to welcome representatives of the whole meat industry's supply chain to join this event," he added.

The three events are expected to gather 1,500 companies across 81,000 sqm of exhibition space, and to welcome 25,000 trade visitors. Renowned industry leaders, including the likes of Baiyang group, Beijing Ershang Group Dahongmen Meat Food Co Ltd, Hunan province Food Corporation, Sanwang, Wai Hung, Shenzhen Allied Aquatic Produce Development Ltd, Smart Weigh Packaging Machinery Co Ltd, Zhongshan Yigao Packaging Machinery Co Ltd, and more, will showcase a comprehensive spectrum of meat products, technologies and related equipment during the four-day fair.

One particular exhibitor is Shenzhen Allied Aquatic Produce Development Ltd, who will bring a range of surimi, breaded seafood products, baked goods, and frozen fish fillets to the show. Songyan Zhang, the company's Marketing Manager, is excited to take part in the upcoming edition: "In terms of the scale and product categories, Meat Expo China is a great platform to promote our products and to reach

out to our target buyers. We wish to enhance our brand image through the show, and to meet with as many potential buyers as possible."



Besides meat and related food products, the fair will also showcase meat-related processing equipment, packaging equipment and materials, refrigeration equipment, and related technologies. For instance, Beijing Ershang Group Dahongmen Meat Food Co Ltd specialises in pig breeding, wholesaling, slaughtering, as well as refrigerating. The company will showcase its frozen and cooked meat at the fair.

Smart Weigh Packaging Machinery designs and manufactures machines and equipment for food processing lines. Key products include customised packaging solutions, weighing equipment, metal detectors and conveyor belts. At the company's booth, a range of packaging and weighing machinery will be on display.

Meat Expo China will be held from 13 - 16 September 2018 at the Changsha International Convention & Exhibition Center.

www.meatexpochna.com

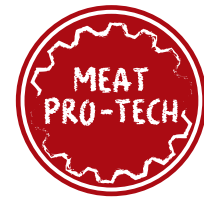


clock is now ticking until the doors open, so we urge any last-minute participants to sign up before spaces are completely sold out."

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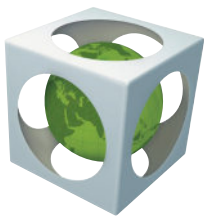
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FUTURE IN FOCUS AS INNOVATIVE END-TO-END SOLUTIONS COME TO THE FORE AT 5TH GULFOOD MANUFACTURING

The fifth edition of Gulfood Manufacturing will showcase a raft of innovative cutting-edge solutions shaping global production when the region's biggest food and beverage processing event returns to Dubai World Trade Centre (DWTC) from 6 to 8 November 2018.

Having outperformed itself year-on-year since launching in 2014, Gulfood Manufacturing will once again be categorised into five dedicated industry sectors:



* **Ingredients**, showcasing essential ingredients that improve taste, aroma, colour, texture, nutrition, production, storage, transport and shelf life

* **Processing**, covering everything from general cross-industry processing lines and technologies, to industry-specific equipment

* **Packaging**, featuring equipment and machinery for packaging, printing, labeling, weighing, sorting and decorating for large, mid and small-scale industries

* **Automation & Controls**, presenting technological innovation in automation – from Robotics, Smart manufacturing and Digitalisation, to Industry 4.0 and Industrial Internet of Things (IIOT)

* **Supply Chain Solutions**, showcasing end-to-end solutions for the food industry

Spanning 80,000 square metres of exhibition space across 16 halls, the three-day show will welcome more than 1600 local, regional and international suppliers and industry service providers from 60 countries showcasing the latest manufacturing business improvement tools. With top quality products and solutions for all budgets being displayed on the exhibition floor, Gulfood Manufacturing also serves as a tailor-made business and sales platform for networking, knowledge sharing and enhancing commercial opportunities.

With tens of thousands of visitors expected to attend the landmark fifth show, Gulfood Manufacturing Innovation Tours will outline the

future of the food and beverage processing and production sector in the expanded Automation & Controls segment. Expect to see examples of robots working among humans at production lines, or high-speed machines with capacity to churn out bags at 200 units per minute.

The show will also feature one of the region's largest hosted buyer programmes, with an anticipated contingent of 2,000 pre-qualified, C-Level management attendees from across the Middle East, Africa and South Asia readying to invest heavily at the exhibition.

Elsewhere, the Gulfood Manufacturing Industry Excellence Awards will recognise and reward best practices and innovation within the food manufacturing industry value chain. The awards will be judged by an international panel of qualified experts representing food processing and packaging industries, graphics experts, equipment suppliers, academia, trade press, governmental, environmental and trade organisations.

In addition, the improved and revamped Gulfood Manufacturing Conference will bring renowned thought leaders, market analysts and industry experts to address, discuss and debate industry challenges and opportunities.

Gulfood Manufacturing 2018 will be open from 10 am – 6 pm on 6-7 November, and 10 am – 5 pm on 8 November. The show is only open to food and beverage industry professionals and visitor attendance is free of charge.

www.gulfoodmanufacturing.com

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