

# MEATINGPOINT

magazine

SUSTAINABLE TECHNOLOGY, PROCESSING & PACKAGING

## GROWING TO AUTOMATED TURKEY PROCESSING

NATURAL ADDITIVES AND HPP  
FOR SAFETY AND CLEAN LABEL

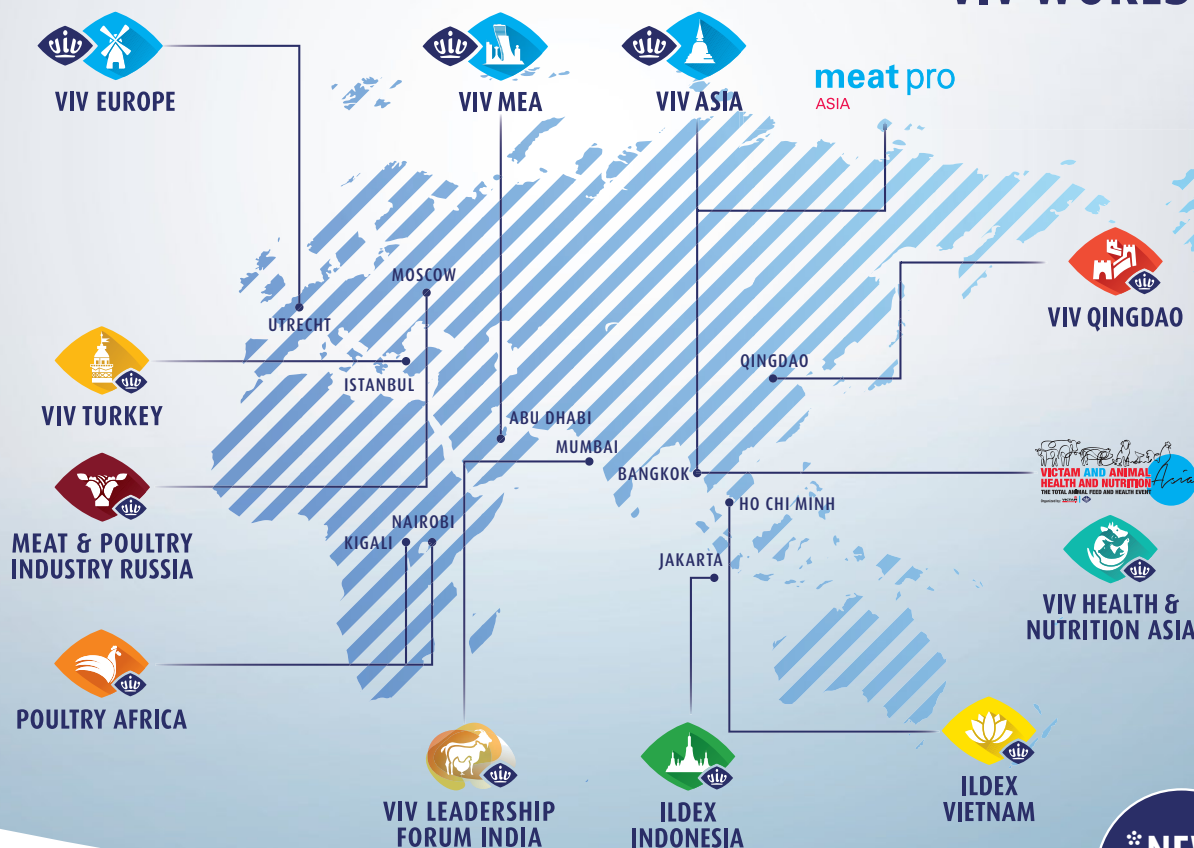
DISRUPTIVE  
FOOD CHANGES

NEW BELT DESIGN ENHANCES  
GRADER PERFORMANCE

# THE BUSINESS NETWORK LINKING PROFESSIONALS FROM FEED TO FOOD



## VIV WORLDWIDE



**\*NEW DATES**

### MEAT & POULTRY INDUSTRY RUSSIA 2021

MOSCOW | MAY 25-27

### VIV TURKEY 2021

ISTANBUL | JUNE 10-12

### ILDEX VIETNAM 2021\*

HO CHI MINH | JULY 21-23

### POULTRY AFRICA 2021

KIGALI | SEPTEMBER 1-2

### VIV QINGDAO 2021

QINGDAO | SEPTEMBER 15-17

### MEAT PRO ASIA 2021\*

BANGKOK | SEPTEMBER 22-24

### VIV ASIA 2021\*

BANGKOK | SEPTEMBER 22-24

### VIV MEA 2021

ABU DHABI | NOVEMBER 22-24

### ILDEX INDONESIA 2021\*

JAKARTA | NOVEMBER 24-26

### VICTAM AND ANIMAL HEALTH AND NUTRITION ASIA 2022

BANGKOK | JANUARY 18-20

### VIV EUROPE 2022

UTRECHT | MAY 31-2 JUNE



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# Dear reader,

There is no doubt that 2020 has been very challenging and unforgettable for all of us. It has been devastating for governments, stock markets, and industry. Economic turbulence, as well as shifts in supply and demand, has caused great uncertainty in global protein markets. The situation has been further affected by outbreaks of illness due to Covid-19 at the processing level that has created bottlenecks and backlogs. The steep rise in unemployment, industry closures, lockdowns, and the tragic loss of life left many of us reeling. Not since the industrial revolution has the way our societies function been impacted so quickly. Yet, the power of optimism for a better future has seen society reimagined and rebuilt across the world. As the pandemic continues to cast a shadow, both privately and in business, we should find reasons to be optimistic about 2021. The knowledge built and new ways of working tested in 2020 will serve as a solid foundation for businesses to build back better in 2021.



Jenny Smart

Mr. Loïc Pollet, CEO of VELEC Systems, who we interviewed, expressed his optimism and confidence about the new year, stating that 2021 is expected to be "the strongest year yet" for his company. Find some more about the company's core competence, values, and vision on pages 20-23.

Our cover story is featuring Marel's unique solutions in turkey processing automation. The company leads the market for turkey processing solutions, leadership earned through years of dedicated experience developing equipment specifically for the sector. Read on pages 18-20.

As always, we feature some latest business and industry news, interviews, and company profiles, as well as research papers and technological innovations.

Last but not least, with this final issue of 2020, I would like to thank all our readers, contributors, and advertisers. Meating Point Magazine team wishes you a healthy, prosperous, and happiest New Year!

## Enjoy your read!

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When you have finished with this magazine please recycle it.





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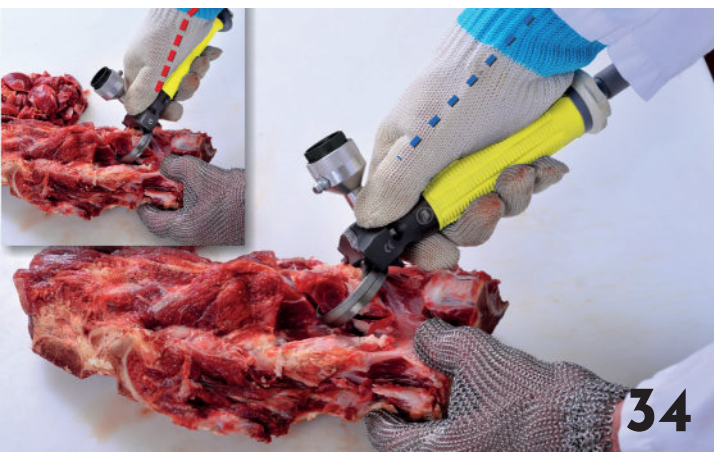
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- \* Skinning, Deboning & Trimming, Portioning, Grinding, Separating, Sorting (Meat & Poultry Focus)
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## LORYMA OPENS STATE-OF-THE-ART TECHNICAL CENTRE

**New R&D Laboratory Enables Targeted Development of Innovative Wheat Ingredients, Product Optimisation and Expanded Services for Customers**

Loryma, an expert in wheat-based ingredients, has this month opened the doors to its modern and versatile new test laboratory at its headquarters in Zwingenberg, near Frankfurt. New functional wheat-based components and applications are developed on site, alongside the optimisation of customer products and training sessions. After five months of construction, the core element is a professional test kitchen. Here, production and processes can be simulated on an industrial scale, and final product preparation demonstrated. In addition, the technical centre includes two laboratories for innovative meat concepts, a bakery, a breading kitchen and a seminar room for workshops. The modern equipment enables not only qualified research and product development, but also comprehensive technical customer service.

Loryma develops native and modified starches, textured proteins and functional blends from the raw material wheat. These ingredients can be used to improve the structure, binding and texture of vegan and vegetarian alternatives,



meat and baked goods, as well as cereals, convenience food and snacks. The added value natural components provide the bite in vegan burger patties or plant-based seafood and give snacks just the right crunch. Thanks to the wide range of equipment in the new technical centre, the product development team will now be able to respond more quickly and specifically to consumer trends and market requirements. A total of 8 employees can test possible processing methods, product stability and the quality of existing applications and innovative prototypes.

Workshops or webinars can be held in the technical centre to demonstrate to manufacturers the various application possibilities of wheat ingredients, and their ease of processing for optimal product concepts. Loryma also offers customers the joint development of tailor-made solutions in its role as a service partner.

"The diverse raw material inspires us to constantly develop new processing possibilities and applications in response to market trends," explains Norbert Klein, Head of Product Development at Loryma. "We have selected the modern equipment in the technical centre in order to closely replicate large-scale production, thus enabling an uncomplicated scale-up. As product developers, we now have the ideal prerequisites to pick up on new future-oriented trends and implement an uncomplicated and cost-effective manufacturing process with our customers."

[www.loryma.de](http://www.loryma.de)





## TOGETHER AT A DISTANCE - THE PARTICIPANTS OF THE SCHUR FLEXIBLES CHARITY RUN RAN ALMOST 10.000 KM FOR A GOOD CAUSE

Together at a distance. Following this credo, employees and partners of the packaging specialist Schur Flexibles covered a total of 9,509.62 km during the Schur Flexibles Charity Run from 10th to 18th October. Whether jogging, walking, horseback riding or cycling - every kilometre was recognized and rewarded by Schur Flexibles with one euro in the donation pot. What's more, the company doubled the total amount, so that now € 19,019.24 will be donated to the European Food Banks Federation (FEBA) - for their commitment against food waste and for supporting the local food banks.



*When the cheque was handed over by Schur Flexibles Management, Valentina D'Arrigo and Angela Frigo from the European Food Banks Federation were visibly impressed by the amount of money raised and the great motivation of the participants.*

"We did not want to simply accept that our employees cannot take part in various charity runs in their countries this year as usual due to the pandemic," Michael Schernthaner, CEO Schur Flexibles, explains the origin of the company's internal charity campaign. "At the same time, many social institutions lack the donations from the

cancelled charity events." So, the company invited its employees and selected customers worldwide to the first global charity run in the company's history. During the campaign period, participants were allowed to individually determine the day, time, route and "mode of transport". As proof of participation, a photo with the Schur Flexibles shirt, which was sent in advance, was sufficient.

### Overwhelming Response for the Joint Project

Nearly 350 participants in Europe and far beyond - Schur Flexibles employees and some close partners - took part in the Charity Run. An overwhelming result: on average, each participant covered almost 30 kilometres for the good cause. "We are delighted with the extraordinary commitment of everyone and are very proud of the success of the event. Everyone gave their best. That welds together - over any distance," says a delighted Friedrich Humer, CSO Schur Flexibles. Some participants have even completed marathons or cycled more than 150 km. Others have mastered mountain tours despite icy temperatures, walked on the beach at night or spent over 15 hours on their bike ergometer for an impressive individual performance of 400 kilometres.

The event became visible to the participants among others via LinkedIn using the hashtag #SFCharity.

### Together Against Food Waste

The donation of almost € 20,000.00 will go to the European Food Banks Federation for its efforts to combat food waste and support local food banks. For the Austrian packaging specialist, the sustainability of the food industry has high priority. The Group's innovative and sustainable packaging helps to extend the shelf life of fresh food and therefore reduce waste. "We are very pleased if we can also make a contribution to support the local work of the foodbanks," says Fiene Berger, Manager Corporate Responsibility. "After all, their work



*Together at a distance - each one for himself and yet all together the participants of the Schur Flexibles Charity Run achieved almost 10,000 kilometres and a donation of almost € 20,000*

is immensely important, especially in the current situation - and has become much more difficult at the same time."

[www.schurflexibles.com](http://www.schurflexibles.com)



## DSI FREEZING SOLUTIONS PRESENTS GROUND-BREAKING TEST CENTER

Global leader in plate freezing technology, DSI Freezing Solutions, opens a new test center. Focus is on collection and analysis of freezing data for R&D as well as commercial purposes.

significant amount of measurement equipment, that allow DSI Freezing Solutions to see and present the measurements in real time - at site and online. This makes sense during a global pandemic, but it is also

packing may affect the freezing process. But instead of doing it on site and slowing down production, the manufacturer can continue the daily production while testing at the test center in North Denmark.



When DSI Freezing Solutions opens their new test center, unfortunately it will not be to the sound of popping champagne corks and mingling international guests. Covid-19 came in the way. Instead, it will be an almost regular workday for engineer Mikkel Bøggild, who is to start the compressor and turn on the test plate freezers. Even so, Mikkel is excited that the day has come; "With this test center, we can optimize machines and products even further. We combine our freezing technology and our CorePoint measurement equipment with software to measure and analyze our customers' data", says Mikkel Bøggild.

The test center consists of a 30 kW-facility and scalable freezers, that can be rebuild depending on needs - to be able to test vertical and horizontal freezers of varying sizes - as well as a

relevant for DSI Freezing Solutions' many international customers.

### Focus on Data and Optimization

At the test center, food manufacturers will be able to scrutinize their products for optimizing purposes with help from experts with great knowledge of plate freezing in all relevant industries, such as fish, meat and poultry and fruit, vegetables and liquids. For instance, it is possible to look into how various freezing temperatures, different batches and types of



CSO at DSI Freezing Solutions, Michael Wounlund, makes no secret of the fact, that the purpose of opening a test center is commercial; "For our potential customers, the test center brings an opportunity to examine, if plate freezing is really a cheaper alternative to their existing freezing solution", he says and continues "We often see that the potential savings in operational costs amounts to 30-40 % because plate freezing is much faster. But also because we are able to customize our freezers to exact needs. But when a company is looking into converting their production, they need numbers to support the business case. And with the test center, we can assist them".

### A Strategic Move

DSI Freezing Solutions recently presented a new purpose; To optimize their customer's results while protecting the environment. And the test center suits this purpose; It will be possible for potential as well as existing customers to test and develop processes as well as products. At the same time, DSI Freezing Solutions are able to develop their portfolio of applications and products while continuing the R&D focus on developing sustainable freezing solutions and maintaining the position as market leader within plate freezing technology.

[www.dsifreezing.com](http://www.dsifreezing.com)

## NEW BELT DESIGN ENHANCES GRADER PERFORMANCE

Ishida Europe has enhanced its market-leading FLEX-Grader for fresh poultry and meat with the introduction of a new high accuracy weighing platform which allows for more accurate grading and improved Overall Equipment Effectiveness (OEE).

The Slack Belt weigh bed incorporates a single belt mechanism which eliminates product transfer issues to and from the weigh bed. This creates a more stable weighing environment for even greater accuracy. In addition, the weigh bed features a scraper that removes any product debris, which ensures a more consistent and accurate auto zeroing of the load cell.

Equally important, the Slack Belt's hygienic construction to IP68 certification is fully protected against water ingress, making it ideal for harsh, high care environments; the belt can also be easily removed for cleaning. A wind shield is provided as standard to ensure protection against environmental factors during the weighing process,

"Working closely with customers is key to understanding their



*Flex Grader Full Machine*

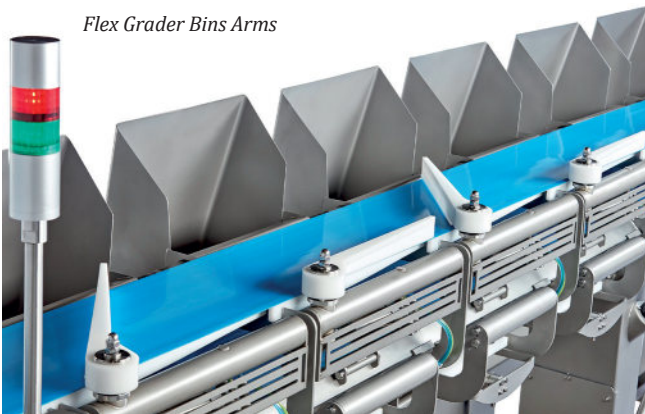
specific challenges, in particular tackling areas of inefficiencies," explained Ciaran Murphy, Ishida Europe's Business Manager EMEA - Quality Inspection Control. "For the FLEX-Grader, our focus was to develop a solution that helped to minimise the impact of product giveaway and food wastage, while maintaining hygiene standards."

The Ishida FLEX-Grader offers a high-speed and accurate solution for the grading of fresh poultry and meat to a variety of

different specifications, including specified weight, minimum weight or number per pack. It can also deliver target batching with tolerances and priorities, including product overlapping. An intuitive touch screen remote control ensures ease of set up and changeovers.

The FLEX-Grader features a modular design that is easily integrated into existing processing and packing lines which can be modified and adapted for changing requirements. It can

*Flex Grader Bins Arms*



*Flex Grader Bin removal*



incorporate between four and 32 collection bins in a variety of configurations including single, double and twin line layouts, handling pieces from 100mm to 400mm in length at speeds from 175 to 500 per minute.

As part of Ishida's ability to supply complete turnkey lines tailored to individual customer requirements, the company also offers a full range of complementary machines including multihead weighers, tray sealers, leak detectors, checkweighers

and X-ray inspection systems, with its IX-G2 model specially designed for the detection of low-density contaminants such as bone fragments in chicken fillets.

Ishida's global network provides full local support for every FLEX-Grader installation to ensure optimum performance. The company's aftersales service has continued to support customers across the EMEA region throughout the current pandemic using the latest in

*Flex Grader slack belt weigh bed*



support technology, such as Augmented Reality for the delivery of remote training and servicing.

[www.ishidaeurope.com](http://www.ishidaeurope.com)

## MEYN RELEASES NEW PHYSIC WING CUTTER FOR BIGGER BIRDS

### The Next Generation Flexible and Convenient Cut Up Solution

Changing consumption patterns and variations in flock uniformity can create additional challenges for poultry processors around the world. The pressure on poultry processors to be flexible with both their input and output has never been so apparent. In cooperation with poultry processors Meyn has redeveloped the Physic cut-up line to cope with bigger birds more conveniently. As a result, Meyn is ready to launch the updated Wing cutter HY and start sales from early 2021. This upgraded automatic bird-size-adjusting wing cutter contributes to the need for flexibility and minimize down-time.

#### The Meyn Wing Cutter HY for Bigger Birds

The Meyn HY wing cutter removes whole wings from the birds with a highly consistent and precise cut. When required, the cut can include a maximum amount of



back meat while minimizing the amount of breast meat, but other combinations can be selected as well.

On order to cope with bigger birds the dual circular knives and their stainless-steel motors are fitted within a spring coil suspension to adjust to each bird individually.

#### Increased Weight Range Without Changing Settings

With line speeds going up to an astonishing 15,000 BPH, a smooth-

running processing makes all the difference. The Wing cutter HY for bigger birds is able to process a higher weight range from 1 to 4 kg in one setting. As a result, flock and breed variations do not cause extra challenges at the processing line.

With hundreds of Physic cut-up solutions sold worldwide, Meyn cut-up technology has proven to be very successful among poultry processors around the world.

[www.meyn.com](http://www.meyn.com)



## DSM, SABIC, CEPESA, FIBRANT, AND VISCOFAN CO-DEVELOP NOVEL MEAT PACKAGING MATERIAL MADE FROM MIXED POST-CONSUMER PLASTICS

Driven by a shared vision of sustainability and strong collaboration, DSM, SABIC, Cepsa, Fibrant, and Viscofan have together created a multi-barrier casing for meat products made via advanced recycling of post-consumer plastics. The transition towards recycled-based multi-layer films enables the packaging industry to adopt a more sustainable solution without compromising on functional performance. The development of this packaging material underlines a strong commitment to enabling a circular economy by working together with partners throughout the value chain, and addresses the increasing consumer, societal and regulatory demand for more sustainable multi-layer barrier casing solutions.

Produced by Viscofan, the newly developed sustainable casing consists of several layers of different polymers. DSM Engineering Materials supplies the high-performance certified circular polyamide (PA) Akulon® CRC-MB, and SABIC supplies the high-performance certified circular polyethylene (PE)\* from its TRUCIRCLE™ portfolio of circular solutions. Both products are based on used and post-consumer plastics which would otherwise be discarded as landfill or lost to incineration. Using advanced recycling, the used plastic is converted into new feedstock, which then enters the production chain to deliver new virgin-quality materials.

Jason Zhang, VP Business Lines Performance Polymers at DSM



Photo: DSM Engineering Materials: DSMPR524

*DSM, SABIC, Cepsa, Fibrant, and Viscofan co-develop novel meat packaging material made from mixed postconsumer plastics.*

Engineering Materials: “By introducing Akulon® CRC-MB, DSM is taking an exciting next step in its sustainability journey. The co-development of a recycled-based film for packaging applications underlines DSM’s commitment to working closely with partners, customers and suppliers to realize a more sustainable value chain and economy.”

Mark Vester, Global Circular Economy Leader at SABIC: “We’re committed to finding innovative solutions that help to capture value from used plastic which would otherwise have been discarded. This includes collaborating with players across the entire value chain to provide access to more sustainable materials, made using our TRUCIRCLE™ portfolio of circular solutions, and to work towards a circular economy for plastics. We are delighted to work with partners including Cepsa,

Fibrant, DSM and Viscofan to help make this vision a reality.”

The high-performance certified circular polyamide Akulon® CRC-MB is produced through a strong value chain collaboration involving a range of partners applying a mass-balancing approach\*\*. Firstly, SABIC produces certified circular benzene, based on materials produced via feedstock recycling of mixed-used plastics, which is used by Cepsa to make certified circular phenol. Fibrant then uses the phenol to produce certified circular caprolactam EcoLactam®, which is provided to DSM to produce its certified circular polyamide. Finally, Viscofan combines the certified circular polyethylene and polyamide to produce the multi-barrier film used to create casings for a variety of meat products.

Paul Habets, Director Marketing & Sales at Fibrant: “We’re proud that our EcoLactam® Circular is

used in Viscofan's newly developed product. This is an important milestone for us and our value chain partners supporting the development of sustainable and circular products. EcoLactam® means high-quality caprolactam with a lower environmental footprint. Together, we're making important steps toward a carbon-neutral society."

All of the advanced recycled materials within the value chain will have the globally recognized ISCC Plus certification and will not require re-qualification.

Multi-layer barrier films inherently offer strong sustainability advantages by helping to reduce preventable food waste - which accounts for 8% of total global greenhouse gas emissions - and extending the shelf-life of food products. What's more, using post-consumer plastics as a feedstock mitigates the depletion of natural

resources, reduces the accumulation of plastic waste and improves the environmental footprint.

Óscar Ponz, Chief Plastic Business Officer at Viscofan: "By combining our capacity for innovation and the latest available technology, we have today reached a unique solution in the market using post-consumer recycled plastics. In our sustainable casings program, next to today's achievement, we're also in a position to offer bio-based alternatives to our customers. Today's announcement is a result of the shared commitment to make food systems fair, healthy and environmentally friendly for a more sustainable future. This important project is being developed with the collaboration of important Viscofan customers like ElPozo."

\*The certified circular polyethylene, part of SABIC's TRUCIRCLE™ portfolio, is based on materials produced via feedstock recycling

of mixed and used plastic. SABIC's uses advanced feedstock recycling technology from UK-based Plastic Energy to recover the material value of mixed and used plastic, including previously difficult to recycle post-consumer plastics, which could otherwise be lost to landfill or incineration. The waste is converted into an oil, which then enters the production chain just like fossil-based feedstock to deliver new materials without compromising on quality.

\*\*Mass balance accounting is a well-known approach that has been designed to trace the flow of materials through a complex value chain. The mass balance approach provides a set of rules for how to allocate recycled content to different products to be able to claim and market the content as 'recycled'-based. Source: Ellen MacArthur Foundation (Mass Balance White Paper).

[www.dsm.com](http://www.dsm.com)

## ONE FOR ALL: THE NEW CASING HOLDING DEVICE BY VEMAG WORKS WITH ANY CUSTOMARY CASING TYPE



### The Dhv815 for a Full Range of Applications In the Butcher Trade Sector

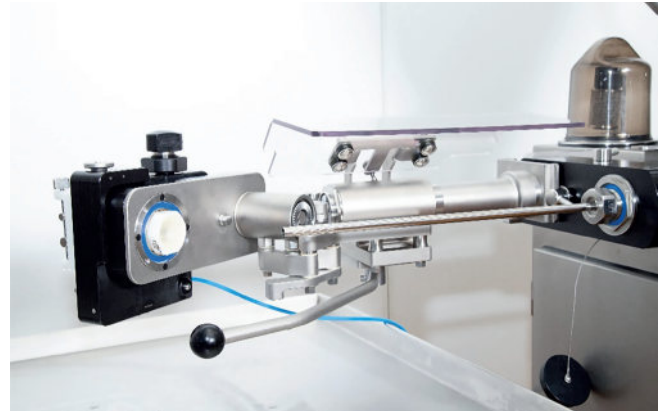
Twist-linking of sausages has never been as easy and convenient as with the new VEMAG holding device DHV815. Whether cellulose, collagen or natural casings, for all calibres the new casing holding device is easily and precisely adjustable and guarantees reproducible results with its flexibility and first class product appearance.

VEMAG Sortiment Brueh und Frischwurst:  
Universal application: The DHV815 by VEMAG processes all customary casing types.





*VEMAG casing holding device DHV815  
for a full range of applications in a butcher trade sector.*



*The modular and robust construction with just a few wearing parts  
reduces maintenance effort and saves costs.*

## One Casing Holding Device for all Applications

The DHV815 covers an extremely broad calibre range from 13mm to 58mm and processes all customary casing types. The device works securely and precisely even with overlapped casings. The design of the DHV815 ensures very short travel paths of the product, resulting in a higher quality of the end product.

Adjustment of the casing tension works through the driven casing brake and can be done without tools. The improved and extremely gentle brake concept prevents casing bursts and improves casing yield remarkably. The linking is smooth and reliable, the twist-

links are always well positioned, thus, reducing the casing loss significantly.

An optional roller guide assists the operator at high production speeds. The DHV815 not only increases productivity, but also the operator ergonomics, thus, trained personnel is not required.

The modular and robust construction with just a few wearing parts reduces maintenance effort and saves costs.

## Optional Attachment for Length Portioning of Natural Casings

An optional attachment serves as an extension to the DHV815

for the length-precise linking of sausages in natural casing. The standard casings can be used with the system, the casing guiding horns controlling the calibres. Water is used as a natural lubricant to reduce bursts and improve yield.

## The New Swivel Concept for an Easy Operation

The DHV815 swivels in a straight (linear) movement relative to the linking horn, a back stroke function serves to use casings with the push back. The concept supports a secure feeding of the linking horns, offers free choice in purchasing of casings and reduces bursts during the start-up - yet another precious advantage in the reduction of non-productive times.

The innovative mechanics of the DHV815 guarantee longer service life and lower maintenance costs. The DHV815 is compatible with the following vacuum filling machines and attachments:

The HPE series, HP10L, the DPE series, DP3/DP5/DP6, Robby, HP1L, HP3, Robot500; the casing applier DAG804 as well as the inline grinder 980 and 982.

[www.vemag.de](http://www.vemag.de)



*Whether collagen, cellulose or natural casing, linking sausages of any calibre  
with the DHV815 by VEMAG has never been any more convenient.*



## LORYMA CREATES VERSATILE TOPPING FOR VEGAN CONVENIENCE PRODUCTS

### Vegan Chicken Breast Strips Made from Wheat Texture Enhance Chilled, On-The-Go Products

Loryma, expert in wheat-based ingredients, introduces vegan chicken breast, a new option for trendy, ready-to-eat applications from the refrigerated aisle. These vegetable fillet strips, made from structured wheat protein, promise authentic taste and mouthfeel, as well as an appealing appearance and texture, and ease of processing.



Consumer demand for ready-to-eat chilled snacks and fresh meals is growing steadily. Whether eaten cold or heated, products such as bowls, salads and wraps are often enhanced with meat-based toppings, for example, grilled fillet strips. However, to serve the growing market for plant-based product alternatives, ingredients manufacturer Loryma has introduced a vegetable chicken breast solution.

Functional wheat-based raw materials allow for the creation

of meat alternatives that are convincing in terms of sensory perception and taste, and suitable for a wide range of applications thanks to simple production processes. Thus, the vegan meat alternative, just like a real pre-cooked chicken breast, can be enjoyed both cold or hot without loss of quality. Whether as a salad topping, a filling or eaten hot from the pan or oven, the vegetable fillets demonstrate optimal

interaction of functional binding and structured wheat protein.

The processing of a vegan chicken breast does not differ much from the meat version. First, dry Lory® Tex Chunks are soaked in water and individually seasoned, with the textured wheat protein perfectly replicating authentic meat structure. The rehydrated chunks are then shredded and mixed with both

wheat-based binding agent Lory® Bind to form a homogenous mass in an "all-in" process. This mass can then be individually processed, just like the meat variant, and is usually filled into sterile casings. It is then cooked before being removed from the casing and pre-portioned. The fillet can be grilled or deep-fried as strips, nuggets, slices or cubes, and the finished product used in the same way as real cooked chicken breast.

[www.loryma.de/en](http://www.loryma.de/en)

## ADVANCED INSPECTION SYSTEMS A KEY PART OF A STRONG FOOD SAFETY CULTURE

To help food and beverage manufacturers adhere to requirements for a strong food safety culture, Eagle Product Inspection offers advanced inspection systems that are a visible sign of a company's commitment to food safety and an effective

tool in preventing potentially hazardous contaminants from entering the food supply.

The newly enhanced Pack 400 HC and Bulk 540 PRO x-ray systems can be put in place at key critical control points on the

line to improve food safety and, with it, an organization's food safety culture:

### • Upfront inspection:

The Eagle Bulk 540 PRO is a powerful x-ray system that

detects hard-to-find contaminants such as metal fragments, glass shards, dense plastics, rubber compounds, mineral stones and rocks in bulk flowing food products, including fruits, vegetables, granolas and cereals, among other items. Having early checks in place helps ensure compliance with HACCP principles and global safety regulations and fosters a culture that emphasizes food safety from the start.

#### • Final check:

In addition to the inspection of bulk/raw materials and the use of inline x-ray machines during processing and packaging, end-



of-line detection technologies are an important final safeguard in providing safe, high quality products that align with a company's food safety culture. The Eagle Pack 400 HC is a newly advanced system that can find contaminants in

packaged meat, poultry and dairy products while simultaneously conducting crucial quality checks, including weight, component count, shape and voids. The high performance x-ray machine can detect physical contaminants in plastic containers, cartons, boxes and pouches and can be paired with the Eagle MDX dual-energy technology for particularly busy or difficult images. For poultry applications, the Eagle

Pack 400 HC can be equipped with Eagle's newly-introduced PXT™ detector technology that provides superior inline detection of poultry bones down to 1 mm.

[www.eaglepi.com](http://www.eaglepi.com)  
[www.eaglepoultryshow.com](http://www.eaglepoultryshow.com)

## Leading the way in innovative duck processing

**Marel offers the most advanced, highly automated solutions for duck processing.**

- Consistently high yield of superior quality end products
- Optimized productivity and efficiency
- Full traceability and production control
- Unique technologies, including the waxing system

More information: +31 485 586 111 | [info.poultry@marel.com](mailto:info.poultry@marel.com)  
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TRANSFORMING FOOD PROCESSING

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## “A DEVELOPMENTAL QUANTUM LEAP”

### Proven Quality Meets Innovative Solutions: K+G Wetter Impresses with Clever Applications



*“We look forward to presenting our innovations to our customers and inspiring them”, emphasises Volker Schlosser, Sales Manager International at K+G Wetter.*

#### Easy and Hygienically Safe Cleaning Thanks to the No-Seal Design

With the new “Hygienic Secure” machine generation from K+G Wetter the area between the cutter bowl and vacuum kettle, which is particularly sensitive from a hygiene perspective, has no seals whatsoever. Previously, the seal had to be replaced at defined maintenance intervals, but this is no longer necessary thanks to the clever solution. “A far-sighted innovation and quantum leap in design terms”, says Schlosser. “The issues of wear and risk of contamination are now in the past. Because if there is no seal there is no contamination, and seals are particularly difficult to clean.” Another hygiene highlight that is unique worldwide is the lid strip on the knife cover. It is self-adjusting and can be removed without tools for cleaning. There is no chance of deposits forming here either.

The solutions delivered by long-established engineering firm K+G Wetter are employed successfully in many food processing sectors. With innovative ideas for improving process hygiene and by focusing consistently on users’ requirements, the solutions from K+G Wetter ensure sustained efficiency improvements in the food processing industry. Now, during development of the new “Hygienic Secure” range of industrial bowl cutters, a new approach to engineering design has been taken once again. Proven K+G Wetter quality meets innovative solutions: an unbeatable combination.

“Everything has been thought through and examined precisely, not only in terms of engineering, but with an eye on process technology too. The efficiency and optimisation of process workflows, hygiene and safety, user orientation and

energy efficiency are what we are focusing on here”, emphasises Sales Manager Volker Schlosser. “Hygienic Secure” impresses all-round. All of the solutions ensure smooth, hygienically safe processes and end products of the highest quality.



*“We look forward to presenting our innovations to our customers and inspiring them”, emphasises Volker Schlosser, Sales Manager International at K+G Wetter.*





*Simple and safe cleaning: A seal is no longer necessary between the cutter bowl and vacuum vessel. This ensures hygienic cleanliness. Because where there is no seal there are also no deposits.*

Further special features are the mushroom topper and bowl scraper. Both of these can also be removed without tools, allowing them to be easily and

thoroughly cleaned. The result ensures the highest levels of hygiene and product safety and guarantees smooth production processes.

Even cleaning the vacuum vessel area is a more hygienic and easy process with the new design. This is facilitated by two large cleaning flaps in the vacuum vessel, which can also be opened without tools.

Easy access with a cleaning lance is therefore ensured, while visual inspection of the cleaning result can also now also be performed safely.

The newly developed two-part stainless steel lid (knife and noise reduction lid) moreover significantly reduces the loading and unloading time. Improving efficiency was also a key aspect during development of the cooking system. Steam is now directly introduced into a double-walled bowl. The system operates approximately 30 percent faster and more efficiently as a result. Potential product contamination with steam is therefore eliminated.

[www.kgwetter.de](http://www.kgwetter.de)

**TICHY TRADING**  
**FOOD PROCESSING MACHINES**

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# GROWING TO AUTOMATED TURKEY PROCESSING

## Marel's Unique Solutions for an Evolving Industry

**T**urkey meat is becoming ever more popular all over the world. Recent years have seen consumption continue to grow with the USA still accounting for a major part of the total. Turkey is eaten all the year round and not just at Thanksgiving and Christmas. Consumers appreciate its nutritional value and excellent taste. The meat has a healthy low fat image and is available in a wide variety of products with further processed items from turkey meat responsible for much of the growth in its consumption. Last but not least, the meat is seen as excellent value for money.

### Healthy and Protein-Rich

Turkey meat, particularly its white meat, has impressive health credentials. Turkey meat contains more protein per ounce than other meats and is lower in fat and calories than many other foods. It is therefore an attractive alternative source of protein for health conscious individuals. Turkey's naturally mild taste combines readily with different seasonings, making it an ideal choice in spicy ethnic dishes, as a substitute for higher-fat meats in favorite recipes and as a complement to other foods on the plate.

### Market Needs

The world's population is on the increase, as is the increase of protein consumed per capita. The turkey sector will be sure to benefit from both developments. Markets are demanding an ever wider variety of safer and healthier turkey end products. This means automated industrial processes yet enabling

processors to operate flexibly, producing a growing number of different end products.

### A Bird Apart

Turkeys are more than just "big chicken". Marel understands this perfectly. Its turkey processing solutions focus on the specific needs of this specialized market and are the result of in depth knowledge both of the market itself and of the necessary processing technologies. A turkey's specific characteristics dictate customized processing solutions. By using these unique systems, turkey processors can be sure of carrying out each single process step correctly, while keeping perfect control of the stream of incoming and outgoing products.

### Wide Range of Equipment

Marel leads the market for turkey processing solutions, leadership earned through years of dedicated experience developing equipment specifically for the sector. Today the company offers the highest level of automation for the highest processing capacities currently available. Marel provides robust solutions for processing today's turkey weights at hourly throughputs ranging from 250 birds up to a maximum of 3,000 males or 3,600 females (4-50/60bpm). Besides resulting in an efficient and effective automated process, company's solutions make for better working conditions for operators.

### Responsible Efficiency

Processors will always strive to produce as efficiently as possible whilst maximizing food safety and

quality. Production processes must run perfectly with the highest possible up-time and yields and the lowest possible cost of ownership, which should always be predictable. At the same time the closest care and attention should be paid to producing safe, high quality products in an ethical and socially responsible manner. Besides aiming to add value as effectively as possible, animal welfare, the careful handling of valuable raw material, full traceability and keeping a close eye on water and energy consumption will always be starting points for the provision of Marel solutions and services.

### Controllable Stunning

Marel's solutions for turkey live bird handling and stunning allow processors to keep these stages completely under control. Related to the market, a turkey processor can choose between waterbath stunning and Controlled Atmosphere Stunning (CAS).

Marel water bath stunnors use electricity to guarantee effective stunning. Depending on the settings used, it should prevent blood hemorrhages which would compromise fillet presentation. This poses challenges especially to European processing plants, since the EU-Regulation 1099/2009 requires high current stunning to comply with high welfare standards.

Controlled Atmosphere Stunning offers a unique solution to these challenges, combining high welfare standards with good meat quality. When applying CAS, the birds are stunned using the first-in, first-out principle. Turkeys are smoothly





transferred and it is easy to identify DOA's unfit for processing. This exceptional controllability adds substantial value to the end product.

An additional benefit of CAS stunning is the shackling afterwards of the fairly heavy turkeys. Hanging conscious birds into the line asks much time and physical effort from the operator, and could cause stress for the turkeys as well as possible injuries. This is avoided by shackling birds after stunning.

### Scalding for Quality

When it comes to scalding, it is essential to take into account local market preferences. The customers' wants and needs are decisive in determining how a product should look. To the processor, it is important to agree beforehand with the customer upon the accepted level of epidermis on/off. After that, the scalding configuration can be made.

Depending on the desired end product, Marel heavy duty (HD) scalders can generate the right scalding temperature and environment. Specialized Marel turkey scalders are equipped to accommodate very large products; they maximize plucking quality

and prevent loss of yield by always achieving a fine appearance which generates the highest quality product presentation.

### Dealing with Difference

Plucking of turkeys requires special attention. Turkeys in one flock tend to differ considerably in size and weight one from another. Guiding them through the pluckers can also be difficult because of their weight and lack of flexibility. The configuration of a turkey plucking line will, therefore, largely depend on the throughput and the weight of the birds to be processed. There are various kinds of plucking technologies, each of them dedicated to their own fields, suitable for all throughputs and extremely simple to set. One of the many options available is the counter rotating principle, which allows a softer, lower temperature scald. In this way, less equipment

is needed at higher line speeds, which minimizes wing damage.

Marel's plucking result is always excellent on every single part of the turkey, regardless of its size. This flexible way of dealing with difference during the defeathering stage is an essential part of successful turkey processing.

### Three-Point Suspension

The evisceration process consists of a number of modules which can be configured to suit your needs, your processing capacity and your degree of automation. Marel has a dedicated turkey solution for every situation. Products from shackles suspended from an overhead conveyor. A Marel three point suspension system angles products, so that they are perfectly positioned for each process step. This technique saves labor and ensures that the lower digestive tract does not come into contact with the product during evisceration. Contamination is therefore avoided. Marel Poultry offers a wide range of equipment for the turkey evisceration process, engineered to give optimum efficiency at the very highest line speeds. The equipment prepares products in the best possible way for chilling





and all subsequent downstream operations. Good evisceration is essential for achieving the highest standards of yield, quality and hygiene at the end of the line.

### Unique Chilling

Depending on what their market demands, turkey processors can opt for immersion chilling in water or in-line air chilling. Marel has developed a unique chilling process for turkeys, using the DownFlow Plus technology. The unique Aqua Film Control chilling tunnel is based on air chilling; there's no water immersion involved. Thanks to the specially designed moisturizing cabinets an optimum chilling performance is possible without the risk of water freezing.

This DownFlow Plus chilling technique also enhances the control of product presentation and color as well as prevention loss of yield. After chilling product is dry, preventing bacterial growth.

### Specialized Turkey Cut-Up

The ACM-T modular system has been specially designed for the automatic cut-up of turkeys. Separate modules are available for market-specific cut-up. The exclusivity of this Marel solution lies in its unequalled yield.

A wide choice of modules gives almost limitless configuration and production options, allowing the system to be used for all capacities and market requirements. Product carriers transport products through the different processing modules positioning them precisely for each operation even at high line speeds. Top yield and quality are the result. Examples of processing modules are modules to stretch product, to make an incision into the skin at the groin, to cut off front halves, and to cut stumps, socks and drumsticks. The system can be reset quickly for bigger or smaller products giving optimum production flexibility. Marel's ACM-T is suitable for air chilled products as well as water chilled products and can handle processing speeds of maximum 1,800 shackles/h for males or 2000 shackles/h for hens.

### Flexibility in Filleting

Unique in automated turkey processing is Marel's ability to fillet front halves. The advanced, modular FHF-XT solution allows for a maximum turkey meat yield. Switching between the modules for female or male turkey processing is easy. Thanks to the different modules that can be installed into the filleting line, the FHF-XT system can turn the front half of the turkey into various

products such as whole wing, wing in three parts, shoulder meat with or without skin, fillet with or without tenderloin, breast skin and carcass. The logistic benefits are clear; there's an enormous flexibility in lay-out of the filleting process, while being able to offer a vast variety of end products. The large diversity in filleting methods allow for tailor-made deliveries.

The system has the same maximum speed for males and hens as the ACM-T system. Depending on the level of automation, manual processing during filleting can be minimized.

### Final Stages

In this phase of processing, there's equipment available which is particularly adapted to turkeys. The Marel DMP45 meat harvesting system, for example, can handle primal parts or previously deboned parts of turkeys such as breast caps, carcasses and upper backs. The Marel Platino Flattener works well on turkeys; it can process turkey breast meat and inner fillets. In the final stages of the process there are solutions for every need - from portion cutters to graders, batchers, marinators, weighers and labelers.

[www.marel.com](http://www.marel.com)



## DUCK PROCESSING VARIES BY REGION

Duck processing has evolved considerably since 1989, when it implied 3,600 ducks per hour, with mainly whole birds as end products. Nowadays, processing capacity is up to 6,000 dph, resulting in whole products, cut-up parts, deboned meat and further processed duck food.

This increase in capacity has been made possible by continuous innovations in processing automation. Particularly Marel has contributed to the development of dedicated pluckers for specific areas, an additional waxing process, automated evisceration and automated cut-up.



*Marel eminently masters the process of waxing and offers unique, compact, fully enclosed and fully in-line single or double waxing systems, including an efficient wax recycling system, suitable for all capacities.*

### Vary by Region

It largely depends on the end products which are in demand by the market how a duck processor should configure the operations in the plant. There are many questions to answer. Does the whole end product still comprise head, neck or feet? How should the skin look like? Should duck meat be already cut up in parts? Should it be fully deboned, portioned or even further processed?

How end consumers like their duck meat best and which duck breed is preferred can vary by region. Duck meat in Europe totally differs from the Peking Duck in China.

### Product Requirements

In the process, the way ducks are scalded, plucked and waxed depends on the final product requirements. Specialized pluckers and a multi-stage waxing process can be implemented to get the appropriate results. The presentation of ducks requires a perfect breast skin: feathers should be completely removed, but the skin must not be damaged. Marel eminently masters the process of waxing and offers compact, fully enclosed and fully in-line single or double waxing systems, including an efficient wax recycling system, suitable for all capacities.

Marel can automate the entire duck evisceration process, including a vent opener, eviscerator, head remover and neck skin cleaner. Here again,



*Marel's ACM-NT is the duck cut-up system including the anatomic leg cutter.*

the array of evisceration modules and product harvesters depends on the final product specifications demanded by the customers.

### Versatile Tools

Marel's ACM-NT system is able to automate duck cut-up processes to any desired level. Modules for all sorts of operations at a capacity of 6,000 ducks per hour are available for both air and water chilled products. This solution allows for neck skin cutting, wing stretching, second joint and first joint cutting, front half cutting and anatomical leg cutting. The modular set-up allows for the production of various products, segmented wings, whole legs, breast caps or front halves.

Extremely valuable and versatile processing tools made by Marel are available for duck processors anywhere in the world. Automated duck processing can considerably reduce labor dependence. As the poor availability of workforce remains a persistent issue around the world, and hourly capacities are increasing, labor-saving automation is very welcome. While mimicking skilled manual operations with mechanical solutions, Marel's automation doesn't compromise in any way yield or presentation of the end product.

[www.marel.com/duck](http://www.marel.com/duck)

## VELEC SYSTEMS LEADING THE CHARGE INTO 2021 AND BEYOND



Loïc Pollet, CEO of VELEC Systems

**Meating Point Magazine spoke to Loïc Pollet, CEO of VELEC Systems, who is determined to make 2021 company's best year yet!**

**Q: Mr. Pollet, tell us about your company.**

**A:** VELEC started in the 1950s and its core expertise was to sort and realign products at high speed using centrifugal force. The first applications were coins, followed by bolts, nuts, screws, pharmaceutical pills and food.

Following the takeover by myself in 2011, the company completed a strategic realignment on food application, where its equipment was already highly appreciated by major companies including Nestlé and many others.

Anticipating market demand, VELEC has completely reviewed its machine design to an ultra-hygienic standard that is fully dismountable without tools, eliminates any retention areas

and changed hollow tubes to a fully open structure.

We are now forming a group with Acemia / Acinox, leaders in conveying solutions and hygienic solutions to be able to offer a full range of option to our clients as well as grow together as a group by sharing our knowledge and experience to best answer our clients requirements.

**Q: What's your core business and your main areas of competence?**

**A:** We offer complete engineered turnkey solutions which take raw products in bulk through the entire process from sorting and realigning to inspecting with optical cameras and finally counting, batching and loading products in selected primary packing (vertical bag, flow pack, trays, thermoforming machine, cartons) followed by secondary packing and palletizing.

Answering customers' needs, VELEC has developed all types

of equipment to offer the market complete solutions from an oven or a freezer through to the end pallet.

Among the key things our sales engineers involve not only our equipment but the customers' overall process in order to identify exact requirements to maximize throughput, equipment efficiency and understand how the systems should be designed for the long-term.

These include easy-to-clean conveying solutions, the IP69K robotic smart picker and collaborative palletizers.

**Q: What are your main values and future perspectives?**

**A:** We pride ourselves in adapting customers' existing solutions to their requirements. Where most of our competitors propose a "take it or leave it" solution we will review the dimensions of our equipment to make it fit a customer's factory or adapt it to the customer's end product. For example, we adapted our sausage loader for a customer manufacturing spring rolls. It is the same with automation. As standard, we offer Siemens for European customers, AB-Rockwell in North America and more recently with a German partner we have worked with B&R automation.

2021 is going to be our strongest year yet, and we look at the future with confidence. We are working on the expansion and modernization of our two plants in France and we are about to transform a strategic partnership in USA into a merger.





**Q: Tell us about your best selling equipment/ products? Who are your clients? What sets you apart from your competitors?**

**A:** We were fortunate enough to meet key players in the American meat business that had been badly affected by Listeria. Their health and safety engineering teams shared their experiences and pushed us to the maximum limit to design what has now become our working standard, and was recognized by the industry during IFFA 2019 as the most hygienic design solution.

Thanks to this demanding request, the VELEC Hygienic Design is available to customers large and small. This design exceeded all the original requirements and allowed us to secure orders and install equipment throughout Europe, North America and Asia.

Successful solutions include high-speed loaders for frozen burgers, sausages, breaded products and more.

We quickly understand their exact needs, taking into account type of product, expected throughput, available factory space and so on. This allows us to produce a preliminary report to establish solutions available within budget. We believe people don't have

time to waste and appreciate quick initial answers.

**Q: Are there any new launches? Which is your best selling equipment?**

**A:** We build and deploy machines and complete lines regularly all over the world. In November we installed complete lines in five different countries around the globe, and December will be very busy!

Since we worked on the improvements of our technological options (Optical control with ejection Unit, Venturi Automatic Cleaning Systems, Gripper Cleaning ramp, Cleaning in Place, Remote control...), we have seen a growth in all equipment's aiming for a smarter control, as well as more effective and smarter cleaning

**Q: How do you promote your company and products?**

**A:** We work with food customers all over the world who have heard about us online, at international events or through networking. Our best promotion today is our clients and partners that promote the VELEC way around them and we cannot thank them enough. Find us online, on social media or reach us via the phone to discuss your challenges with us at any time!

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

**A:** We have a few core achievements we have been deploying for some years now. First of all, we think of our solutions with the word 'simplicity' at the forefront of our mind, to ensure the use of as least parts as possible. Our lines have to be customized, but most of all they have to be efficient and easy to use. Then, with the continuous development of our IHM, our client can connect his production line to his systems and to VELEC's if requested.. We also set timers for the product maintenance, so we are sure our clients take good care of their lines and, in case of needs, we have remote assistance available on demand.

**Q: Where is your main market?**

**A:** We work worldwide, as of now France, Eastern Europe and Asia are accelerating quite a lot. Product wise our main market is meat, pork and poultry. Although we see an increase in demands in most verticals (bakery, cheese, ready meals, sweets, soup cubes) as well in the pharmaceutical sector.

**Q: How do you combat with COVID-19 crisis?**

**A:** We do have to adapt since we are not able to physically meet with all clients. For example, we installed a line in China completely remotely with our video system. In the current context, sections of our teams are working from home when they can, but technology is a major component when keeping in touch, being efficient and maintaining a strong connection within the teams, and with our clients.

## NATURAL ADDITIVES AND HPP FOR SAFETY AND CLEAN LABEL

There are several reports of *Listeria* outbreaks in North America from sliced meat products in the last three years. The last one took place at the end of October this year and is still under investigation, but to date 10 hospitalizations have been reported in 3 states (Florida, Massachusetts and New York), with one death.

The latest report from the European Center for Disease Prevention and Control (ECDC) includes 2,502 cases of listeriosis in the EU / EEA, with Germany (726 cases), France (370 cases) and Spain (284 cases) registering the highest incidence of this disease.

Unlike many other foodborne bacteria, *Listeria monocytogenes* tolerates saline environments and can even multiply at refrigerated temperatures (between 2 °C and 4 °C), being ready-to-eat meat products, along with dairy, the prepared salads and fresh fruits and vegetables, the main routes of infection.

### HPP Technology, a Food Safety Strategy

The combined use of natural additives and HPP allows to fight the *Listeria* infection and to develop meat products with clean label.

"High Pressure Processing (HPP) subjects the food in its final package to pressures between 400 and 600 MPa, achieving the inactivation of pathogenic and food altering microorganisms, while preserving its quality and organoleptic properties. It is an isostatic process in which pressure



is transmitted uniformly, at the same time and adiabatically, regardless of the shape or size of the processed product", says Alejandro Blanco, Sales Director of Hiperbaric.

An example of combined use to enhance the benefits of high pressure processing is found in the ferments. They are ingredients that result from the fermentation of a substrate, normally coming from dextrose, milk or by-products derived from plants such as corn or wheat starch, produced by food-grade microorganisms, usually lactic acid bacteria (LAB) or propionic acetic bacteria.

Although there is little scientific information on the composition of commercial ferments, it is known that the addition of 1% of one of them in hamburgers led to an

initial reduction in *Escherichia coli* O157: H7 counts and a bacteriostatic effect against *Listeria monocytogenes* (Dave et al, 2003).

"Some HPP products already include ferments in their formulation to complement the lethal effects of technology, for example the Garden Fresh Gourmet range of soups, Giant Eagle salads or Chef'd ready meals", explains Mr. Blanco.

Other example is the combined use of HPP and celery extract, sea salt, or beet juice as a natural source of nitrites, in combination with an ascorbic acid source, such as cherry extract. "This alternative is currently used by some meat producers, such as Hormel Foods in its Natural Choice range. It allows to avoid the use of sorbates, ascorbates and other chemical additives", claims Alejandro.

Finally, in meat and dairy products, it is possible to combine HPP and nisin, a bacteriocin produced by *Lactococcus lactis*, which is used

According to Hereu et al., a study conducted in 2012, showed that the addition of 200 AU / cm<sup>2</sup> of nisin in two different types

Other studies show that *L. monocytogenes* and *Salmonella* spp can be controlled effectively for at least 90 days, combining HPP (600 MPa/87,000 psi for 5 minutes) and adding 800 AU/g of nisin in cooked ham (pH = 6,28, aw = 0,98). Without a treatment with HPP the pathogens could survive, even under refrigerated conditions (1 or 6 °C) (Jofré et al., 2008).



to control Gram-positive bacteria (such as *Listeria monocytogenes*) or spore-forming bacteria (e.g. *Clostridium* sp.). It is the most widely used bacteriocin because it is GRAS in the US and has been approved in 1983 by the European Food Safety (EFSA).

of cured ham, one with a water activity (aw) of 0.92 and aw = 0.88 working in turn with HPP (600 MPa / 87,000 psi for 5 min) achieved the inactivation of *Listeria monocytogenes*, respectively 6 log CFU / g and 4 log CFU / g.

For all the above, HPP is a strategic alternative to other conventional process to reduce the amount of chemical preservatives and guarantee safer, more natural products with a longer shelf life. In the particular case of meat products, HPP practically eradicates the listeriosis risk by itself, or in combination with other processes and means (natural additives, curing or marinating processes, etc.).

[www.hiperbaric.com](http://www.hiperbaric.com)

## Leading the way in innovative turkey processing

Marel offers the most advanced level of automation for the highest turkey processing capacities currently available.

- Consistently high yield of superior quality end products
- Optimized productivity and efficiency
- Full traceability and production control
- Unique technologies, including three-point suspension system

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## AVOIDING BACTERIA AND CONTAMINATION: PLANT MANUFACTURER IMPLEMENTS HYGIENIC 100 TONNE/DAY ICE SUPPLY FOR FISH PROCESSOR

### Stainless Steel Construction Provides Food-Safe Ice Storage

In 2018, a fish processor needed machinery to produce and store flake ice for cold fish shipping for a new factory on Denmark's North Sea coast. Given the planned size of the 90-tonne ice storage at 15 m long, 4 m high and 4.5 m wide, a solution was required that could be installed outside the factory building. At the same time, the food processor had to meet demanding hygienic requirements, meaning that the plant components coming into contact with water and ice would have to be food-safe. The company placed an order with KTI-Plersch Kältetechnik GmbH of Balzheim, Germany, a plant manufacturer with a 30-year track record in this field. The ice plants were installed in containers and set up next to the outside wall of the building so they take up no interior space. Almost all parts coming into contact with ice are of stainless steel, and the design is optimized for thorough cleaning, enabling fully hygienic operation. Furthermore, the use of ammonia and an economizer in ice production, plus integrated



*Siting the ice plant and storage outside the building means that no inside space is taken up. The conveyor system ensures fast provision of the ice to the dosers.*

water pre-chiller, keep energy use about 10 percent lower than comparable ice plants.

World fish consumption has risen steadily for years, as figures from the World Nutrition Organization FAO show. Currently, 154.2 million tonnes are consumed each year. In order to harvest, process and ship these enormous quantities, well-networked production and supply chains are needed that get fresh fish to consumers quickly and as freshly caught as possible. Proper cooling is essential for keeping fish fresh, and in most cases this involves the use of ice. This is the case at the factory of a big fish processor in northern Denmark. "The 15-metre ice plant was too large for the factory, so it had

to be sited outside the building," reports Michael Walleter, director of Sales and Marketing at KTI-Plersch Kältetechnik GmbH. "At the same time, we needed to carefully plan the 40-metre feed distance from ice production and storage to the four ice dosers that fill the ice into fish shipping crates. Otherwise there can be difficulties in supply, since the dosers can only take about 150 kilos of ice at a time, and every metre of distance reduces the flexibility of supply."

Another challenge was the design of the machinery itself, since the ice has to be hygienically pristine at all times. That meant leaving as few hard-to-clean corners and gaps as possible. The ice plant produces ice flakes



*A steel structure supports the entire ice plant and storage system.*

about 1.5 to 2 mm thick, which are liable to clump due to air humidity, and to partial melting and refreezing, so KTI also had to pay attention to keeping the humidity and temperature in the ice storage at a constant low level. Otherwise the ice would not be properly dosable, and would furthermore lose its major advantage over other forms of ice, namely its low volume and high surface area for maximum cooling effect. And last but not least, the energy efficiency of the entire plant had to be as high as possible, since ice making is a very energy-intensive process.

### Modular Design of the Plant with Standard Containers

"We solved the problem of lack of space inside the building by installing the machinery in standard shipping containers," explains Walleter. "This approach, which is typical for our refrigeration solutions, made it possible to stack the powerful ice maker, which can turn out 100 tonnes a day, and the associated 90-tonne storage



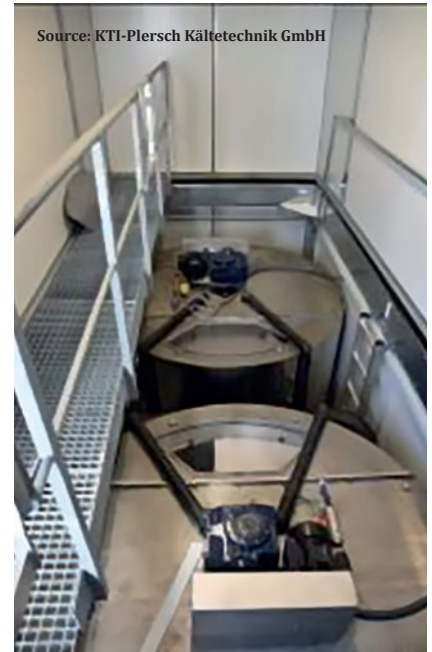
Source: KTI-Plersch Kältetechnik GmbH

*The ice is transported through the building wall.*



Source: KTI-Plersch Kältetechnik GmbH

*A separate ice discharge permits ice to be taken directly from the storage container.*



Source: KTI-Plersch Kältetechnik GmbH

*Two ice plants with 50 tonnes per day output each. A pre-chiller cools the fresh water from 18 °C to 5 °C, for higher energy efficiency.*

unit with KTI's proprietary ice rake system, on a steel structure next to the outer wall of the factory. The ice conveyors and distributors under the ceiling inside the building are thus easily accessible. As a result, no inside space is used, and the ice can be sent to the dosers quickly." Nevertheless, for the remaining ice feed distance, the interaction

with ice storage still had to be carefully controlled. "For this we developed an intelligent control system that makes sure there is always enough ice, while preventing it from staying unused in the transportation system for too long," reports Walleter. "The choice of suitable screw conveyors, which are lubricated exclusively with food-safe grease, and the lack of a hopper ensures that the ice flakes will not clump or get contaminated on the way from storage to the fish shipping containers."

To meet requirements for the hygienic production and storage of the ice, KTI chose to use stainless steel for almost all of the components coming into contact with the ice. "The construction of a stainless steel tank inside the ice storage was a big challenge," explains Walleter. "Since there is a moving rake to keep the ice evenly distributed, there couldn't be any cross-struts. We still needed to provide for the stability and evenness of the



Source: KTI-Plersch Kältetechnik GmbH

*A moving ice rake keeps the ice evenly distributed. This meant that no cross-struts could be used in the tank itself.*



walls. Many metal fabricators turned the job down, so we had to make the tank ourselves." The antibacterial properties of the stainless steel and its imperviousness to cleansers virtually preclude any contamination of the ice, while making cleaning easier. In constructing the system, ground welded seams were used to minimize dead spaces, while components that are difficult to clean, like the drives for the moving rakes, were enclosed in housings. Another feature minimizing the risk of contamination is an automatic lubricant dispenser for the regular lubrication of moving parts with food-safe grease.

### Energy Efficiency Through Ammonia, Economizer and Pre-Chiller

Finally, to optimize energy efficiency through the entire process from ice making to storage and delivery, KTI also installed a pre-chiller that cools the supplied fresh water from 18 °C down to 5 °C, before it is frozen in to ice. The



Source: KTI-Plersch Kältetechnik GmbH

*Software developed by KTI controls the delivery system so that there is always enough ice in the distributor stations.*

pre-chiller refrigeration unit works in the 0 °C range, while the ice is frozen at -25 °C, meaning that the freezing unit requires less energy. This gives substantial savings. "In addition, as a refrigerant for ice production we use ammonia (NH<sub>3</sub>), which is environmentally unproblematic and available in basically unlimited quantity. In combination with an economizer and the pre-chiller, this improves energy efficiency by about 10 percent over comparable plants," according to Walleter. "The storage was comprehensively insulated to prevent warming of the air in ice storage by the outside air, which would increase energy consumption." KTI used its patented Air Channels, which



Source: KTI-Plersch Kältetechnik GmbH

*Suitable screw conveyors, which are lubricated exclusively with food-safe grease, ensure that the ice flakes will not clump or get contaminated during delivery.*

are unique in the industry. These form a kind of insulating layer between the inner and outer walls of the container, through which cold air constantly flows. This holds the temperature inside the storage at a constant -7 °C, preventing gradual warming and thawing of the ice. This technical outfitting of the ice storage ensures that once produced, the ice can be stored with no problems for several days, and then delivered and dispensed.

"Overall, installation of the entire ice supply parallel to the ongoing construction of the factory proceeded rapidly and problem-free, since we had preassembled all of the machinery in-house, eliminating the need to do much of the work on-site," explains Walleter in conclusion. "Thus, after delivery of the containers to the factory grounds by truck, we just had to put them together and connect the lines and cables. There was almost no interference with the customer's operations, and installation time was reduced from three or four months to about six weeks."

[www.kti-plersch.com](http://www.kti-plersch.com)



Source: KTI-Plersch Kältetechnik GmbH

*The ice dosers fill the fish shipping crates with the suitable quantity of ice.*



## THE LATEST DEVELOPMENT FROM HIGEL: SCALE ICE MAKER - HEC 141 EB 11



Higel Kältetechnik e. K. Hartmut Higel has been developing and producing high quality scale ice makers since 1997.

Butchers and meat industry, as well as fish and poultry processors, bakeries and food manufacturers can benefit from company's latest development.

### HEC 141 EB 11

With Automatic Flush  
Without Chemicals

Production capacity:

**1,135 kg / 24 h**

Power consumption:

**0,56 kW**

Voltage:

**2230 V / 50 Hz/1~**

Weight:

**3130 kg**

Dimensions:

(width / height / depth)

**600 / 1580 / 780 mm**

Max. capacity in bin:

**90 kg**



## ENHANCED QUICK CHILLING TUNNEL BY DMRI

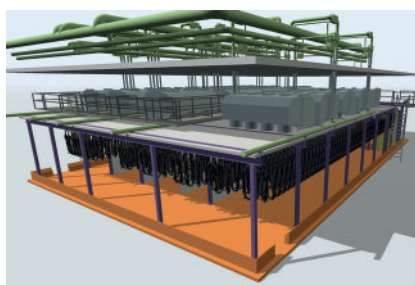


DMRI has introduced an intermediate deck in their quick chilling tunnel design for pork.

The new deck provides the tunnel with a more aesthetic appearance, less process room volume and easier access for service and maintenance during operations. These changes lead to a lower energy consumption (>10%), a faster cleaning procedure and less chill loss (0.1%) compared to the traditional design.

### Improve your Next Carcass Chilling Project

Chilling is the largest energy consumer in the meat industry, and chilling of meat heavily affects meat quality and yields. An excellent chilling process will minimize PSE and DFD, improve tenderness and juiciness as well as ensure optimal food safety.



DMRI designs chilling processes with a chill loss of 0.7% to 1.3%, depending on the choice of process (hard/soft). On top of that, they can provide a chill loss guarantee.

Many meat companies have already benefitted from company's holistic consultancy approach ensuring that their investment project in a new meat production or refurbishment project is profitable.

[www.dti.dk](http://www.dti.dk)

# ARGENTINIAN MOTTA GROUP WANTS TO CONQUER SHELVES ABROAD WITH THE CALISA BRAND

## Calisa2 Poultry Processing Plant is Like an Oasis

The Motta Group, one of Argentina's leading poultry companies, is investing more than 22 million dollars in the expansion and modernization of its processing operations. The Calisa2 greenfield project in Racedo is key to the Argentinian and South American poultry market. It will be like a production oasis, starting at 9,500 bph [158 bpm] and fully prepared for 15,000 bph [250 bpm] within two years.

Augusto Motta, son of founder Héctor Motta, explains, "Our existing plant no longer had any more options to grow. Furthermore, we wanted to separate the processing of broilers and layers. Our completely new Calisa2 plant is fully dedicated to broiler processing. It will allow us to increase production more than fourfold. We therefore decided to install the whole Marel package, with full state-of-the-art technology."

### State-of-the-Art

Marel is to supply the entire processing line from primary through secondary processing to batching and packing. With special emphasis on product presentation, the Motta Group focuses on accurate scalding, plucking and in-line tenderness processes. Marel's solutions meet these needs in full. Calisa2 is making use of the latest Marel technologies for evisceration and giblet harvesting. This is particularly important, as most Calisa whole birds are sold complete, stuffed with giblets packed in a bag. Further Marel solutions can be



*In Racedo's industrial area, the Motta Group will establish the Calisa2 greenfield processing plant like an oasis, surrounded by planted trees.*

found in the secondary process, such as SmartWeigher and IRIS weighing and grading devices, ACM-NT cut-up system, FHF-XB breast filleting and SensorX X-ray inspection. Up to batching, packing and palletizing products, Marel is involved. "All these Marel systems will help us manage future growth and maintain the highest standards of product presentation and taste."

### Big Ambitions

Today, Calisa1's production is 2 million birds per month. Calisa2 will increase this figure to 8 million. 60% of the products are produced for the domestic market and 40% for export to more than 20 countries in Latin America, Europe and Asia. Augusto Motta continues, "We already supply important supermarket chains such as Dia and quick service chains such as Burger King, Mostaza

and Subway. With Calisa2, one of our most important challenges is to reach shelves abroad with our own brand and packaging. We have big ambitions to continue exporting to Canada, Africa, the Middle-East, China and also reach new markets."

### Sustainability

Sustainability is a valuable asset for the Motta Group. Augusto Motta says, "We are going to reduce our environmental impact. With the 26,656 poplars and pines to be planted on 34 hectares, we will create a natural lung in the town of Racedo. We will even generate a positive carbon footprint. We will use treated waste water for irrigating the trees in this project." The Motta Group also commits itself to strict rules on food safety, biosecurity and animal welfare.

[www.marel.com/poultry](http://www.marel.com/poultry)  
[www.calisa.com.ar](http://www.calisa.com.ar)



## NIACET LAUNCHES CLEAN LABEL PRONIATURÈL RANGE WITH THREE INNOVATIVE PRODUCTS GUARANTEEING SHELF LIFE EXTENSION AND FOOD SAFETY ACROSS MULTIPLE APPLICATIONS

Global provider of food safety and shelf life extension ingredients, Niacet, announced the introduction of their clean label range of ingredients for microbial control - ProNiatùrèl. The new range offers manufacturers looking to produce clean label products pure, transparent, and effective ingredient alternatives to chemical preservation ingredients. Today's consumer is increasingly concerned with what goes into their food, with more and more people actively seeking out 'free-from' products with natural claims. The new ProNiatùrèl range answers this demand, with a variety of effective microbial control products, all entirely clean label.

The first product launched in the ProNiatùrèl line - ProNiatùrèl Nc - is designed specifically for baked goods. Utilizing pure calcium vinegar salts to control mold growth and extend shelf-life, it can be labeled as neutralized vinegar, dry vinegar or vinegar salt. When trialed using baked goods, a low dosage of ProNiatùrèl Nc was found to inhibit mold growth over an extended shelf-life period, and also performed best in a sensory evaluation of aroma, taste, and aftertaste, compared to a control group and other standard preservatives, such as calcium propionate and wheat ferments.

The other two products currently in the ProNiatùrèl line - ProNiatùrèl N and ProNiatùrèl Ns - are targeting applications in the areas of processed meat, poultry and

fish products as well as plant-protein based meat replacers and spreads and sauces. Both products utilize the long-known effects of vinegar against bacterial spoilage and therefore assure shelf-life and food safety. Both ProNiatùrèl N and ProNiatùrèl Ns are based on natural vinegar and are fully neutralized, meaning they can be labeled as neutralized vinegar, dry vinegar, or vinegar salt. Multiple external trials and challenge tests have proven the efficacy of both products and sensory evaluations have shown no impact on smell, taste and structure. Due to the high purity and proven efficacy of vinegar salts, the use-levels of ProNiatùrèl N and ProNiatùrèl Ns are low - lower than with most clean label products - and therefore cost-effective.

Offering unparalleled efficacy, all products in the ProNiatùrèl range are produced as a free-flowing powder or granulate to reduce transportation and storage costs and help maintain a greener carbon footprint. Plus, as part of our commitment to providing transparent clean label ingredients, all products in the ProNiatùrèl range will undergo C-14 analysis, ensuring the product is made from only fermented vinegar and free from any unwanted additional chemical

elements, like petrochemicals, that can occur in other fermentation processes. Niacet's ProNiatùrèl offers transparency, purity, and integrity throughout the entire portfolio.

Jeff Rogers, COO at Niacet, explains "The key behind the new ProNiatùrèl range is in its transparency. We begin the



process by using straightforward, familiar ingredients from which we create, consumer-friendly antimicrobials - perfect for clean label solutions. The first product innovations in the new range are designed for two applications areas: ProNiatùrèl Nc for bakery goods and ProNiatùrèl N and Ns for meat- poultry- and fish-based products as well as meat-replacers and spreads and sauces. We also have an exciting pipeline of clean label products we're looking forward to present in the future. Having established ourselves as an authority in food safety, with more than 85 years of experience, Niacet are now pushing further into the clean label space with our newest offering."

[www.niacet.com](http://www.niacet.com)

# THERMAL SHOCK TREATMENT OF MEAT SURFACES CAN DOUBLE THE SHELF LIFE OF MEAT PRODUCTS IN THE RETAIL SECTOR

By Mari Ann Tørngren and Tomas Jacobsen

The shelf life of processed meat products normally depends on a range of factors, such as pH, salt content and other preservatives, packaging and storage conditions. Spoilage in vacuum-packed meat products typically occurs as a result of lactic acid bacteria and, for example, *Brochotrix*, although there is also a slight risk of certain pathogenic bacteria growing during storage, which will reduce the shelf life of the meat.

The Danish Technological Institute has developed and tested a method for heat treatment of vacuum-packed meat surfaces using thermal shock, where a high temperature is applied for such a short time that the quality of the product is not compromised.

The method, known as flash treatment, is a form of heat treatment whereby the vacuum-packed meat product is placed in a closed treatment chamber, and 130°C hot water is poured over the meat for a specific period of time. This results in a reduction in the microbial flora that could have contaminated the surface, for example during repacking, and will enhance the sensory shelf life of the product in the retail sector.

## Extended Shelf Life

Flash treatment was tested on smoked pork loin and pork belly roll (Figure 1) and showed that it was possible to reduce the initial



Figure 1. Smoked pork loin and pork belly roll after flash treatment

bacterial count by approx. 1 log after 40 seconds of treatment. The products were subsequently stored at 5°C and were regularly assessed for sensory changes while the remaining bacterial flora continued to grow.

The trials showed that the odour of the product changes before the appearance and that the shelf life

can at least be doubled when the meat products are flash treated after repacking (Table 1).

When not treated, the smoked pork loin changed to an unacceptable degree after 55-77 days, whereas spoilage did not occur during the test period in meat products that had been flash treated (Figure 2). This effect is presumably due

Product	Parameter	Reference	+ Flash	Effect
Smoked pork loin	Odour	55-70	> 126	Double + 55-70 days
	Appearance	80	> 126	
Pork belly roll	Odour	75	> 154	Double + 80 days
	Appearance	145	> 154	

Table 1. Shelf life of smoked pork loin and pork belly roll with and without flash treatment

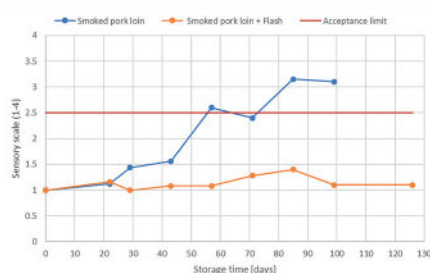


Figure 2. Changes in odour for smoked pork loin with and without flash treatment (n=5)

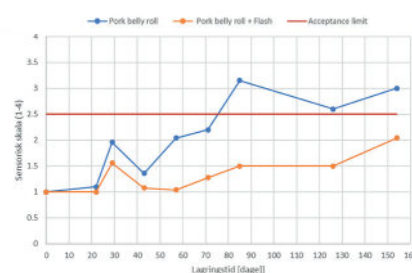


Figure 3. Changes in odour for pork belly roll with and without flash treatment (n=5)



to the fact that flash treatment inactivates the psychrotrophic bacteria that grow at 5°C. This is confirmed by the fact that, after 99 days of storage, 8.3 log/g was found on untreated surfaces, whereas only 1.4 log/g was found on the flash treated samples.

The same tendency was observed for the pork belly roll, although the acceptance limit was reached after 75 days for untreated products, whereas the acceptance limit was only just about reached at the end of the test period after 154 days (Figure 3). The flash treatment therefore resulted in a shelf life extension of more than 80 days for pork belly roll (Table 1).

### Same Level of Food Safety

The trials also focused on the heat-resistant bacteria *Clostridium*

*botulinum* and *L. monocytogenes* since these are capable of growing at low temperatures in vacuum-packed food products. Meat products are usually protected against growth of *C. botulinum* through curing and/or other preservation methods, and they can therefore achieve an extended shelf life both in terms of sensory acceptability and food safety when they are also flash treated. In products where there is a risk of growth of *L. monocytogenes* or *C. botulinum*, the effect on shelf life in terms of food safety will be limited, also for flash treated products.

With the development work now complete, the Danish Technological Institute is now looking for partners to assist in the further development of the technology for industrial applications.

The research activities were supported by the Pig Levy Fund and the Danish Agency for Higher Education and Science.

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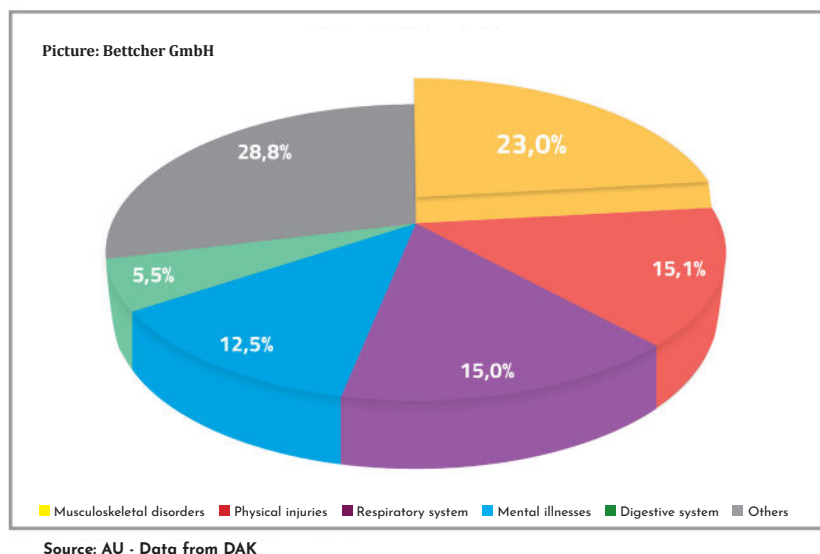
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[www.globalgap.org](http://www.globalgap.org)

## THE IMPORTANCE OF ERGONOMICS: BETTCHER QUANTUM® TRIMMERS FOR SAFETY, COMFORT AND HIGHER YIELDS



*Percentage of absenteeism from work and the related causes.  
Statistics data taken from DAK health insurance, Germany.*

downtime, medical treatment and, in chronic cases, to temporary and permanent disability.

For musculoskeletal disorders, there is usually no single cause. They are due to a combination of different factors. According to occupational and medical research MSDs are caused and aggravated by the handling of heavy loads, maintaining a static position, forced postures, working with increased force, effects of whole-body or hand-arm vibration, as well as repetitive motions with high handling frequency such as manual activities that involve repetitive rotational and bending movements.

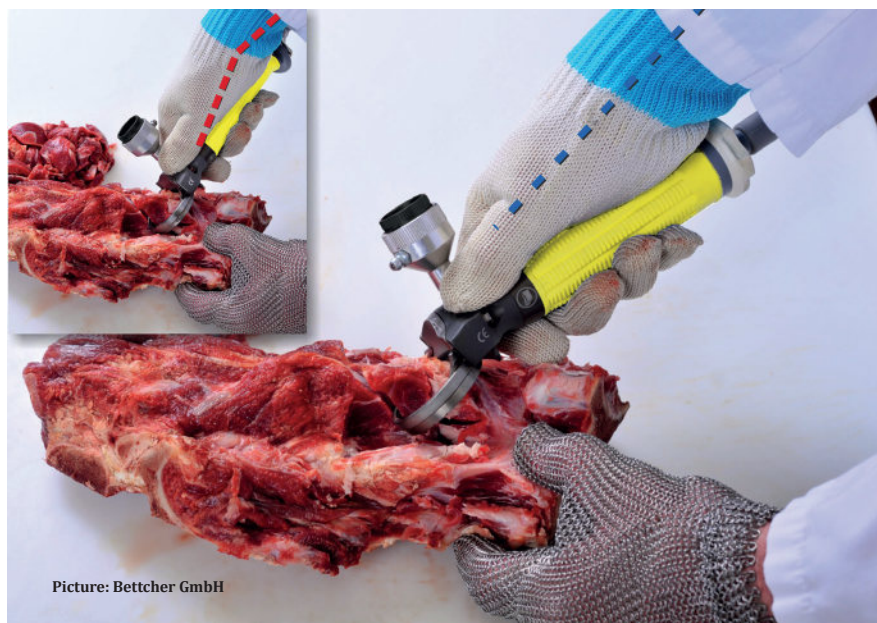
### Ergonomics and the Meat Processing Industry

Research studies and articles have examined the topic of ergonomics and have warned that the use of

Bettcher Industries Inc. headquartered in Ohio, USA, is a leading-edge producer of high-performance trimming tools for the meat processing industry. The company's European subsidiary, Bettcher GmbH, is located in Dierikon, Switzerland. One of the outstanding features of Bettcher's meat trimmers is ergonomic benefits that enhance employee safety and comfort while also achieving a measurable increase in productivity.

Musculoskeletal disorders (MSDs) are among the most common occupational disorders according to the European Agency for Safety and Health at Work. The negative impact of MSD worsens with increasing age. These disorders affect millions of workers across Europe and represent a huge cost factor for employers - costs of several million euros. Sick leave costs a company on average between 200 - 400 euros per day.

Most work-related musculoskeletal disorders arise over time and usually affect the back, neck, shoulders and limbs. They develop gradually and can last for months. They cause health problems ranging from mild pain to serious illness, and can lead to



Picture: Bettcher GmbH

*Optimize ergonomics and productivity the 15-degree angled head Bettcher Quantum Flex Trimmer*



inferior knives and other trimming tools on the production line can cause serious health problems. Prevention measures include changes in workplace design, better tools and educating workers (raising awareness of hazards and training them to follow good work practices). Ergonomics has a decisive impact on the health, safety and comfort of workers. Health-related downtime is reduced, thereby reducing manpower shortages and labour costs. Tasks are carried out much more efficiently, leading to a measurable increase in productivity and yields.

required for cutting work. The system's design, power and higher torque take all the latest findings in ergonomics and transform them into a high-performing tool.

René Hansen, International Sales Manager for Bettcher, explains: "Today we know that the use of straight knives for meat trimming results in higher force on the wrist - especially when the cutting action is performed near the tip of the blade. In addition, knife length, shape and hardness play a major role, as well as shape, size, material and the structure

engineered to optimize ergonomics and productivity. In effect, the blade is angled, enabling both wrist and forearm to operate in a more natural position. This reduces stress and increases product throughput.

The trimmer handles are available in various sizes which are quick and easy to change and are designed for long life as well as comfortable operation. They are manufactured using vibration-absorbing plastic, which has the added effect of keeping hands warmer than metal handles. A new non-slip, adjustable thumb support gives the operator even more control over the grip. Another feature is the Micro Break hand strap. This sturdy carrying strap allows operators to relieve their fingers between individual grips while retaining full control of the tool.

An intelligent motor controls the resistance, speed and movement of the blade and adapts the force to the situation, depending on whether the meat is being trimmed or the machine is idling. This allows users to work with less effort. Overall, the innovative Quantum® trimmers are characterized by significantly less weight - another key advantage that contributes to a reduction in worker fatigue.

### Easier Work, Higher Yields

Less effort on the part of the operator, prevention of discomfort, MSD and fatigue, and thus higher returns - this is how the Bettcher Quantum® series excels. "Our research and development experts are constantly working to make Bettcher products even more ergonomic, user-friendly and efficient - and to push the boundaries a little bit more," says René Hansen.

[www.bettcher.com](http://www.bettcher.com)

*Quantum Flex Trimmer*



Picture: Bettcher GmbH

### Bettcher Quantum® Trimmers: Safety, Comfort, Efficiency

The Bettcher Quantum® high-speed trimmer system is the result of Bettcher's extensive research and development efforts. It offers wide-ranging improvements for industrial meat processing companies by doubling the blade speed and reducing the amount of power

of the handle. With ergonomic design, all these factors are taken into account to reduce the kind of stress that results in musculoskeletal disorders."

### Advanced Technology with Far-Reaching Benefits

The housing of the Bettcher trimmer series features a unique 15-degree angle which is specially

## DISRUPTIVE FOOD CHANGES

By Henk Hoogenkamp

As families redefine meal occasions, demand for at-home deliveries is increasing. The COVID-19 pandemic has given additional segment growth. As a result, food brands are adapting their business strategy and branching out of traditional platforms so as not to lose consumer engagement. The quality of food, as well as the enhancement of consumer's overall experience, are important parameters in defining the success of home delivery. In particular, prepared food brands will be able to capitalize on the growing home delivery market by using smart delivery technologies ranging from apps, autonomous vehicles, robots, and drones.

For food consumers, there has never been an easier time to get what they want delivered in very short time, at the click of a smartphone app. "Fingertip" ordering will be the future of the hugely competitive arena of the food delivery services. The

lifestyles and do not want to worry about meal preparation.

Apps and delivery services are rapidly transforming consumers' attitudes, as well as having instant access that attracts tech-savvy consumers of the sub-30-age population, who think outside traditional legacy retailers and restaurants. This younger generation are looking for more convenience. An example is McDonald's teaming up with UberEats to capture the rapidly developing market for ready-to-eat home delivery.

Consumers are ordering deliveries -such as using UberEats, Just Eat, DoorDash- at breakfast, lunch, and dinner. With more consumers working from home because of the COVID-19 lockdown- fast food online food and delivery service have seen significant increases in sales.

The e-commerce launches are also benefitting plant-based

home ordering, as consumers change eating preferences to stay indoors during the COVID-19 pandemic. It will be interesting to see if these changes take hold permanently once the corona-crisis is over. Moreover, legacy food companies such as PepsiCo, Nestle, and Kellogg's are making forays offering bundled food brands into the direct-to-consumer digital ordering space.

### Online and Mobile

In a relatively short period of time, digital ordering services have become a "must-have" and are no longer just considered a "nice to have". It is expected that food delivery services will continue to grow, most specifically in non-traditional delivery outlets. For the food service industry -including casual dining restaurants- the trick is to try to figure out how revenue can be increased without physically expanding the business.



revolutionary change will first be seen in the mega-cities, where most of the people live very busy

food products. The popularity of plant-based products reflects a rapid shift towards ready-to-eat

People are ordering more food through apps on their smartphones or by calling in. These app-options are changing the conventional restaurant industry as it is known today. Restaurants will need to modify menus and select only those ingredients that hold up the quality expectations between time of food preparation and time of delivery at the home or office. The reason is obvious: food delivered to a restaurant table tastes quite different than when it has been in a box for 60 minutes or longer.



## Exponential

As with all exponential technologies, it can be expected that the food business models will change or disappear or become completely modified in the next 10 to 20 years. The road to the 4th Industrial Revolution will bring disruptions in

companies did little to innovate simply because consumers were accustomed to seeing the same products on the food store shelf time after time.

Sales across the various legacy food brands show a steady downward slide. The sometimes-

basic principles, they oftentimes will find themselves right back where they started.

## Women Drive Change

When developing a new food product, it is no longer sufficient to understand the ordinary demographics like age, gender, and income. Probably with the exception of sports nutrition, women are driving most of the new food product sales across all categories. Marketers must now be aware of lifestyles, attitudes, and even household compositions of targeted consumers. Consumers want food transparency, accountability, sustainability, affordability, and convenience. These desires can sometimes be in conflict with revenue growth and short-term profitability.



areas such as artificial intelligence, education, 3D printing, molecular agriculture, including slaughter-free meat.

Some of the largest food and beverage brands seem too slow to innovate and are struggling to sell their products to a new generation of shoppers. Consumers aged 30 and below are social media savvy and prefer personalized food choices with many gradations of preferences- be it ecologically sustainable, natural and organic, or dietary-modulated.

During the pre-social media and pre-Amazon era, it was very difficult and expensive for upstart entrepreneurial food companies to get noticed in the crowded market sphere. For many decades, the legacy consumer-packaged food companies were hardly challenged by competition from upstarts. As a result, the legacy

seismic shift in market dynamic can be explained by the new generation of consumers who are actively seeking out unique and authentic brands that meet personal preferences like "green and clean", rather than just responding to classic advertising tactics. The huge penetration of upstart brands selling plant-based meat analogs is proof of this disruptive market change.

Going forward, legacy food companies often acquire upstarts because of their own lack of R&D vision. Snatching up or taking a financial interest in entrepreneurial-driven food start-ups has already taken hold and can now frequently be witnessed. The main problem that legacy food companies need to solve is how to preserve the uniqueness and authenticity of their newly acquired products. If the legacy brands do not adhere to these

Sustainability and green environmental issues are on the minds of consumers, although the impact is less than it seems. Perhaps consumers have subconsciously relegated certain environmental issues by blocking certain thoughts from their minds and considering these less important than social factors and personal wellbeing. When it comes to food, many consumers are rather self-centered and egotistical.

## Extremes in Demographic Societies

The food industry has been largely responsible for the creation of hedonistic foods, which combine superior organoleptic properties by using sugar, fat, and salt with the sole objective of triggering compulsive eating. These triggers are boosted by a mechanism whereby the dopamine neurotransmitter - a pleasure

hormone- is released, causing a behavioral condition that keeps the consumer coming back for more.

It is a rather strange phenomenon that large numbers of consumers are both obese and malnourished. For example, about one in six Americans are food insecure, and many of these people frequently opt for inexpensive food choices that are low in nutritional value. In other words, hunger or malnutrition is not always a shortage of calories, but often a shortage of essential nutrients like protein. A long-time diet of excessively loaded calories lacking nutrients, together with compulsive eating, eventually causes obesity and degenerative diseases. Come to think of it, people living of food stamps or receiving "Food Bank" food should be restricted from purchasing or receiving unhealthy sugary drinks, calorie-loaded chips, and candy.

The recession of 2008 has had an impact on the ability of many people to deal with the most basic of issues, such as purchasing affordable and nutritious food. One should distinguish between the various interpretations of hunger and malnutrition. There are certainly fewer hungry people in the US and EU than in Africa. It goes without saying that countries that are truly food deficient should be supported by the affluent countries whenever possible. However, rapidly changing world demographics are also bringing inadequate food availability closer to what are considered affluent societies.

The situation of inadequate nutrition is not much different in the EU and the US. These

countries have become examples of modern and affluent societies with a huge number of entitlements. Once people get used to food and other entitlements, it is difficult to untangle the political landscape and make freebies a thing of the past.

### Changing Habits

Eating and diet habits change over time as a result of evolving cultural and socio-economic factors. For example, the dogmatic attitude of some American fast food companies to sell 100 percent pure beef hamburgers will ultimately be unsustainable. For varied reasons, consumers living in developing countries or economically-depressed regions have demanded change and forced food companies to loosen their formulaic guidelines and adapt to local and regional flavors. In the future, food service will be largely unrecognizable, compared to its current business model. Product innovations, new flavor preferences, and continuing demands for affordability, healthy choices, and made-to-order 24/7 conveniences will drive these changes.

Meat, hybrid plant and meat blends made into burgers are a good way to increase sustainability. Seen from an environmental perspective, replacing a portion of the meat with plant protein ingredients will hugely reduce CO2 emissions. Food products made from blends of plant and meat can be positioned as a hybrid product that will interest flexitarians, who do not reject meat but are moving towards a positive "feel good eating" experience.

The food service industry has come to realize that "health"

does not necessarily sell - at least not now. Many fast food customers do not necessarily want to know what is in their food, but just want to enjoy it without the burden of guilt.

Food service may be a leader in setting culinary trends, but its nutritional correctness often lags behind retail. This is largely due to the absence of nutritional labeling on food service products, supported by the mindset of many consumers who seem to have a double standard when it comes to purchasing food at a grocery store versus eating out. Fast food customers say they want to eat healthy, but when decision time comes, they often end up choosing the food that does not align with their intentions.

### Demographic Changes at Different Speed

Demographic changes are influencing food trends, but in different ways around the world. In developed countries and affluent societies, there is an aging population that is more health-conscious, with more discretionary money to spend. At the same time, segments of society are trapped at either end of the economic spectrum - the age of both prosperity and austerity. These separate segments will drive out average-price quality and force food marketers to position foods at either end of the spectrum. Special "Value Menus" are perfect examples to illustrate this. These low-end foods increase much-needed traffic for supermarkets and restaurants to maintain business, as well as not lose important demographic segments.



Consumers are increasingly prioritizing health which, for time-pressed people, will carry over into the ready-meal sector wherein customization will become of main importance. Traditional family meals are rapidly disappearing. Instead, people often eat “ready meals” solo without the pleasures of relaxation and dinner table conversation. The huge availability of ready-to-eat or grab-and-go meals, as well as a well-stocked refrigerator with “heat & eat” food choices, have created a society wherein consumers expect instant fulfillment while the smartphone or tablet is always within reach.

### Anthropological Detachment of Women

The looming anthropological question is how gender will affect society. It is safe to say that life in the current modern global economy might be more stressful to women who are working long hours, while being

to prepare homemade meals the way their mothers did.

Single parents who are busy balancing lifestyles with small children might have different priorities, while single persons without children increasingly ignore the three-meals-a-day routine and adapt to an “eat-as-you-please” lifestyle.

### Physical Calorie Expenditure

No one is the same and dietary advice should not apply universally to all individuals. Responses to food, exercise, and medicine differ from person to person, and are largely dependent on the interpretation of the genetics and lifestyle.

Diet, lifestyle, genetics, and work-related calorie-expenditure all play an important role in the obesity puzzle. Over the last 50 years, physically active work has decreased significantly in both affluent and developed countries.

Perhaps the overriding question that needs answering is why most people lack knowledge on the link between nutrition and health benefits, especially considering the popularity of many forms of calorie-saving diets.

### Robotic Labor

As each month passes, economy and society become more automated. In a way, it is a weird paradox that automation and economy result in better overall growth because of efficiency and productivity, while employment in the manufacturing industry is shrinking in industrialized nations. Industrial robotics will ultimately eliminate and substitute workers performing repetitive manual tasks. This is clearly bad news for workers, considering that the bulk of job growth has been in low-skilled areas like food processing and preparation.

Going forward, education will be more technology-driven through online learning, effectively reducing or even eliminating mid-level colleges and universities. With regard to healthcare, robotics will replace much of the frontline diagnostics by medical doctors. In reality, a relative decline in income can already be seen for college-educated people, with most incomes stagnating since 2000. The bottomline is that sustained growth cannot be harmonized with declining middle-class income. To put it differently, a minority of college-degreed and skilled workforce cannot uphold a healthy economy.

Highly developed countries like Germany and Japan are sitting on a ticking demographic time bomb where the aging Baby



responsible for the “traditional” role of caring for their children. These developments will greatly impact their relationship to food, and convenience adjustments in speed of preparation and ease of instant availability will clearly gain importance among busy professional people with no time

In 1960, one out of two people in developed countries had a job that was physically active. Fast forward to 2020 only one in seven jobs can be considered physically active. Subsequently, it can be concluded that the type of work and its environment are partly to blame for the obesity epidemic.

Boomer population begins to drag down economic growth. A possible answer to avoid economic decline is to implement the use of

Eating what we want, when we want, is the new mantra of sub-30-age generation. Traditional eating hours with three square

Although there are many cultural differences in meal composition throughout the world, these are much less compared to snack foods. Snack habits are much more similar among countries than meals.

Singapore approves 'meat' grown from animal cells for use in restaurants



A fillet of lab-grown cultured chicken developed by Eat Just

robots that can replace activities requiring labor. The overriding question in such a scenario is how far robotics will eliminate jobs in outsourced manufacturing in developing countries.

Automation and robotics are here to stay and will make life a lot easier. On the other hand, robots are not consumers and the pressure on spending available income by the middle class will dramatically change the landscape of long-term earning potential. As such, people will have to face new realities knowing that change is happening at a faster speed than they will emotionally and psychologically admit or be able to accept as the new reality.

### Snacking: The New Healthy for Body and Mind

Eating weird is the new normal. Particularly, students do not eat meals but rather snack at very strange hours of the day.

meals a day have increasingly become a thing of the past and may eventually become extinct. Single diners and on-the-go young parents and their kids increasingly view better-for-you snacks as meal replacements.

Increased communication via social media has changed the way people relate to food. For a large part, social media will also replace traditional mother-daughter interactions in cooking skills and planning meals. It is expected that "digital food" will carve out a greater role in planning meals as a (part) replacement for visual and rational decision-making. This can ultimately grow into an emotional connection with digital food that influences actual purchases and enjoyment of eating.

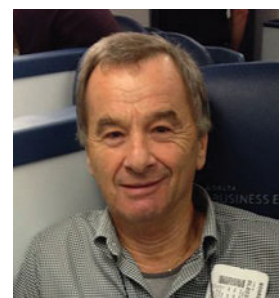
Basic food sales on the center shelves of the grocery are facing stagnant growth with time-impaired consumers turning to snacks instead of home-cooked meals.

### A New Natural Health Definition

Consumers are impressed by the term "free-from" -something they consider healthier than foods without those claims. The same is true for the rapidly growing availability of natural and organic foods. Less processed and close to nature in a setting of natural formulations is the new mantra for people who take food seriously.

Along with all these subtle changes in consumer behavior, it seems that there is much less emphasis on the fat content of foods. As a matter of fact, it is expected that global dietary fat intake will account for about 30 percent of calorie intake by 2030, up from 25 percent in 2015. It is hard to believe, but the "low-fat" craze has lost momentum. Even the animal saturated fat phobia shows signs of weakening. All these subtle changes indicate that a rethinking of nutritional guidelines needs to be put in action.

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Proteins, Advisory, Boards, Author



## SEALED AIR LEADS INDUSTRY WITH FOOD-GRADE FILM MADE USING RECYCLED PLASTIC



Sealed Air has developed the world's first food-grade soft plastic film containing Certified Circular Resins (CCR), as it continues to strive towards creating 100% recyclable or reusable packaging solutions by 2025.

The new CRYOVAC® Brand rBDF™ S10 Film is made using up to 30% food-grade CCR, which is certified by the International Sustainability & Carbon Certification (ISCC). The independent organisation is a global leader in accrediting materials and processes for the circular economy.

Along with its market-leading levels of recycled plastic content, CRYOVAC® Brand rBDF™ S10 Film helps food companies to further improve sustainability through its ultra-thin barrier. At 21 microns, this is a third lighter than widely used HFFS packs and three times thinner than other thermoformable films.

Arnaud Brunet, Fluids and Adjacent Markets Platform Director at Sealed Air, said: "The innovative use of CCR in CRYOVAC® Brand rBDF™ S10 Film perfectly complements the shrink packaging's ultra-thin, high abuse, mechanical resistance and anti-fog performance. Together, these form a packaging system well-aligned with a circular economy that's aiming to lower waste and increase resourcefulness."

The high gloss finish and transparent clarity of CRYOVAC® Brand rBDF™ S10 Film help enhance the appearance of food to drive sales and reduce waste. Leak-proof closures, hermetic sealing and a protective barrier

further minimise waste by safeguarding food integrity and extending shelf-life.

CRYOVAC® Brand rBDF™ S10 Film can be used to wrap foods with or without trays. The overwrap film with modified atmosphere is ideal for fresh red meat, poultry, fish, smoked and processed meat, cheese, convenience food and ready meals.

Arnaud concludes: "CRYOVAC® Brand rBDF™ S10 Film epitomises how Sealed Air is supporting companies throughout food

supply chains to meet the opportunities and demands of a circular economy. We are embracing sustainability from the very beginning of packaging design and development to create solutions that optimise resources and enhance efficiencies."

In 2018, Sealed Air announced a bold sustainability and plastics pledge to design and advance their innovative packaging solutions to be 100% recyclable or reusable packaging solutions by 2025.

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## MULTIVAC IS ONE OF THE “50 SUSTAINABILITY & CLIMATE LEADERS”

One of the features of MULTIVAC as a company is its particularly sustainable and responsible management - and it is now the only supplier of packaging solutions among the “50 Sustainability & Climate Leaders”. The initiative by Bloomberg and the UN is aimed at highlighting groundbreaking contributions by leading companies in achieving ambitious UN climate objectives, and thereby promoting greater commitment in a wide range of markets.

“Together we can still win the race,” says Christian Traumann, Group President of MULTIVAC, expressing his conviction. Thanks to its holistic sustainability strategy, the globally operating Group has been recommended for a worldwide campaign as one of 50 model companies in terms of climate protection and energy efficiency. As part of a series of programs initiated by Bloomberg and the UN, the participating companies will exemplify a range of different approaches covering all aspects of sustainability, as well as demonstrating that entrepreneurial success and ecological commitment go hand in hand. A summit meeting of all Sustainability & Climate Leaders is also planned for the first quarter of 2021 at the UN in New York.

### Sustainability - Relived Every Day in Many Different Facets

For MULTIVAC, sustainability is an integral part of the company strategy. For around 60 years now, MULTIVAC packaging solutions have been making sure,

that sensitive products around the world can be processed



*PaperBoard flat meat MultiFresh with label*

benchmarks in the market are also being set by MULTIVAC's



*PaperBoard form MultiFresh with Label*

efficiently, as well as being packed hygienically, reliably and attractively. Particular attention is always paid to a packaging process, which is both resource-saving and gentle on the product, so that the customer receives the right machine technology, suitable packaging materials and an optimum pack design. Other significant areas of action are the optimisation of the company's internal and logistical processes, as well as the sustainable production of packaging machines with a particularly long lifespan.

MULTIVAC is also a trailblazer and model for the sector, when it comes to sustainable packaging materials - through the development, for example, of alternative packaging material concepts with reduced use of plastics, as well as its comprehensive range of PaperBoard materials. These paper fibre-based materials are not only innovative and functional, but also particularly sustainable. They have found a high level of acceptance with processors, retailers and consumers, and they can be recycled after use in the appropriate recycling loops. New

innovative machine concepts such as the X-line thermoforming packaging machine, as well as by processing solutions from the MULTIVAC subsidiary TVI, which feature trim-free portioning and energy-efficient freezing.

### Far-reaching Commitment

MULTIVAC also proves its commitment to sustainability in a wide range of collaborations and initiatives: MULTIVAC is a founding member of the Save Food Initiative (2010) by the Food and Agriculture Organization of the United Nations, and it is actively engaged in many other sector events and international associations such as the Circular Plastics Alliance and CEFLEX, as well as national organisations like the VDMA industry association and its “BLUECOMPETENCE” initiative. And last but not least, its alliances with partners in the added value chain, as well as its collaboration with universities and research institutes, make a major contribution to rethinking and redesigning packaging materials and pack concepts.



### Ambitious Aims

One of the most important objectives at the moment as regards climate protection and sustainability is the proactive support for customers, so

packaging material consumption by up to 15 percent through the use of improved technology and processes, as well as reducing process-related food wastage by 10 percent by means of innovative

in Africa and South East Asia, by expanding its local presence and extending the range of advice and training for hand-crafted producers and small companies. This is intended to prevent food wastage through the use of suitable processing and packaging solutions.



*PaperBoard Packaging Tomatoe*



*PaperBoard Tray Blueberries*

that by 2025 around 40 percent of all packs can be made from recyclable packaging materials. Running in parallel with this, there is also the aim of reducing

portioning and slicing solutions. MULTIVAC's international roadmap foresees in the medium to long term the structured development of emerging markets, particularly

"As one of the leading players in the market, we have of course set ambitious targets for ourselves. We will therefore be providing widespread information about our projects and innovations, not just as part of the UN campaign but also through a wide range of channels, so that the development of sustainable solutions in the packaging sector continues to be driven forward at high speed," explains Christian Traumann.

[www.multivac.com](http://www.multivac.com)

## THE NEW FS 400 HORIZONTAL FLOW PACK WRAPPING MACHINE, FOR MEAT AND POULTRY PRODUCTS ON TRAYS



*A stretch shrink film packaging system designed to ensure excellently presented leakproof packs.*

### Highly Reliable System and Packs

The FS 400 wrapper uses stretch shrink film which is stretched

around the product during the packaging process by a belt-based film stretching system. The wrapper also removes the air from inside the packaging

before it is sealed, making it unnecessary to perforate the film before shrinking it. Despite being extremely thin, the seals used to seal the packaging lengthwise and

crosswise are extremely strong and reliable, which enables printing on both the top and bottom of the packs (360°).

This results in a tightly packed product, preventing any leakage of liquids and ensuring an outstanding presentation.

## Single Advanced Control for the Whole System

Made from stainless steel, the FS 400 has company's very latest HMI, the UPC 4.0, which comes with a number of advanced



features for interconnected manufacturing which, among other things, also allows you to control the shrink wrapping system, so you have a single control for the whole packaging system.

## Simple Changes and Adjustments

The system is easy and simple to adjust, thanks to the colour graphic interface provided by the 15" HMI, providing an easy, user-friendly way to alter the machine's parameters, enabling quick recipe changes for different formats.

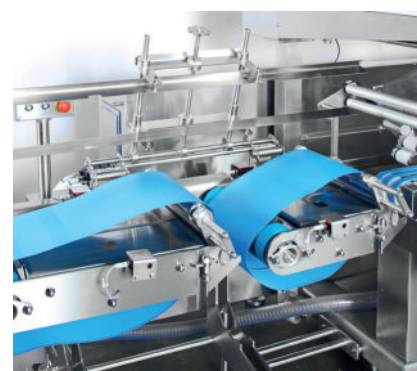
## Designed for Intensive Cleaning Processes

The wrapping machine has a high degree of protection against water and it is designed to meet the non-oxidising requirements and ease of cleaning and sanitisation required in the sector.

## Easy to Operate and Maintain

The wrapper also has useful features designed to improve

the operation of the application and facilitate the work of the operator and maintenance staff: a vertical plate design that reduces maintenance and makes it easier to access the mechanisms, belt-based film stretching, easy-to-load rolls of film, the ability to remove the belts and other components without needing tools, etc



## Lower Operational Cost (TCO)

In short, these features allow you to reduce the installation's TCO (Total Cost of Ownership) and increase the return on your investment by lowering maintenance costs and making it easy to use and sanitise the equipment. [www.ulmapackaging.com/en](http://www.ulmapackaging.com/en)



## NEW MODULAR ORBITAL CLEANER OC200 FROM GEA ENSURES SQUEAKY CLEAN TANK INTERIORS

A modular and efficient solution for the cleaning of hygienic process, storage and fermentation tanks of all sizes has been developed by the system provider GEA. It is used in the food and beverage industry, as well as in the healthcare, chemical, marine, fish farming, bio-ethanol, and wine sectors, and in the paint and coatings industries. After the highly acclaimed premiere at the BrauBeviale 2019 in Nuremberg, the official sales launch of the new modular orbital cleaner OC200 has now begun. It is available immediately.

### How an Orbital Cleaner Works

The OC200 rotates around the horizontal and vertical axis. The OC200 can be equipped with two, three or four nozzles of different length and diameter. The internal profiling of the nozzles creates a high impact jet, which ensures intensive cleaning of the inner surface of the tank or container. The orbital cleaner can be operated at pressures ranging from 4 to 10 bar. It covers a wide range of tank sizes with its variance in terms of the number of nozzles, variable nozzle diameters, lengths and rotation speeds. Thanks to its powerful jets, it can clean tanks with a diameter of up to 36 metres.

### Modularity as a Real Customer Advantage

The modular concept allows easy exchange of components, such as the rotors, nozzle carriers and nozzles, in various standard



Photo: GEA

The new modular cleaner OC200 from GEA

versions while the remaining components do not have to be disassembled. This modularity allows a flexible adaptation to the process and customer requirements regarding cleaning diameter, installation opening, jet dwell time and cleaning intensity, thus allowing optimization of the cleaning process, with a reduced consumption of cleaning media.

With its hygienic design and the use of FDA-compliant materials (FDA: U.S. Food and Drug Administration) the OC200 is suitable for use in the food and pharmaceutical industry.

### Service and Quality

Compared to conventional orbital cleaners, the OC200 offers significant advantages in terms of cleaning

performance, efficiency, quality and durability. In addition, the maintenance intervals are significantly longer compared to other orbital cleaners, which in turn ensures longer plant availability. The relatively small number of components within the cleaner, as well as the availability of standard service kits through the extensive GEA network, enable fast and cost-effective service and thus smooth operation.

### The Customer Saves Cleaning Costs

The GEA Orbital Cleaner OC200 saves both time and valuable resources (chemicals, water, personnel costs) by optimally adapting the cleaner to the process conditions, as well as extended maintenance intervals. The total costs of operating the cleaner ("Total Costs of Ownership"), i.e. acquisition costs, energy consumption, maintenance and repairs, are very low compared to other orbital cleaners.

### Powerful and Flexible Cleaner

The OC200 also offers further advantages when changing parameters in the existing cleaning process. Due to the exchangeability of components it can be easily adapted to the new requirements. Customers know what they get from the new OC200: optimized cleaning performance that helps protect their end product and brand name by preventing contamination and increasing process reliability.

[www.gea.com](http://www.gea.com)



Photo: GEA

The new modular cleaner OC200 from GEA.

## RECYCLABLE PACKAGING FOR FENERBERG'S MINCED MEAT BY SCHUR FLEXIBLES:

### New Concept Saves Additional 36 Tons of Plastic per Year

Feneberg Lebensmittel GmbH, a successful retail chain from Southern Germany, demonstrates in an impressive manner the opportunities that arise from questioning existing concepts and breaking new ground. This family business, based in the Allgäu region of Germany, now uses an innovative packaging solution by Schur Flexibles for its self-service minced meat products by the Feneberg in-house butcher's: the recyclable and sustainable flow-wrap MonoFlow(re) film. The results have been impressive: By switching from tray to flow wrap, the two companies have managed to save 70% of plastic.



*The family business, based in the Allgäu, Germany, uses an innovative packaging solution from Schur Flexibles for its self-service minced meat products from the Feneberg Butcher range: the recyclable and sustainable flow-wrap MonoFlow (re) film.*

#### Rethink Initiative Leads to Award-Winning Flow-Wrap Alternative

The MonoFlow(re) PXC, classified as having "excellent recyclability", is just one of the successful products developed as part of the Schur Flexibles rethink initiative. In collaboration with its customers, the packaging

manufacturer rethinks existing solutions and replaces them with sustainable, holistic packaging concepts. The MonoFlow(re) PXC is a highly transparent, fully recyclable high barrier PP flow-wrap film. It is ideal for sensitive products such as fresh meat but also suitable for cheese or fresh pasta. By switching from conventional tray or thermoformed

packaging to MonoFlow(re), manufacturers can save up to 70% of plastic. The final packaging is characterised by lower weight and less use of plastic. This optimises energy consumption and space requirements during manufacture, storage and transport. The packaging also provides unrestricted performance: oxygen and water vapour barriers of different levels are possible, and with its wide sealing range, it can be processed efficiently and reliably on existing flow-wrap packaging lines. A masterly finish - using flexo, gravure or digital printing - ensures an eye-catching presentation at the point of sale.

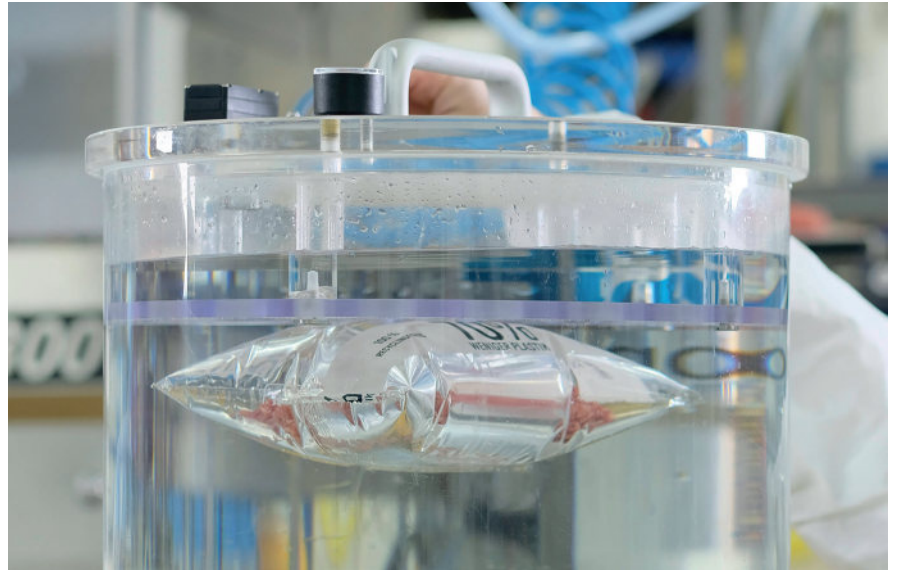
This comprehensive concept also convinced the jury of the German Packaging Award 2020. MonoFlow(re) PXC won the much coveted award in the sustainability category.





## Resource-Saving Solution for Sustainable Food

As an established retailer, Feneberg has always championed regionally produced food of the highest quality. The meat processed at the Feneberg butcher's is sourced from farmers under contract in the region. The in-house organic brand 'VonHier' guarantees the production, processing and sale of food within a 100-kilometer radius of the company's headquarters in Kempten. The obvious conclusion is to also use packaging that conserves resources. Less plastic and better recyclability were prerequisites, and at least the same level of quality in terms of protection, freshness, best before date and transportability. "A product as sensitive as fresh minced meat places high demands on the packaging. It goes without saying that this requires specialised, flexible packaging that does not compromise in terms of product protection," says Max Wolfmaier, Sustainability Manager at Schur Flexibles, commenting on the high level of performance achieved by the film. The fact that all requirements across the board were fulfilled was not only due to the rethink initiative, but also a result of



the close cooperation between client Feneberg, packaging manufacturer Schur Flexibles and machine supplier Ulma Packaging.

### Reducing 100 to 7 - Huge Savings in Logistics

With a decision in favour of MonoFlow(re) PXC, Feneberg's packaging now also greatly contributes to resource savings. The new solution has allowed for a 70% reduction in the amount of plastic used. This has consequently led to a significant reduction in transport volume for packaging material by reducing the delivery from several pallets of trays

down to only a few rolls of film instead. Christian Gareiß, Head of Production Technology at Feneberg, explains: "By converting our minced meat packaging to a flow-wrap, we bring 35,700 kg less plastic into the market each year. This plastic no longer needs to be produced or transported as raw materials and as finished goods nor recycled by the consumer. In the past, a maximum of around 5,000 sales units were made with one pallet of packaging material. With our flow-wrap packaging we can produce up to 81,000 sales units with one single pallet. This means that if in the past 100 trucks have been needed to deliver the packaging material "tray", today only a maximum of 7 trucks are on the road to deliver the film material that will then produce the same number of sales units."

The new packaging concept combines the required high levels of product protection and machinability with greater sustainability. It has already been well received by Feneberg consumers. Therefore, the next step will be to offer all other self-service meat products in this innovative packaging.

[www.schurflexibles.com](http://www.schurflexibles.com)





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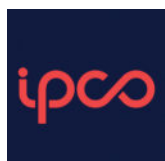
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### EDITORIAL CALENDAR 2021

1

#### FEBRUARY

Ordering Deadline: 10 February, 2021  
Publication Date: 21 February, 2021

- Meat Gaining, Slaughtering, Cutting
- Skinning, Deboning & Trimming, Portioning, Gringing, Separating, Sorting (Meat & Poultry Focus)
- Energy Efficient Packaging Equipment Trends

2

#### APRIL

Ordering Deadline: 10 April, 2021  
Publication Date: 23 April, 2021

- Mincing, Blending, Mixing, Filling, Forming Technology
- Fish Processing Focus
- Conveyors and Belting
- Employee Sanitation Practices
- Skin and Whole Muscle Packaging Trends

3

#### JUNE

Ordering Deadline: 14 June, 2021  
Publication Date: 23 June, 2021

- Sausage, Bacon and Ham Production
- Casing, Netting, Clipping, Labelling
- BBQ Trends, Clean Label, Marinades, Sodium Reduction
- Packaging for Meat Snacks

4

#### SEPTEMBER

Ordering Deadline: 13 September, 2021  
Publication Date: 24 September, 2021

- Dicing, Stop-Cutting, Slicing
- Smoking, Cooking, Coating, Frying, Air-Conditioning & Ripening Technology
- Weighing, IT Solutions, Process Control, Automation & Robotics
- Sustainable Packaging Trends

5

#### OCTOBER

Ordering Deadline: 11 October, 2021  
Publication Date: 22 October, 2021

- High-Speed Cut-up Lines
- Thermal Processing, HPP
- Chilling & Freezing Equipment, Ice Machines, IQF Products
- Shelf-Life Extension of Packed Meat, Poultry and Seafood

6

#### DECEMBER

Ordering Deadline: 6 December, 2021  
Publication Date: 17 December, 2021

#### IPPE 2022 PREVIEW

- Extracting, Processing and Packaging of Poultry Meat
- Vacuum Pumps
- Food Safety, Hygiene, Disinfection, Ventilation, Clean Room Technology
- International Flavour Trends
- Production and Packaging of Convenience Food

Interpack	Dusseldorf, Germany	25 Feb - 3 Mar, 2021
Meatex Canada	Toronto, Canada	4 Feb - 6 Feb, 2020
Gulfood	Dubai, UAE	21 Feb - 25 Feb, 2020
Seafood Expo North America	Boston, USA	14 Mar - 16 Mar, 2021
Food Expo Greece	Athens, Greece	6 Mar - 8 Mar, 2021
IFE	London, UK	22 Mar - 24 Mar, 2021
Anuga Foodtec	Cologne, Germany	23 Mar - 26 Mar, 2021
Seafood Expo Global	Barcelona, Spain	27 Apr - 29 Apr, 2021
Meat-Tech	Rho, Italy	4 May - 7 May, 2021
Cibus 2021	Parma, Italy	4 May - 7 May, 2021
Alimentaria	Barcelona, Spain	17 May - 20 May, 2021
Sial China	Shanghai, China	18 May - 20 May, 2021
Meat & Poultry Industry Russia	Moscow, Russia	25 May - 27 May, 2021
VIV Turkey	Istanbul, Turkey	10 Jun - 12 Jun, 2021
VIV Qingdao 2021	Shandong, China	15 Sep - 17 Sep, 2021
VIV Asia 2021	Bangkok, Thailand	22 Sep - 24 Sep, 2021
PPMA	Birmingham, UK	28 Sep - 30 Sep, 2021
Cfia Rennes	France	Sep, 2021
Polagra-Tech	Poznan, Poland	Sep, 2021
Agroprodmas	Moscow, Russia	4 Oct - 6 Oct, 2021
Anuga Meat	Cologne, Germany	9 Oct - 13 Oct, 2021
Process Expo	Chicago, USA	12 Oct - 15 Oct, 2021
Foodtech	Athens, Greece	13 Oct - 15 Oct, 2021
Alimentaria Foodtech	Barcelona, Spain	19 Oct - 22 Oct, 2021
VIV Mea	Abu Dhabi, U.A.E	7 Nov - 9 Nov, 2021
JFEX Meat & Dairy	Osaka, Japan	17 Nov - 19 Nov, 2021

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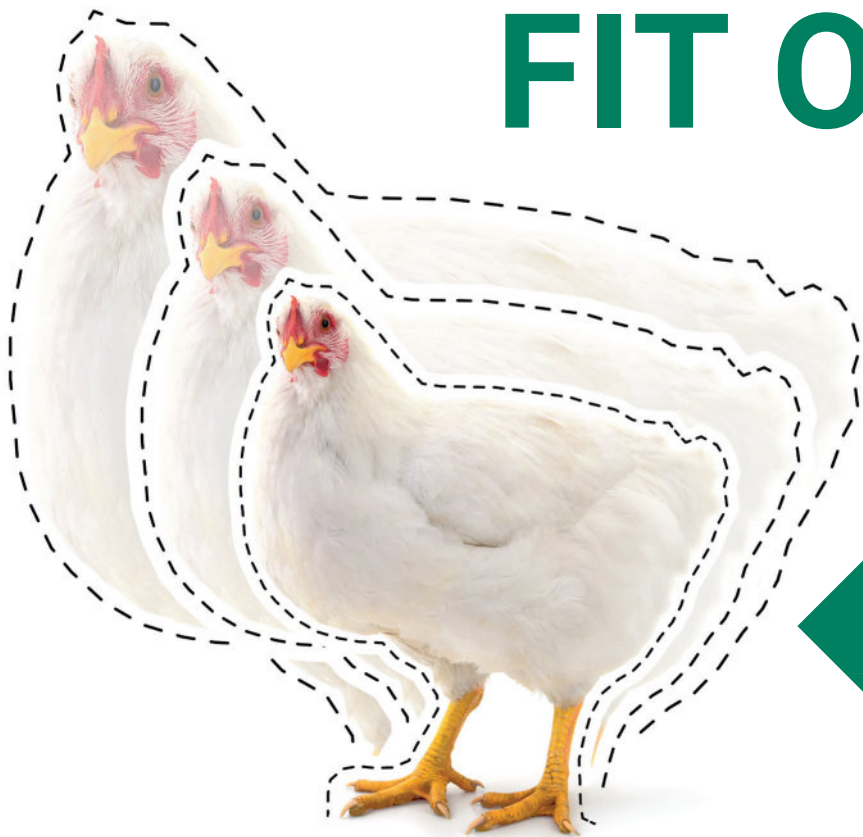
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