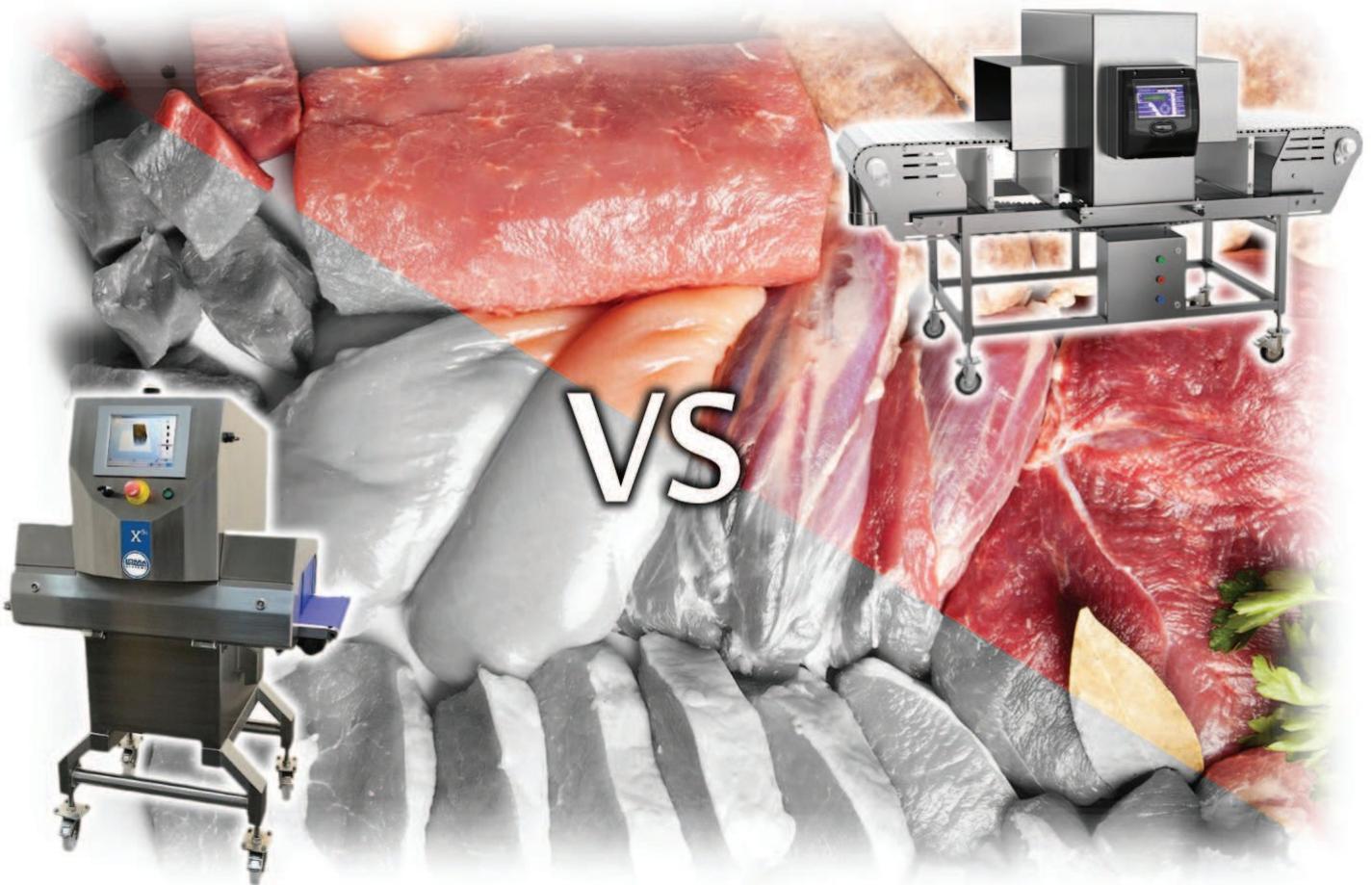


MEATING POINT

magazine

SUSTAINABLE TECHNOLOGY, PROCESSING & PACKAGING



IMPROVING FOOD SAFETY INSPECTION OF BULK PRODUCTS

INSPECTION KIT THAT TICKS THE SUSTAINABLE BOX

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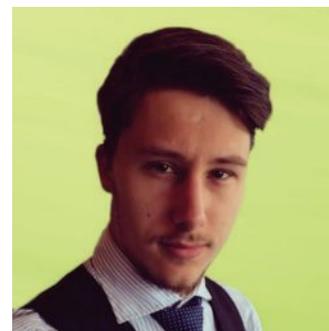
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Welcome 2016! Long may it be fruitful and successful year to you!

In this 6th issue of Meating Point Magazine, we take in-depth look at the latest X-ray and metal detection trends, as consumer safety has always been one of the main concerns for food processors. More than ever they are relying on the latest quality control systems to ensure their products are safe and minimise the risk of reputation-damaging recalls.



Tristan Bogaard

The cover story - "*Improving Food Safety Inspection of Bulk Products*," focuses on bulk food application and discusses why manufacturers submit bulk foods to product inspection. The article discusses metal detection and X-ray inspection and explains how both technologies work, then summarises the pros and cons of both inspection systems considering their differing capabilities.

Next, using our global food and meat trend-spotting expertise and understanding the value of trying to be one step ahead in the meat industry, we gather the most useful, innovative and insightful information, continuing to publish the best examples of meat processing and packaging plant innovations, as well as some case-studies.

Along with featuring some latest industry news and trends, we explore the challenges of feeding the global population of nine billion projected by 2050. Thus, we raise questions such as: How can energy and water would be used efficiently? How can companies implement more sustainable processing and packaging practices?

Finally, we have a review of some upcoming events, which are always a great opportunity for many to compare notes on the state of the industry, discuss how processing companies are faring, learn about new technologies and exchange ideas on manufacturing practices and innovations. The tri-annual IFFA - The No. 1 for the meat industry is definitely the most expected exhibition in 2016 with some 960 exhibitors from around 50 countries, including all market leaders, which will present their innovations. Among the top themes are: product optimisation through energy efficiency, high output, straight forward cleaning processes, greater automation and sustainability.

It would be a great opportunity and pleasure to meet up many of you there!

Enjoy your read!

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INSPECTION KIT THAT TICKS THE SUSTAINABLE BOX

BY SARAH KETCHIN, MANAGING DIRECTOR, FORTRESS TECHNOLOGY

There's no getting away from the fact that food manufacturers have a lot on their plate right now, including how to balance being more cost efficient, productive and competitive with investing in more sustainable line equipment. Given that we live in a throwaway society, the big question is how can a manufacturer of metal detectors assist food producers to be more sustainable with their equipment purchasing decisions?

As proverbs go, 'Waste Not Want Not' is one that resonates highly at Fortress Technology and this filters across our entire metal inspection range.

One of the underpinning themes of the Save Food initiative is giving manufacturers access to more sustainable production systems and methods. That's where we can help. With 90% of Fortress metal detectors sold to UK food factories, extending the lifespan of equipment and optimising ROI for our growing customer base is where we focus a large amount of our R&D efforts. In turn it means we can assist food factories to be leaner and act greener.

Making sustainable equipment purchasing decisions

Arguably, food waste is where the real sustainability agenda lies. It was good to see the recent report from the Environment Agency praising

our food and drink sector for being more resource efficient and cutting down the amount of waste. False product rejects as a result of false metal detection readings can amount to £14,000 annually per production line. This is partly down to the way the magnetic field reacts to the product characteristics, especially in wet products, so the sensitivity of the detector head plays a big part. But I agree with Lord Smith that we must continue to strive for more improvements.



Food waste is where the real sustainability agenda lies and wet products, such as meat, can result in costly false product rejects

Fortress recognises that for many manufacturers it can be challenging to demonstrate and quantify sustainability. Even the word itself means different things to different generations, from environmentally friendly to organic, or ethical or transparency. Another challenge is the split about what constitutes sustainability between consumers and industry. This is in part due to the fact there are so many aspects to the agenda - from acting more eco-friendly by reducing energy consumption and your carbon

footprint, to tackling the volume of food that ends up in landfill.

Many larger EU businesses today are finding themselves under pressure from investors to provide hard evidence of sustainable actions. It means you can't just claim to be sustainable; you have to prove and rubber stamp it.

Not backward in coming forward

A backward compatible offering might sound a bit retro. However, every one of our customers tells us that the ability to upgrade equipment with the very latest technology so it is 'fit for purpose' for years to come helps them to achieve their sustainability goals and save them significant money in one swoop.



The ability to upgrade equipment with the very latest technology so it is 'fit for purpose' for years to come helps manufacturers achieve their sustainability goals

It was a real swing factor for Nutrition Group which ordered six Stealth metal detectors. For a new customer Fortress regards this as a sizeable order and a real vote of confidence for our sustainability proposition.

Tim Edwards, Facilities Manager at Nutrition Group agrees: *"The problem with a lot of equipment is that it can quickly become outdated, but Fortress says that it will guarantee to support its metal detectors, even if I call them up needing a part in 10 years' time. That's a big commitment."*

Realistically, with the right maintenance, a well-built metal detector can run for 20+ years. Machinery innovation isn't going to slow-up. There's always going to be faster, more efficient and cutting edge technological solutions coming to market. But that doesn't mean you need to prematurely bin your perfectly functional kit because it doesn't comply with the latest retail inspection standards or regulations. A metal detector is big hunk of equipment, most with coils embedded in epoxy or even concrete, making it harder to reclaim and recycle components when it enters the waste stream.

Legacy systems have a reputation for being expensive to maintain. But there are viable alternatives. Much of this will be directed by your supplier, their R&D capabilities and experience, and willingness to look beyond the order list to invest in upgrades.

A good example of this is when M&S revised its Codes of Practice in 2012. Within weeks Fortress issued the required software and safety feature upgrades, costing approximately 70% less than acquiring a brand new metal detector system. Also, I don't know many suppliers willing to bolt their technology onto another's. But it's how the sector is evolving. Up to 15% of global equipment sold by our company is integrated into non-Fortress units. Customers value it because it optimises their ROI.

There's much to be said, from many environmental vantage points, about postponing replacement purchases of anything, not just metal detectors. If we can do our bit to keep what's already made out of the waste stream and delay the additional environmental costs of making something new, in my view that's responsible waste stewardship and a big tick for every manufacturer who is striving to achieve their sustainability goals. ■

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X-RAY INSPECTION FOR ULTIMATE PROTECTION

BY TONY BRYANT

Ever changing retail packaging formats often utilising metallised film or foil, high profile product recalls and increasingly stringent standards from industry associations such as BRC (British Retail Consortium) to combat food safety hazards, has resulted in a drive towards X-ray inspection technology. Boasting a low lifetime cost of ownership combined with significant performance benefits and flexibility, food manufacturers and packers are choosing X-ray equipment for truly effective Critical Control Point (CCP) detection to ensure products are completely free of any contamination and provide ultimate brand protection for retailers.



A one-stop-shop for inspection equipment, Loma offers metal detectors, checkweighers and X-ray units, all built according to its 'Designed to Survive' ethos. However, with the latest *BRC

Tony Bryant Sales Director at Loma Systems highlights the importance of x-ray inspection equipment for truly effective critical control point detection and to ensure food manufacturers, processors and packers meet the requirements of the latest BRC Global Standard for Food Safety Issue 7 and retailers' Codes of Practice

Global Standard for Food Safety Issue 7, which came into effect on 1 July 2015, and some retailers' Codes of Practice recommending the use of X-ray equipment, the contaminant inspection equipment the company recommends will invariably relate to what manufacturers and packers might expect from an external retailer audit.

There are certain food applications where only X-ray inspection technology will give the required contaminant detection levels. Manufacturers of foil packaged ready meals, for example, must have a Critical Control Point (CCP) inspection system positioned at the end of each production line. Using a ferrous-in-foil metal detector will provide limited protection as it is only able to identify ferrous metals to levels of between 2 - 5mm. Most equipment used in a food plant is produced from stainless steel and some non-ferrous metals but these will not be detected when using a ferrous only detector. This leaves a worrying and potentially damaging gap in HACCP procedures.

Using X-ray inspection

systems to inspect foil trays (and plastic containers if used on the same line) will significantly strengthen CCP, ensuring optimum quality control and food safety. An X-ray machine will typically find ferrous, non-ferrous and stainless steel contaminants at levels between 1 - 2.5mm. No metal detector in the world could offer anything close to this and given that 98% of a food factory is stainless steel, an X-ray system is very important for due diligence.

Metal detectors are still used by the majority of food processors across the world but there are definitely advantages in choosing X-ray machinery for certain applications, such as more reliable and accurate detection of metals and foreign



bodies like bone, glass, rubber and stone.

Loma offers a range of X-ray inspection systems including the latest generation X5 Spacesaver, which offers 25% improved detection performance, smaller footprint than similar machines and ultra-hygienic design for easy cleaning and low maintenance and serviceability.

Responding to the growing demand for a more cost effective yet highly functional X-ray system, Loma recently launched the revolutionary X5c (Compact) model. This affordable new system reduces the cost of ownership of X-ray inspection technology by an industry-beating 30% and is aimed at food manufacturers running multi-product, retail ready lines keen to make the switch to X-ray technology for the first time.

In line with CFR21 part 11 traceability, Loma's new X5c is multilevel password protected for improved data management so events can be logged against individual operators. Produced from brushed stainless steel, it also offers an ultra-hygienic design for easy cleaning and low maintenance and serviceability. A quick release belt can be completely removed without the need for tools or the belt tension can be eased for cleaning. The X5c also has sloping surfaces to stop food particles and washdown droplets accumulating in crevices and to reduce drying time.

Loma's X5c operates at line speeds up to 50 metres per minute and measures



just one metre in length. It is capable of handling products up to 100mm (height) x and 300mm (width) but weighing no more than 3kg - making it ideal for the inspection of ready meal lines in particular.

With significant energy saving benefits and providing the best balance of processing power to inspection, the X5c incorporates a detector array with 0.8mm diode pitch offering a low power and self-contained high efficiency X-ray generator. A simple, effective cooling mechanism ensures long tank life.

Loma's X5c features an easy to use eight inch intuitive touch screen. The X5c PC has been migrated to a Windows Embedded Standard

operating system ensuring continued support from Microsoft. It has a high speed USB port and simple Ethernet connection for easy outputting of reports.

In terms of cost, the X5c compares favourably with other types of inspection equipment. Although it is a streamlined unit, the X5c has been designed using industry-proven subcomponents which have been optimised to give maximum performance. It really does offer excellent value for money and will give smaller food companies the peace of mind that they have quality control procedures in place that meet the requirements of major retailers. ■

www.loma.com



DIET AND SOCIAL STRESS FACTORS THE MAJOR CULPRITS IN GIRLS EARLY PUBERTY

BY HENK HOOGENKAMP

Early puberty in girls under 10 is the new normal. There is a fast growing percentage of girls with beginning breast development at the age of 7 and even some girls as young as 6. Parents and doctors are alarmed, especially since at such a young age, girls don't seem to feel comfortable about their changing bodies.

Many young girls are starting puberty before they are emotionally ready for the change. Around the 1900s, in the US the average menarche –when a girl gets her first period– was about 14. After the World War 2 the age of puberty was typically at 11-12 years. Especially since the 1980s has the age of puberty fallen and for increasing number of girls is now gradually declined to 7-8. Ever since the turn of the century many environmental, societal and dietary changes are occurring and by the age of 7 girls are starting to develop breasts and the onset of menstruation.

Divided by race at age 7, about 24% of black girls, 15% of Hispanic girls, 10% of white girls, and 2% of Asian girls are starting puberty. It is clear that puberty is a complex biological process and more than one variable comes into play. Too early puberty can lead to lower self-esteem, eating disorders, early sexual activity, more

sexual transmitted diseases, and substance abuse.

Early puberty is also considered a risk factor for a number of degenerative diseases later in life, including an earlier onset of menopause, shorter lifespan, hormone-related (breast) cancers, metabolic syndrome, early fertility decline and cardiovascular disease.

Puberty in girls typically involves three major changes: the growth of breasts, the growth of pubic hair and the onset of menstruation. These changes are usually in that order over a period of two years.

For parents it is important to focus on their daughters' emotional and physical health, rather than on slowing or stopping development. Often psychosocial problems of early puberty in girls arise from how parents and family members react.

There are quite a few reasons that may explain early onset of puberty. Early puberty phenomenon can be influenced by diet, obesity, chemical exposure, family stress, and hormonal. There is little doubt that overweight or obese girls are more susceptible because their body secretes estrogen –a hormone released from the ovaries during puberty and influences breast

development. The excess fat stored in the girl's body holds extra deposits of estrogen, which –subsequently– develops breasts at a very young age.

Exposure to endocrine-disrupting chemicals can also play an important role in early puberty. These chemicals are known that they can mimic hormones, including estrogen. Not only are these chemicals influencing onset of puberty, but also may disrupt reproductive organs and fertility. There are several hundreds of chemicals that people are exposed to on a daily basis and possibly a combination of multiple exposures over a prolonged time can inflict damage. For example, estrogen-mimics such as BPAs (estrogen steroid Bisphenol A). But not just chemicals, also natural feminine hygiene products such as tea tree oil and lavender are reported to have estrogen-ability in the body.

Then there are variables that the girl's mother can somehow influence. Breast-feeding and a healthy body weight before, during and after pregnancy will delay the start of a girl's menstruation cycle.

Since World War 2, the body weight of girls has slowly increased and especially the Millennium Generation –born between 1980 and 2004– has accelerated enormously. Sugar

loaded beverages contribute to significant weight gain. The January 27 2015 report by the Harvard School of Public Health, published in Human Reproduction Journal, indicated that girls who drank more sodas were also more likely to reach puberty early, independent of whether they were overweight or not.

Family structure and bonding with parents' is another variable that influences onset of puberty. Emotional bonding and stress-reduction at home can delay early maturation of girls. Even more shocking is the fact that a girl growing up without her biological father is twice as likely to get her period before age 12, compared with a girl living with her biological father.

As far as diet is concerned, good role modeling is important and key in improving the make-up and quality of

the daily diet, including healthy school lunch programs. This in fact means drastically reducing or elimination sugary-loaded drinks and sodas, and candy while also taking a cautious approach to chemicals in food and the environment at home.

Sugary drinks with added sugar have a higher glycemic index than naturally sweetened drinks such as fruit juices and iced tea. High glycemic foods can cause a rapid increase in insulin concentrations in the girl's body, which can cause higher concentrations of sex hormones subsequently to earlier onset of periods.

The verdict is still out when it comes to the presence of soy in the diet as to explain early puberty. There are conflicting reports that soy-based foods accelerate puberty but it is fair to say that consuming

plant protein enriched diets may delay puberty. Contrary to popular belief, human evidence indicates that soy phytoestrogens are actually beneficial to health and negligible in terms of negatively affecting hormonal balances. That is to say, as long as it concerns a diet in which soy is consumed in moderation. After this point, possible IGF-1 levels (Insulin-like Growth Factor) may affect early onset of puberty in girls and might be associated with tumor growth as well.

About the Author:

Henk W. Hoogenkamp is Member of the Executive Board of a NASDAQ listed protein company, a publicist and protein application specialist. He has previously been President of DMV Campina USA/Friesland Campina/ and Senior Director Protein Strategy DuPont Solae. ■

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IMPROVING FOOD SAFETY INSPECTION OF BULK PRODUCTS

Consumer safety has always been the overriding concern for food processors. However, recent well-publicised product recalls over contaminated food have turned the intensity up even higher. Processors are relying more than ever before on the latest quality control systems to ensure their products are safe and minimise the risk of reputation-damaging recalls.

This white paper focuses on bulk food applications and discusses why manufacturers submit bulk foods to product inspection. Next the paper introduces metal detection and x-ray inspection and explains how both technologies work and their differing capabilities.

After exploring factors that affect the sensitivity of product inspection systems on bulk food lines, the white paper summarises the pros and cons of metal detection and x-ray inspection.

1. Typical Applications of Bulk Product Inspection

A wide range of bulk foods can pass through product inspection systems. Specific examples of metal detection and x-ray bulk inspection applications include: dried fruit and nuts, cereals and grains, vegetables, frozen seafood, processed meat, confectionery, and dry pet food.

2. Why Submit Bulk Foods to Product Inspection?

Food contamination usually comes

from one of four sources: raw materials, personal effects (including employee sabotage), maintenance or in-plant processing.

Product inspection systems can help to protect the welfare of consumers, uphold brand reputation, reduce the risk of costly product recalls and help manufacturers with regulatory compliance by catching physical contaminants before products leave the factory and end up on supermarket shelves.



Typical Contaminants

2.1 Risk Management and Regulatory Compliance

Food manufacturers have an obligation to comply with industry legislation and regulations. Standards within the Global Food Safety

Initiative (GFSI) make the need for effective product inspection processes in the food industry very clear, where a risk of contamination is identified.

Incorporating either a metal detection and/or x-ray inspection system into a company-wide product-safety programme can help manufacturers adhere to a diligent Hazard Analysis and Critical Control Points (HACCP) programme, as well as achieve compliance with GFSI-recognised standards such as The British Retail Consortium (BRC) and International Featured Standard (IFS).

Product inspection systems can also help manufacturers comply with national food safety regulations. Furthermore, a growing number of major retailers are setting their own codes of practice which contain specific advice regarding product inspection equipment. Metal detection and x-ray inspection systems can help food manufacturers meet these quality standards, thus ensuring product integrity and maintaining brand security.

2.2 Establishing Critical Control Points for a Product Inspection System on a Bulk Food Line

Product inspection systems for bulk foods can be used at different stages on a production line depending on the identified Critical Control Points (CCPs).

Systems can be installed at the beginning of the production line, where the raw materials arrive, at an intermediate stage, or at the end of the line before products are dispatched. Product safety and quality may be enhanced by installing inspection systems for use at more than one CCP.

When determining CCPs, consideration should be given to identifying and rejecting the

contamination as early as possible within the manufacturing process.

Once the CCPs on a production line are identified, other factors such as practicality and cost-effectiveness need to be taken into account to select the ideal location for a product inspection system.

2.3 Benefits of Inspecting Bulk Foods In-line

Bulk-flow product inspection systems typically inspect loose product before it is packaged or added as an ingredient to a finished product. However, in some cases, for example large sacks of dry powders, inspection may take place at the end of the production process to minimise the risk of further contamination.

The benefits of inspecting bulk foods before final processing and packaging are numerous.

Contaminants will often be at their largest and most easily detectable at the beginning of the production line. Catching them early may allow manufacturers to recover product and feed it back into the line before further value is added to products, monitor suppliers' quality control and also help to save time and money by preventing damage to downstream processing equipment, caused by larger contaminants.

When using x-ray inspection technology, contamination detection levels are typically better in the early stages of the production process where unprocessed bulk product can be presented in a shallower depth and with a more uniform (homogeneous) texture than in final sealed packs.

In contrast, depth of product does not affect metal detection sensitivity. In fact, sensitivity may even be greater when inspecting small packs, compared to loose product. Despite

this, metal detectors are ideal for inspecting loose, free-falling product and sensitivity to all metals is very high, even under conditions with very high throughputs.

3. Introduction to Metal Detection and X-ray Inspection

Metal detection and x-ray inspection equipment have traditionally been the first line of defence to identify physical contaminants in food products before they leave the processing plant.

Metal detectors are widely used to detect ferrous, non-ferrous and stainless steel in a variety of different products, including loose, unpackaged products, pumped products such as liquids, slurries and pastes, bulk powders or free-flowing solids under gravity-fall conditions, as well as packaged products.

X-ray systems are capable of detecting metal, as well as non-metallic contaminants such as glass, mineral stone, calcified bone, high-density plastics and rubber compounds, in packaged, loose bulk and pumped products.

3.1 Bulk-flow Metal Detection Systems

Two different types of metal detection systems exist to inspect bulk products for metal contamination. Conveyorised metal detectors are used to inspect loose products prior to packaging or large bulk products either pre- or post-packaging in the case of large bags, boxes or sacks of product.

In contrast, gravity-fall metal detectors are used to eliminate metal contaminants in bulk free-falling products and granular products with larger or irregular-shaped particulates prior to packaging. Systems of this type are not suitable where product backs up in the throughput pipe and moves slowly.

Both types of metal detector are capable of detecting and removing all metal types, including ferrous, non-ferrous, and even difficult to detect non-magnetic stainless steels from processing and packing lines. Such detectors also provide high performance when challenged with the detection of non-spherical contaminants such as wire, swarf and slithers of metal.

3.1.1 Conveyorised Metal Detection Systems

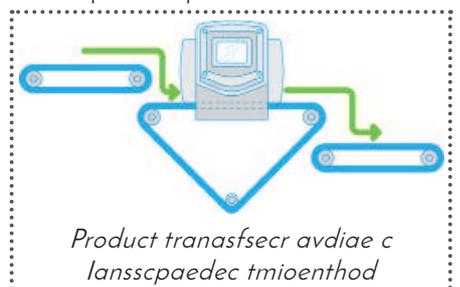
Conveyorised metal detection systems can be configured to inspect any individual or mix of products from large 25 or 50 kilogram sacks of dry powders such as flour, through to products with large product signals such as cheese blocks and bulk meat packs.

3.1.2 Belt Types

Suitable materials must be used to prevent the build-up of static charges or a decrease in the metal detector's sensitivity, and the design must also be appropriate for the product/s being inspected. Endless double pass belts may also offer considerable advantages for certain applications, but are not suitable for wet or sticky product.

3.1.3 Product Transfer

Packaged products should be conveyed through the metal detector in a consistent orientation, centred relative to the detector aperture. The ideal minimum spacing is the length of the product pack.



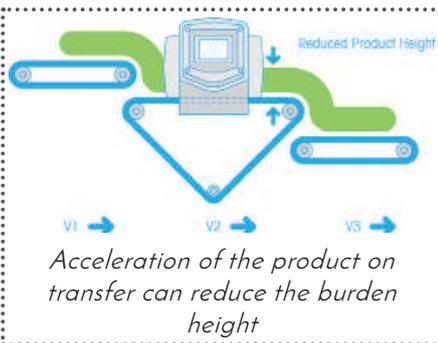
Product transfer via the conveyorised metal detector

Sticky products such as raw dough or meat, and bulk loose product such as peanuts can be transferred by cascade.

3.1.4 Transfer Speed

To allow easier identification of contaminated items, it is often useful to accelerate the product through the detector to create an increase in product spacing.

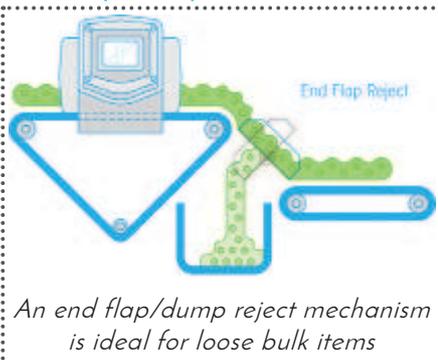
When inspecting bulk and loose product, the burden height can be reduced by accelerating the product on transfer. This has the advantage of minimising the volume of rejected product and permits the use of a lower detector aperture, resulting in higher sensitivity.



3.1.5 Automatic Reject Systems

A number of different types of reject systems exist. The most appropriate choice will depend on a number of factors and the advice of the detector manufacturer should always be sought.

End Flap/Dump

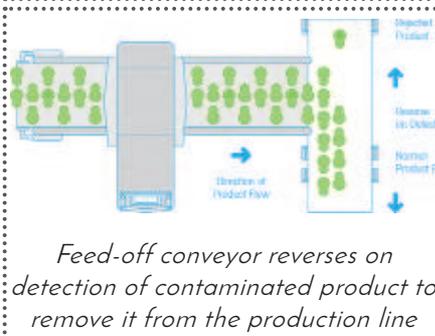
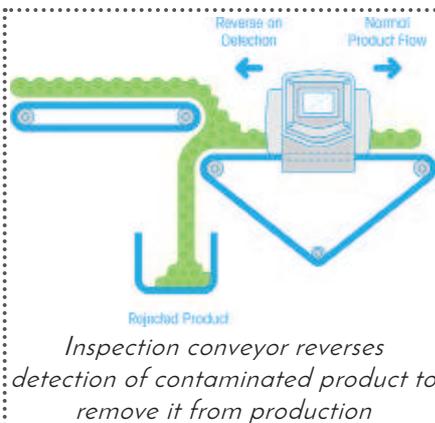


This type of system necessitates a drop in production line height which can be overcome by an incline on the conveyor.

The point of pivot can be varied according to the application. This type of reject is suited to loose bulk items (dry or sticky) running on a wide flat or dished inclined conveyor belt.

Reverse Belt

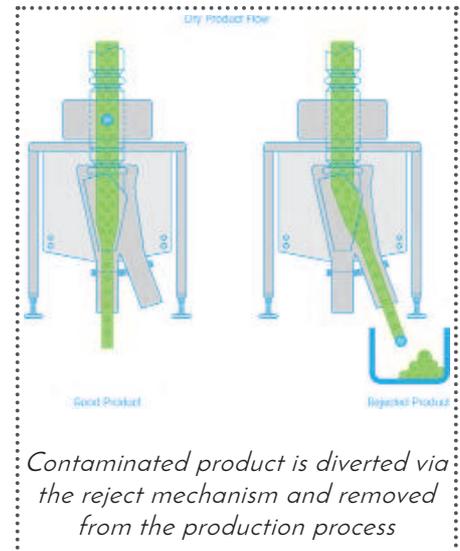
Two types of reverse belt are available.



On detection of metal, either the inspection conveyor is reversed for a short time to dump contaminated product into a reject container. This type of reject is ideal for bulk loose, dry or sticky product.

3.1.6 Gravity-fall Metal Detectors

Gravity-fall metal detectors are specifically designed to inspect free-falling fine, dusty powders, as well as granular product with large particulates.



With gravity-fall metal detectors, very high sensitivity levels to all metals can be achieved with throughout speeds of up to 37,000 kilograms per hour, depending on the product being inspected, the physical installation of the unit and final specification of the model chosen.

The detector and auto reject should be mounted on a rigid framework with sufficient space between them to ensure that metal contamination is always rejected.

The system should have a fixed speed of response, independent of frequency of operation, and be capable of moving to the reject position more quickly than the time it takes for a metal particle to fall from the detector to the reject device.

Frequently, the overall system height is a limitation to the use of gravity-fall systems, particularly where little headroom exists. However, systems are available utilising special technology which enables them to be installed close to other metal structures without compromising sensitivity performance.

Such technology, combined with a compact, innovative reject device design, means that these systems offer the best overall spacesaving

solutions for situations where height is restricted.

If there is potential for product leakage through the reject position, a 'sealed' reject type is recommended, particularly in the case of fine powders that have a risk of explosion, where full compliance with ATEX EXII Cat 2D T79 C is essential.

3.2 Bulk-Flow X-ray Machines

Product presentation is very important with bulk-flow systems; this can be via an up-stream conveyor, hopper or vibratory conveyor feed. To guarantee consistent detection performance, it is desirable to have a consistent product depth passing through the x-ray system.

A homogeneous layer of product can be achieved using a troughed belt and an adjustable levelling plate. The product type will determine the optimal product depth.

High volume throughputs of up to 14,000 kilograms per hour can be achieved (depending on product density and layer thickness), meaning bulk systems can run at customers' existing line speeds, maintaining high production levels.

3.2.1 Belt Types

A troughed belt is recommended when inspecting bulk products and a number of factors must be considered when choosing a suitable belt material. In bulk-flow applications where loose, free-flowing unpackaged product is in direct contact with the belt and/or side-skirted guides, the transport handling materials used must comply with FDA regulations and EU Directives.

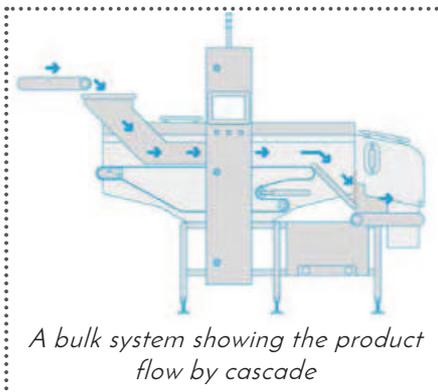
In addition, x-ray systems are available with high friction knurled drive rollers which ensure reliable conveyor operation in extremely wet

or humid factory environments.

3.2.2 Product Transfer

Poor transfers on and off the x-ray conveyor can cause product jams and x-ray imaging issues.

Sticky products such as raw dough or meat, and bulk loose products such as raisins are typically transferred by cascade.



A bulk system showing the product flow by cascade

X-ray systems are available which can be configured for conveyor feed or hopper feed. Such design flexibility ensures convenient integration with existing equipment.

Hoppers are designed to allow easy feeding of product onto troughed conveyor belts. Product can either be hand-fed or conveyor-fed into the hopper and will drop down onto the belt for inspection.

3.2.3 Automatic Reject Systems

Two different types of reject systems (scoop and air-blast) are available to suit a wide range of bulk-flow products and throughput rates. Choosing the right reject system is essential to ensure product safety and minimise product waste. Multi-lane rejects in particular help to reduce unnecessary rejected product wastage.

Scoop Reject Systems

Scoop reject systems are commonly used for bulkflow applications

and are available in various lane configurations. Instead of rejecting a full belt width, they allow a much smaller amount of product to be rejected, helping to minimise product waste, save costs and improve productivity.

The scoop reject is a simple mechanism which uses pneumatic cylinders to raise scoops in the path of the contamination. In normal operation, good product leaves the end of the troughed belt and passes over the top of the lowered scoops and down the ramp onto the customer's conveyor or bin. When contamination is detected, the relevant scoop or scoops are raised; the contamination hits the scoop and drops down into the reject area and onto the customer's reject conveyor or into their reject bin.

Air-blast Reject Systems

Air-blast reject systems are primarily used for monolayer, dry products. A seven-lane air-blast reject uses 14 nozzles to minimise unnecessary rejected product wastage.

3.2 Bulk-Flow X-ray Machines

Both metal detection and x-ray inspection systems are designed and constructed with sanitary principles, such as EHEDG and NSF, in mind to prevent biological contamination. Features include quick strip down belts to ensure easy and thorough cleaning and full IP69 high pressure wash down protection.

4. Factors Affecting the Sensitivity of Product Inspection Equipment on Bulk Food Lines

Factors affecting sensitivity depend upon the chosen inspection technology; both metal detectors and x-ray systems have differing inspection capabilities which directly impact sensitivity.

4.1 Metal Detection

A number of factors affect a metal detector's ability to adequately identify product contaminated with metal. Factors that affect sensitivity include the type, shape, and orientation of the metal, aperture size, position of the metal in the product, product characteristics, static electricity and environmental conditions.

4.1.1 Type of Metal

How easily a type of metal is detected depends on magnetic permeability, which means how easily the metal is magnetised, coupled with the electrical conductivity of the metal. Material that is easily magnetised and more conductive is easier to detect. The hardest metal type to detect is stainless steel, which is usually non-magnetic and a poor conductor of electricity.

Ferrous contamination is both magnetic and a good electrical conductor and is therefore easily detected. Nonferrous metals such as brass and copper are non-magnetic but are good electrical conductors. The conductivity of stainless steel is also variable. This potentially means it could be difficult to detect in wet applications.

4.1.2 Shape of Metal and Orientation Effect

If a non-spherical particle of metal such as swarf or wire passes through a metal detector, it will be easier to detect when passing in one orientation compared to another. This is known as the 'orientation effect'.

The ability of a metal detector to identify wire contaminants varies, depending on the type of metal and the orientation of the wire. Ferrous contaminants are easy to detect when they are presented in an orientation

parallel to the direction of travel. They are much harder to detect when they are at 90 degrees to the direction of flow. Nonferrous metals are the opposite.

If wire is identified as a potential contaminant, it is best to operate the detector with the highest possible sensitivity. Detection, X-ray or Both? Making the Right Choice'.

4.1.3 Product Characteristics and Operating Frequency

Metals are not the only materials that have the ability to conduct electricity and generate magnetic fields. Many food products have, to a lesser extent, the same ability.

When a product is able to affect a metal detector to the same extent as a metal contaminant it is said to have 'Product Effect'.

There are many products that are naturally high product effect applications with high moisture content - and are generally referred to as 'wet' products. Items such as fresh meat, chicken and fish have high moisture content and are relatively good conductors. These products are more likely to produce a signal in the metal detector in the same way as small metal contaminants would. This product effect makes it more difficult for the detector to distinguish between the product and the metal contaminant.

For such products, the metal detector has to be set to reduce or eliminate the product signal to prevent false rejects.

4.1.4 Static Electricity

Falling dry powders and granules can generate static electricity. The build-up of large static charges could have a detrimental effect on the performance of the metal detector or

even pose a safety hazard.

Some products will be more prone than others and environmental conditions such as humidity will be a contributing factor. In order to prevent the build-up of large static charges, the following measures should be considered:

- All metal near the metal detection system (pipes, flanges, supports) should be properly grounded.
- Plastic throughput tubes should be made from food approved conductive plastic (e.g. FDA approved).
- The detector should have a single-point earth.

4.1.5 Environmental Conditions

Metal detectors can be influenced to varying degrees by adverse environmental conditions such as temperature fluctuations. These effects become even more acute when operating at high sensitivities.

4.2 X-ray Inspection

The ease with which food contaminants can be identified by x-ray inspection depends on various factors such as product density, product depth and product homogeneity.

4.2.1 Product Density

To be detectable by x-ray inspection, a contaminant has to be denser than the product in which it is embedded. That means it will absorb more x-rays than the surrounding product and show up on the greyscale image as an area that is darker than its surroundings. In other words, any contaminant with a density similar to, or less than, that of the product in which it is embedded is incapable of being detected by x-ray inspection.

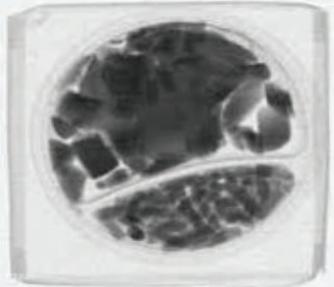
4.2.2 Product Depth

As the product depth in the path of the x-ray beam increases, so does

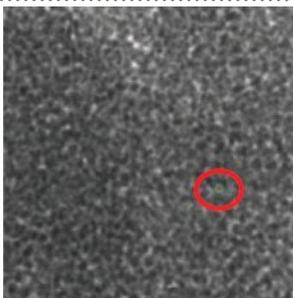
its overall level of absorption. That makes detection of a contaminant more difficult since it is all about relative change in absorption; the greater the product depth, the smaller the level of change for the same size contaminant. In general, the shallower the depth of product, the better the sensitivity of x-ray inspection.

4.2.3 Product Homogeneity

The texture and consistency of a food product has an effect on x-ray sensitivity. A product with components of varying density, such as a ready meal, shows up in a greyscale image as a variety of greys.



X-ray image of a ready meal - lots of varieties of greys make it more difficult to detect a contaminant



X-ray image of dry pet food - it is easier to detect a contaminant in a homogenous product

The more components there are, the wider the range of greys. Analysing the image for contaminants is harder because the software has to pick out the tell-tale dark speck of a contaminant from an image containing numerous shades of grey. A contaminant in a bulk-flow product is easier to detect than if it was in a

finished sealed retail pack, since the image is much less complex, with much less natural variation/change.

5. Which Technology - Metal Detection, X-ray Inspection or Both?

Metal detection and x-ray inspection offer differing capabilities. The first step to identify which technology is the ideal inspection solution is to carry out a HACCP audit and be aware of any customer or compliance-related issues driven by the GFSI and/or major retail groups.

A HACCP audit will identify the risks of contamination being introduced during the manufacturing process and the types of contamination likely to be encountered. CCPs should be established to mitigate the risks and product inspection equipment must then be installed at these points to reduce the risk of contamination to acceptable levels.

For cost-effectiveness, metal detectors are usually the best solution when looking to find metal contaminants only. A metal detection search head also takes up less space than an x-ray inspection system, which means that for applications where installation space is limited, and metal is the only likely contaminant, a metal detector may be the best solution. In addition, metal detection is generally more sensitive if aluminium is the only likely contaminant.

Gravity-fed, powdered or granular products do not travel at the same speed; they accelerate as they fall, and the direction of travel is not uniform as they bounce off each other, for that reason metal detectors are the ideal solution for these types of applications.

X-ray systems have multiple contamination detection capabilities over and above metal. If non-metallic

contaminants, such as glass, mineral stone, calcified bone or high-density rubber and plastics are identified as likely to be encountered, x-ray will always be the only solution.

As well as providing unrivalled detection of a wide range of physical contaminants, x-ray systems are capable of performing several product quality checks. For example, machines can simultaneously measure mass, check fill levels, and detect missing and damaged products at high production line speeds.

In many cases, there is only one suitable solution (metal detection or x-ray inspection) and in just as many others, either technology could be used. However, there are also occasions where it could be necessary to install metal detection and x-ray inspection at different CCPs on the same production line.

More in-depth information about each inspection solution can be found in Safeline X-ray's white paper entitled 'Metal Detection, X-ray or Both? Making the Right Choice'.

6. Conclusion

The effectiveness of product inspection equipment depends on a number of factors. Choosing the right technology (metal detection and/or x-ray inspection) depends on the outcome of a HACCP audit and may be influenced by other drivers too, including cost.

Both metal detectors and x-ray systems have been developed with special features which make them ideal for inspecting a wide variety of bulk food applications at any stage of production. However, a common location is at the start of the production process when product value is low and the risk of contamination from incoming raw ingredients is at its highest. ■ www.mt.com

EAGLE OFFERS HIGH - THROUGHPUT AND EFFICIENT INSPECTION SYSTEMS

For the first time, Eagle Product Inspection (Eagle) was on hand at the International Production and Processing Exhibition (IPPE), Hall B at Booth 6264, to offer expert advice to the meat, poultry and feed industries with regard to inline x-ray inspection, fat analysis and quality control checks.

The market demand for high-throughput, efficient inspection systems is increasing due to the number of producers and processors protecting themselves against contaminant-related product recalls. In addition, demand for technologies that feature data repositories that support traceability and validation of safety plans is bolstered by robust food safety regulations in the US and overseas.

From slaughterhouses to packaging operations, the need for technology that enables meeting Hazard Analysis Critical Control Point (HACCP) requirements is on-going for US facilities trading outside of their state, selling to major retailers or exporting to international markets. Removing contaminants such as glass, metal, stone and dense plastics and rubbers is critical for HACCP and the benefits of removing contaminants early in the process is becoming increasingly clear to the industry.

Kyle Thomas, Strategic Business Unit (SBU) Manager at Eagle Product Inspection, said: "Eagle prides itself on being the inline meat inspection expert. Working closely with facilities, we recognize the importance of providing machines that are robust, reliable and that incorporate proven x-ray technology for both contaminant inspection and fat analysis purposes. Our machines are designed to operate in harsh wash-down environments and are capable of inspecting and analyzing 100% of product inline simultaneously - enabling Eagle to offer the highest throughputs on the market. It is this deep understanding

of producers and the environments they operate within that gives Eagle a unique inline inspection expertise".

Contaminant detection



Eagle RMI3B

The Eagle RMI3 Series is ideal for contaminant detection for those working with unpacked bulk, open crate and carton applications, with systems having been designed specifically to operate within harsh wash-down environments. The RMI3/B ensures reliable inspection of unpackaged bulk products, such as chicken and raw beef, at speeds of up to 37 meters per minute



Eagle RMI3C

(120 FPM). Its maximum throughput is an impressive 50 tons per hour and by utilizing a unique troughed belt, product presentation can be improved and sanitation requirements reduced.

For closed cartons or open crates of raw meat there is the RMI3/C. The x-ray system is similar to the RMI3/B, with the addition of Eagle Product Switch™. Without stopping the production line, processors can minimize downtime through automatic product changeovers - perfect for manufacturers that process more than one meat product on one line.

Manufacturers producing ground meat chub, and other packaged meat and poultry products, looking to streamline operations, the Pack 400 HC eliminates the need for multiple systems on the line, such as checkweighers, metal detectors and vision systems. With multiple inspection capabilities, the system provides superior contamination detection while simultaneously measuring mass (to avoid costly giveaway), and inspecting seal integrity (such as ensuring aluminum clips are present and correctly positioned).

Fat analysis

As profit margins in the meat processing world are a constant challenge, the need to optimize production and have an accurate analysis of chemical lean (CL) is pressing. Using Dual Energy X-Ray Absorptiometry (DEXA) technology, Eagle's range of fat analysis systems give both slaughterhouses and meat processors the capability to inspect 100% of throughput inline and in real-time - providing fat analysis within +/- 1CL.

For slaughterhouses, this capability can eliminate fat claims and help them to achieve combo targets without sorting/sampling, while for processors, verification that purchased meat was accurately priced is simple. Accurate fat analysis also helps with Least

DETECTAMET'S NEW DETECTABLE PAPER TO REDUCE PAPER CONTAMINATION OF FOOD



Eagle FA3M2

Cost Formulation, enabling accurate blending targets to be achieved and reducing inconsistencies in recipe operations.

Eagle's FA3/M is an example that has proven its capabilities time and again. It is a multi-application system capable of providing inline fat measurement and contaminant detection for a variety of products – such as unwrapped meat conveyed in plastic crates, frozen or tempered meat blocks and fresh, chilled, frozen and hot-boned loose bulk. It is a robust machine that has been designed to NAMI sanitary standards with fast breakdown for sanitation. There is no degradation in inspection performance at full throughput, which is an impressive 2,400 plastic crates or frozen blocks per hour, or up to 35 tons of bulk meat per hour.

Its AUTOCALTM automated calibration system, coupled with VALIDATETM, makes it the only machine in the industry to feature automatic calibration and validation. Operators are able to precisely calibrate the machine in less than one minute with a simple tap of the touch screen and are then able to validate this calibration at any time. These features remove the need to use unsanitary and potentially unsafe phantom blocks on the factory floor.

www.eaglepi.com



Detectable paper is tear resistant, and resilient to water and grease. It reduces the risk of contamination of food and the possibility of expensive product recall.

Consumers hate to find their food is contaminated with paper. Yet the use of paper in food processing is still essential for many uses. To reduce this risk of contamination in food a detectable paper is now available from Detectamet. This paper is made using a patented method of combining paper and film in a detectable and durable laminate. Printed instructions, recording of process activities and making special labels are just a few examples of how the detectable paper could be used.

"I have been astonished at the performance of this material" said James Christmas Detectamet MD "It feels like a good quality uncoated paper and it prints so easily on standard printing equipment."

Detectamet Detectable Paper is strong and durable, and highly resistant to tearing and damage from water and grease. This versatile paper can be die-cut, perforated, embossed and glued like any standard paper. It requires no special inks or toners to produce high

quality printed material on common printing systems.

This 120gsm paper is available in A4 and USA letter formats and custom sheet sizes can be produced in smaller quantities. Pack sizes of 25, 50 and 100 sheets are available. For special requirements it is possible for custom shapes to be supplied.

Detectable Paper from Detectamet is a major step forward in contamination prevention and can further reduce the risks expensive emergency product recall. It allows tailor made print material to be produced on site.

Where hand written sheet paper is used to identify batches in process the advantages of a detectable, water and grease resistant paper is immediately obvious. "We have already received enquiries from food producers and food retailers who have identified a unique use for detectable paper in their business and the safe production of their branded products" explained James.

www.detectamet.co.uk

NEW INTERCEPTOR CONQUERS PRODUCT EFFECT IN MEAT INSPECTION



In real terms a 0.5mm change in test sample sphere size equates to 25mm in wire length.

Launched globally at PPMA 2015, the Inspector metal detector range from Fortress Technology takes wet food inspection to a new level of sensitivity. Conquering the longstanding challenge of 'product effect' caused by moisture and minerals, the Interceptor is specifically designed to inspect conductive applications including meat and fish, helping to eliminate false rejects.

Increasing stainless steel detection by 100%, in contrast to recent metal detectors, Fortress's latest technology splits the frequency signals. This means that the machine can clearly differentiate between the signal generated by the product as a result of moisture or mineral content (for example salt that's prevalent in bacon) and any metal contaminant; putting a stop to a potential stainless steel signal being

'swamped' by product effect.

The sensitivity of the Interceptor means it can pick up metal contaminants half the dimensional size previously identifiable. Fortress's Sales Director Phil Brown explains how: "Detection depends on the size, shape and orientation of metal particles. Although a test sample sphere isn't a real world contaminant, halving the test sample sphere size to 0.5mm equates to picking up a wire length contaminant of 25mm."

On raw meat processing lines, products are exposed to a variety of processes. Although stainless steel contamination in products is a rare occurrence, the metal is prevalent in industrial meat preparation equipment. "Whether you are slicing cooked meats, mincing beef or han-

dling raw meat which is a reactive product, the use of knives and meshes are widespread and this means that there's a risk of tiny fragments entering the production chain," comments Phil.

Cutting out background interference

The Interceptor builds upon the cutting-edge Simultaneous Multi-Frequency Technology introduced by Fortress some six years ago. The new technology works by carrying out a real-time analysis of a low-frequency and a high-frequency signal simultaneously.

Phil explains: "Using an advanced algorithm the Interceptor is able to split the product and metal detection signals and then link the readings back together. Compared to the

traditional approach where we would tune into specific frequencies, this new method means we can identify the product effect (most noticeable at lower frequencies) and eliminate it from the higher-frequency signal, where the potential effect of the metal is more prominent."

In some cases, alternative approaches may work on up to 10 different frequencies, where the system homes in on the most relevant range. However, metal detectors that select individual frequency ranges are not able to eliminate the product effect as readily and reliably as Interceptor, claims the Fortress team.

For ease of use, the system learns and recalls the signature of any given product with just one pass. Already available on Fortress's Phantom and Stealth models, this makes the manufacturing process much simpler for production staff and reduces the time spent introducing and checking operational protocols.

"The combination of 100% increased metal detection sensitivity, reduced

false product rejects, single pass product learning, and straightforward upgrades go a long way to boosting overall equipment effectiveness and quality assurance for food processors and manufacturers, as well as safeguarding consumers," comments Phil.

Mobilising smartphone technology

Sticking to the Fortress watchwords of simplicity and reliability, the Interceptor mobilises well-tried technologies in new and efficient ways. By adopting the type of microprocessing power present in today's smartphones, the company can continue to offer customers its unique 'Never Obsolete' guarantee ensuring future equipment compatibility and giving more expansion options. "A few years ago this type of technology would have been far more difficult and costly to integrate into metal detectors," adds Phil.

In true Fortress style, the Interceptor has no hidden extra options, meaning no financial surprises for meat

manufacturers and processors. FM Software is integrated, bringing a predictive element to the analysis of signals from the metal detector. Customers can choose either Wi-Fi or Ethernet connections for easy and accurate data collection. To reduce the risk of human error at critical control points, Halo automatic testing can also be included.

From a machine sustainability perspective, customers with an existing Fortress metal detector can easily upgrade to the very latest processing unit and software and integrate the new coil structure which the Interceptor's accuracy is dependent upon.

Being IP69K rated, the new range is resistant to water ingress, ensuring long-term reliability and performance heavy washdown meat processing environments. Made to order in the UK, Interceptor units can be customised and deployed in different checkpoints on the meat production and packing line. For products with minced meat, such as sausages, pipeline configurations can also be incorporated.

Moving ever closer to the performance of x-ray but at a much lower capital investment, the Interceptor also reliably detects the range of ferrous and non-ferrous metals, including aluminium.

"With the Interceptor, we can challenge traditional expectations when it comes to detection inside metallised film. Many meat applications, especially bulk cuts, pose a challenge to x-ray because of the variation in density. Here, the Interceptor will be the only sure option for the detection of metal contaminants," claims Phil.

www.fortresstechnology.co.uk



Variations in the density of meat products and bulk cuts continue to pose a challenge to x-ray

SENIOR ISHIDA APPOINTMENT STRENGTHENS MEAT SUPPORT



Jeff Say

Ishida has appointed Jeff Say as General Manager for Africa in addition to his existing responsibilities as General Manager for the Middle East, to support and grow the company's presence throughout the MEA region.

Mr Say heads up Ishida's specialist teams, based in Dubai and Johannesburg, which provide full sales, service and technical back-up for Ishida equipment and installations.

Jeff has widespread experience of the packaging industry. Prior to joining Ishida as Sales Manager, Middle East in 2012, he spent 10 years in a number of international sales roles with Longford International.

"Jeff's promotion is a key part of our strategy to further grow our business throughout the MEA region," comments Mike Heffernan, Core Business Sales Director.

"His experience of both Ishida and the wider machinery market has already been invaluable in the success of our Middle East operations and he will now bring the same expertise to the African countries, supporting our existing customer base, developing bespoke solutions for new installations and identifying opportunities in a number of emerging sectors of the food industry."

www.ishidaeurope.com

FOOD SAFE MEAT MARKERS NOW SAFER



Detectamet Bullet Tip Meat Markers are retractable, safe in contact with meat and can be detected and rejected by Metal and X-ray inspection.

Food Safe Meat Markers Now Safer Special markers that are used to identify meat carcasses can now be used with much less risk of contamination. The new Detectamet Meat Marker are now supplied in the company's tried and tested retractable and detectable housing. That means there is no need for a pen cap and the risk of contamination is halved.

The first retractable and detectable marker pen was introduced 24 months ago and it has been a resounding success. "The unique patented design pulls the fibre ink cartridge back within a clamshell case to stop it drying out" explained James Christmas Detectamet's MD.

The cap-free housing is made from Detectamet's metal and X-ray detectable blue plastic so that the risk of producing plastic contaminated food products is even less.

Write-and-retract detectable marker pens were launched containing permanent or write-on/wipe-off coloured inks and highlighter inks.

This new marker uses a special red or blue ink that is safe to use for marking meat carcasses.

James explained "A few months ago a manager in a large abattoir tried our one piece retractable markers for permanent writing on boxes. He had previously lost too many pen caps and the marker ink dried out and he was also worried the caps would get into the burger mix. He switched to our write-and-retract versions."

"They were so successful that he immediately asked if we made them with meat safe ink which he could use to write directly onto meat" James explained, "and our new retractable meat safe ink markers are the result."

They are supplied in a food visible blue housing and the user can choose red or blue ink for writing on meat carcasses

The plastics and the inks have been tested to ensure that they fulfil the requirements for safe contact with food under EU and US regulations.

www.detectamet.co.uk

NEW 20 LITRE BUCKET BLENDS MULTI-PURPOSE FUNCTIONALITY WITH HYGIENIC DESIGN AND VIKAN DURABILITY

When you scale up a bucket to hold 20 litres of solid or liquid ingredients, the bucket becomes more than just a bucket. That's why Vikan is especially pleased to announce the new 20 Litre Bucket, a combined mixing station, stackable storage solution, transport system and cleaning vessel that also features state-of-the-art hygienic design and renowned Vikan quality and durability.

The 20 Litre Bucket has been painstakingly designed for multi-

angles and strategically placed drainage holes have eliminated surfaces where contamination and liquids could accumulate, helping customers minimise the risk of cross-contamination. The use of premium-quality materials ensures compliance with EU and FDA food contact requirements and the dependable performance and durability that customers expect from Vikan. Joining Vikan's 6 and 12 Litre offerings in a complete family of hygienic design buckets, the 20 Litre Bucket is available in 5 colours.



functionality.

Its optimised size, tapered shape, spill-proof lip and clever bottom handle make the bucket ideal for ergonomic ingredient mixing and pouring. The specially designed lid and bottom comprise a secure stacking system, enabling customers to double the volume of stored goods per square metre. A dual handle system allows for carrying by either one person or two, protecting workers when transporting heavier loads. And the bucket is the perfect size and shape for cleaning and disinfecting utensils and cleaning tools.

Hygienic design principles such as smooth surfaces, no acute internal

Deb Smith, Global Hygiene Specialist for Vikan, says:

"Our product designers have applied EHEDG hygienic design principles throughout the construction of the 20 Litre Bucket. No matter how you use it - for mixing, storage, transport, or cleaning and disinfection - you can be certain that this bucket will help you maximise food safety and quality."

www.vikan.com

MULTISORB HIRES JIM CLARK AS MARKET LEADER - FOOD AND BEVERAGE PACKAGING



Multisorb Technologies is pleased to announce the appointment of Jim Clark to the position of Market Leader - Food and Beverage Packaging. In this role, Clark will lead business development efforts for the food and beverage packaging market.

This appointment demonstrates Multisorb's ongoing commitment to offer solutions-based sorbent technology to the food and beverage market. Based in Detroit, Clark will report to Jim Renda, President.

"We are pleased to have Jim provide leadership to our food and beverage business development team," said Renda. "Jim's consultative approach and strong skills in strategic sales management will help us in our efforts to provide customers with value added solutions that help them preserve freshness, extend shelf life, and meet their food safety and sustainability requirements."

With over 19 years of packaging sales and sales management experience, Clark most recently was with Silgan Plastic Food Containers where he held the position of Regional Sales Manager. Prior to this role, he was with Cadillac Products Packaging Company as Business Development Manager.

Clark holds a Bachelor's degree in Communications from Miami University in Oxford, Ohio

www.multisorb.com

X-RAY DELIVERS ENHANCED BONE DETECTION

Two advanced Ishida X-ray systems are providing enhanced quality control checks, detecting small bone particles in a range of brawn products from leading speciality producer Gold Meat, based in Zolder, Belgium.

Gold Meat produces a wide range of products for the retail market, both pre-packed and over the counter. Increasing demand for ever-more stringent quality checks led the company to become one of the first in its sector to invest in X-ray technology.

The company undertook a series of tests with a number of equipment suppliers before selecting Ishida. "The Ishida came out clearly on top," says Francis Titeca, Owner of Gold Meat.



Ishida X-ray systems use unique self-learning Genetic Algorithm (GA) technology to offer maximum sensitivity and reliability in the detection of impurities down to 0.3mm in size. This focuses the machine to identify contaminants using image data analysis over a number of inspections. Data logging helps to build up a more precise

calibration protocol with each inspection, which enables defects to be more easily identified and their location in the pack pinpointed.

The Ishida X-ray systems are being used to detect bone particles in slices and blocks of meat in 200g, 250g and 300g packs, and also in pots of 'Head in Tomato'.

"Before the Ishidas we had to rely on eyesight to detect and remove these very small particles and we simply couldn't achieve the same level of detection," says Dominic Bousard, who is in charge of Gold Meat's production. "The X-ray systems are also easy to operate and very reliable."

Gold Meat worked closely with long-term Ishida distributor BRN in Belgium in the installation of the two machines. The latest model, the IX-GA-S-2462, features a number of specially-requested enhancements. For added protection, BRN has included extended covered infeed and outfeed conveyors, while the system also incorporates a bespoke reject system. Special sensors in the reject bin signal to the machine that a rejected pack has left the line. If for any reason this signal is not received the line is stopped so that the faulty pack can be identified and removed.

Another special feature of the machine is the portable gantry on which it sits to give it the flexibility to be moved to other packing lines if required.



"We have an excellent relationship with BRN," comments Francis. "This is a supplier who thinks along the same lines as us, and is a reliable and helpful partner. And for a business like ours, it is essential that we have localised support here in Belgium, backed up by Ishida, as this gives us the reassurance that if a problem should arise, or a part be needed, the matter can be dealt with speedily and efficiently and our production will not suffer."

"It is for the same reason that we selected the higher quality Ishida machine over its rivals - we need this reliability of operation because we cannot afford the downtime and do not have the manpower to deal with maintenance issues."

"Of course this reliability comes at a price," he concludes. "But what would be the cost in lost reputation and retailer and consumer confidence of just one product recall? The payback on our investment can be seen in our customers' satisfaction". ■

www.ishidaeurope.com



Left
Edrissa Mass Jobe
(Executive Chairman EM
Holding),
Right
Ruud Berkers (Marel Stork
Area Sales Manager)

“BUY LOCAL” A CORNERSTONE FOR EMPAS. THE FIRST PROFESSIONAL POULTRY PROCESSOR IN THE GAMBIA

“**E**at what you grow, buy local”, that’s the slogan firmly endorsed by Empas Poultry’s founder and General Manager Edrissa Mass Jobe. Local food production and employment is exactly what the Empas greenfield poultry project is all about with long-term support from Marel Stork. Recently, this first professional poultry processing plant in The Gambia was officially inaugurated.

The Gambia is a relatively small West African country with a population of 2 million people. The Empas poultry processing plant is located near Banjul, the country’s capital, and the popular tourist coastal cities of Serrekunda and Bakau.

Produce your own food

The entire Empas set-up includes a parent farm, hatchery, breeders, feed mill and a processing plant - equipped with Marel Stork systems. All facilities were newly built, which has resulted in the country’s very first professional, modern processing plant. The EM Holding umbrella company is a social enterprise focusing on local food production and the employment of young people. “We need to be self-sufficient. If you consume food that you don’t produce, you’re entangled in a vicious cycle of poverty”, says Edrissa Jobe. Empas’ aim is to avoid imports in The Gambia by ensuring local production of enough chicken. The main reason for choosing Marel

Stork as the one and only supplier for the processing plant was that the Dutch company could safeguard the highest standards and food safety. To Edrissa Jobe the only solution to poor nutrition and food insecurity is expanding national food production.

All Marel Stork

All systems in Empas’ greenfield plant, which has a capacity of 1,000 bph (17 bpm), and is prepared for 2,000 bph (34 bpm), have been supplied by Marel Stork: from the semi-automatic first stages to cut-up equipment. Starting with the live bird handling crates, the broilers are hung in the shackles and pass through the water bath stunner, the automatic



killing line - which is halal certified -, the scalding and the plucker. The next step, evisceration, is handled semi-automatically, after which the spin chiller does its job. Marel Stork equipment is also used for automatic by-product handling, like offal processing. For example, Empas uses a separator to extract the water from the waste.

Fitting the market

Since 2010 Marel Stork has been



working with Empas to develop the process from plan to execution. Area Sales Manager Ruud Berkers says: "We never deliver our equipment just like that. It is above all the added value we created, by offering our advice and support before, during and after installation. Good and reliable service is always of key importance. During those five years, we supported the entire roadmap with all of our knowledge and our 'think global, act local' approach. Our Project Manager has put great effort into assisting Empas in executing the process, taking every possible scenario into consideration. Together with Empas, we could clearly define what kind of customized solutions and equipment would be best suited to the market. Focusing on the unique individual situation, we could determine the right combination of systems. This also meant keeping costs of ownership and maintenance costs as efficient as possible."

Inauguration

The inauguration of the plant was a big happening. Vice President of

The Gambia Dr. Isatou Njie Saidy gave a speech in the presence of all ministers of the cabinet. National musicians and dancers performed live at the premises of Empas, while the assembled national press broadcasted the event live on Gambia Television. During this official ceremony, Ruud Berkers presented the symbolic metal chicken to General Manager Edrissa Mass Jobe on behalf of Marel Stork Poultry Processing.

Moggie sold here

The end products of Empas Poultry are fresh as well as frozen chicken meat products with the brand name Moggie. They are distributed in the retail market, via supermarkets and restaurants. As the owner of most of the gas stations in The Gambia, Edrissa Jobe invented another smart way of distributing Empas' products: in every Elton gas station shop you'll find a refrigerator with Moggie chicken products, as well as a door sticker 'Moggie sold here'. ■

www.moggiechicken.com

WORLD - LEADING ROBOTS INSTALLED AT SMITHFIELD PLANT



Milmeq Innovation Manager, Ross Clarke and Alliance Project Engineer, Barry Stewart checking the operation of the new robotic technologies at Alliance Group's Smithfield plant.

Leading meat processor and exporter Alliance Group has installed two robots at its Smithfield plant near Timaru as part of its strategy to improve the cooperative's operational efficiency.

The fully-automated brisket cutting and evisceration robots automate the difficult and potentially dangerous part of livestock processing, resulting in improved product quality, hygiene and safety.

The robots were designed,

manufactured and installed by New Zealand engineering company Milmeq in conjunction with Ovine Automation Limited (OAL). The installation of the robots at Smithfield is the first commercial application of the technology and follows several years of testing as part of OAL's research and development programme.

Kerry Stevens, Alliance Group General Manager Processing, said the installation of the technology at Smithfield is the first step of a larger project Alliance Group is undertaking at the plant.

"We're installing the latest robotic technologies to improve productivity and plant efficiency as part of a wider strategy to lift returns for our farmer-shareholders."

"This investment demonstrates our commitment to innovation and will support our efforts to optimise returns for New Zealand farmers and ensure that we remain competitive on a global scale."

Testing of the technology showed

improvements in productivity and a reduction in food safety risks, he said. Mike Lightfoot, Milmeq CEO, said "It is fantastic to see the development that has gone into these robots now coming to fruition at a commercial level. We are delighted to be installing them for Alliance Group who share our vision for innovation."

"We see this as being the way of the future for lamb processing throughout New Zealand and globally. I would anticipate that, in time, the automated brisket cutter and evisceration robots will be recognised as setting the industry standard."

"Seeing the robots successfully operating at Smithfield is a tremendous achievement for all concerned. It's great to see a tangible success of the research conducted," added OAL General Manager, Richard McColl.

The Smithfield plant, which serves the company's upper South Island suppliers, processes sheep, lamb and venison through most of the year and employs approximately 500 staff. ■

Brisket cutting robot recently installed at Alliance Group's Smithfield plant.



Brisket cutting robot in operation at Alliance Group's Smithfield plant.



Evisceration robot recently installed at Alliance Group's Smithfield plant



www.milmeq.com

REVIC was founded in 2002 and since then became one of the leaders in its segment. Our aim is to be one of the most recognized brands of meat processing machines. Main advantages of REVIC are high quality, durability, reliability and great service. Wide range of products and pioneer solutions proves that REVIC consists of highly-skilled and experienced specialists. Our mixing, grinding, slaughtering and hygienic equipment is available in either standard or custom designs, to meet your specific needs. The company has a growing reputation for innovative engineering, durable construction and great price. REVIC equipment is designed and built in Poland.

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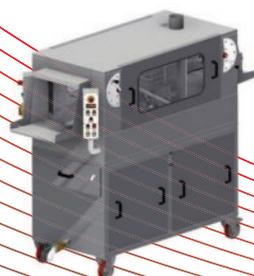
REVIC is a manufacturer of approximately 200 models of machines and equipment for food processing and also customizable technological lines for slaughtering, deboning and meat processing. Each of our machines have developed a great reputation for efficiency, reliability and cost effective usage. Our trading network reaches every continent and our machines are present in 40 different countries! Our plant is fully equipped with advanced engineering and manufacturing tools, which makes it possible to meet every needs you have!



Mixer RX-850



Vacuum Mixer RX-1250V



Container Washer MP-100



Smokestick Washer MK-300



Grinder WP130



Angular Grinder WR-200K



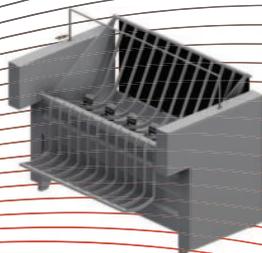
Vacuum Thumbler MS-200V



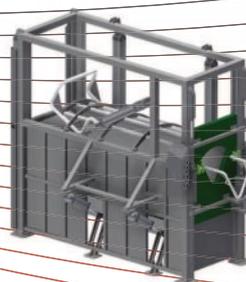
Heat Boiler



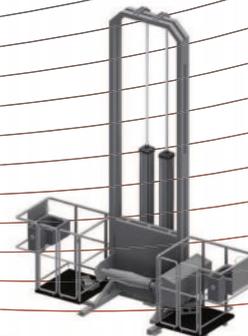
Pig Stunning Box



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**HIGHEST
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THE WORLD'S BENCHMARK IN BREAST CAP DEBONING. ALWAYS NEW OPPORTUNITIES FOR STORK AMF-BX LEXCONTROL

Already at its launch the Stork AMF-BX FlexControl was the benchmark in breast cap deboning and became a huge success with hundreds of systems in operation worldwide. Time and again continuous development is opening up new product opportunities for this system, at the same time maximizing deboning efficiency, quality and yield.



The top quality, high yield fillet products created on an AMF-BX FlexControl system are perfectly fit for retail sale or for use in further processed products. This well proven breast cap filleting solution may boast hundreds of installs worldwide, and it continues to be the benchmark in breast cap deboning. The most renowned firms in every part of the world, be it China, India, South America, Russia, Africa or Europe prove to Marel Stork

Poultry Processing that the AMF-BX FlexControl is performing very well under all circumstances, for all capacities.

Fully automated

AMF-BX FlexControl not only produces a wide range of breast fillet products for retail and industrial customers but also harvests valuable by-products, such as skin, breast tendon meat and breast cartilage. Breaking the total process into steps, which can be continuously monitored and controlled by the FlexControl interface, is the secret behind the system. Final fillet and tenderloin removal, inspection and trimming are always done manually. Apart from that, all filleting operations can be done automatically, thus saving manual labor. A full-scale AMF-BX deboning system would comprise modules carrying out the following tasks: breast cap loading, deskinning, breast blister removal, wishbone removal, fillet halving, fillet separation, tendon cutting, tenderloin separation, breast tendon harvesting and cartilage harvesting.

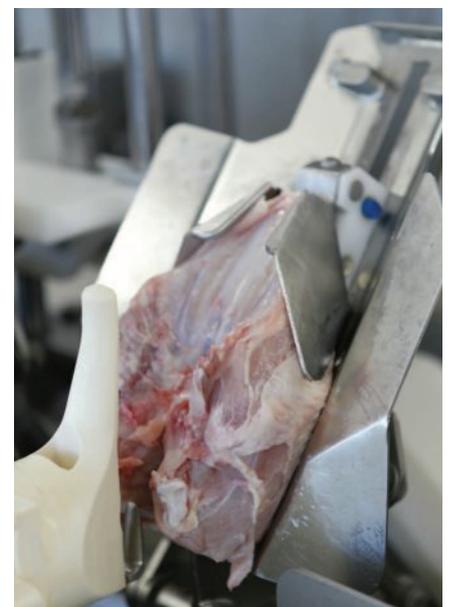
Modular set-up

Breast caps are automatically loaded onto the rotating product holders and conveyed through each of the system's modules by the transport mechanism. Turning stations position the holder correctly for each processing operation. Each module is responsible to handle one specific process step and modules can be switched on or off to create different end products. Every individual poultry processor

can choose his own preferred line-up of modules, whichever suits them best. The system can debone a wide range of breast cap weights into a wide range of skin-on or skinless breast fillet products, varying from whole butterflies with tenderloins attached to half fillets with tenderloins harvested separately.

Touchscreen, sensors and PLC's

Poultry processors typically handle a range of breast cap weights. For optimum yield and top product quality it is essential that modules are set correctly for the weight of breast cap being processed. This is what FlexControl does best. Each time the calibrated breast cap weight of the batch changes, the in-feed operator easily chooses the new weight range on a touch screen at the FlexControl system. All module settings will change automatically to handle the





new weight. Top yield and quality are therefore guaranteed across the whole range of breast cap weights and on all breast fillet products. This gives processors optimum flexibility, allowing them to react flexibly to changing orders from their customers. Sensors along the system determine the timing of operations such as start/stop of a cutting blade or the cutting length. A PLC system (programmable logic controller) resets these adjustments almost immediately when breast cap weights change, optimizing the cutting action and timing of all modules and

keeping yields and product quality at a consistently high level.

Add-ons

Besides the modules, the AMF-BX FlexControl can also be enriched with various add-ons, such as the SystemFlex buffer belt. When the time comes to debone the breast caps, they are loaded by calibrated weight ranges (of for instance 100 grams) onto the SystemFlex buffer belt which takes them to the infeed of the AMF-BX FlexControl system. The buffer belt is controlled by the same

operator who feeds the deboner system's semiautomatic breast cap loader. This ensures a smooth, uninterrupted flow of product to the deboning system, keeping production efficiency at the highest level.

Ongoing refinements

The AMF-BX FlexControl breast cap deboner hits yield and quality targets time after time, across the whole range of breast cap weights handled by poultry processors. Nevertheless, Marel Stork is always looking for ongoing refinement, even of proven solutions. That's why in time, the number of end product options for the AMF-BX has considerably grown, manual operations were reduced, the cuts became more complex, PLC controls replaced pneumatic parts and a user-friendly control by menu was integrated. As a result, the system's yield kept on increasing. The latest continuous evolution of the deboning system is the off-line buffer belt, onto which product batches, e.g. off-line matured breast caps of specific weight ranges, can be loaded. This creates a controllable, continuous flow of breast caps, to be handled by the AMF-BX FlexControl. ■

www.marel.com



The new angle grinder and mixer angle grinder E 130 mm / G 160 by K+G Wetter facilitates machine cleaning and component assembly.



In line with its own aspiration in terms of continuously optimising meat-processing solutions, K+G Wetter has launched the new angle grinders and mixer angle grinders E 130 mm / G 160 just in time for IFFA. The new machine's USP is constituted by the direct access to the grinder hopper,

HIGHLY EFFECTIVE AND PRACTICAL ACCESS

the so-called "Easy Access" function. Thanks to this spacious opening to the mixing chamber, users can easily "reach into" the machine to clean it or to top up the meat supply. The machine operator also no longer has to make the effort to bend over the edge of the hopper to gain access to the mixer shaft and the feeder worm. This means that s/he can single-handedly convert the machine into an angle grinder without a mixing device, or - conversely - add the mixing function. In terms of mixing capacity, the new mixer angle grinder can accommodate up to 190 kg of meat.

Vacuum cutter: A new standard for efficient processing

As far as cutters are concerned, too, K+G Wetter is constantly working on new and individual solutions for the butcher trade. K+G Wetter will



Cutters from the Cutmix design series from the house of K+G Wetter ensure rapid and efficient meat-processing in a trade or industrial setting.

present the new 120-litre vacuum cutter in the spring of 2016. "What is special about this cutter is that the front part of the cover can now be easily opened. This creates new



The "Easy Access" function allows users quick and convenient access to the grinder hopper.

options for making processing faster, easier and, above all, more efficient", says K+G Wetter CEO Volker Lauber. In addition, large access points for cleaning procedures allow a clear view of the area below the bowl, thus facilitating thorough cleaning. The new machine, the latest development in the successful Cutmix design series from the house of K+G Wetter, also has inclined surfaces that ensure that all cleaning liquids will drain away completely, thus setting the highest possible hygiene standards.

Additional information about these innovations and all K+G Wetter machines can be obtained at IFFA, Hall 8, Stand B 68.

www.kgwetter.de

VERSATILE MARINADES ADD PASSION TO MEAT AND VEGETABLES

With Frutarom Savory Solutions' new marinades portfolio, the BBQ season can't come soon enough

Frutarom Savory Solutions launches its new marinades portfolio. "Caesar" is inspired by the popular salad dressing of the same name, while "Hickory" is characterized by smoky flavors blended with subtle, sweet notes. To capitalize on the trend for grilled vegetables, the company is also promoting a range of marinades suitable for vegetables. With the Olympic Games in Rio de Janeiro in mind, marinades with a Brazilian character complete the 2016 portfolio. All products convince with their excellent taste, without added monosodium glutamate, and ease of use.



Umami taste sensations

At the heart of the "Caesar" marinade is a hard cheese note which is naturally umami-rich and provides a truly authentic and hearty taste profile. This creamy marinade is perfect for poultry, as well as for pork and fish.

Smoky notes are associated with barbecuing, and the compounds in smoke also activate the umami sensation and contribute to a meaty and full sensory experience. Frutarom's new "Hickory" marinade capitalizes on this effect; its distinctive smoky notes give it an intense and full-bodied taste profile. Refined with slightly sweet flavors, the result is a harmonized accompaniment which goes very well with beef and pork.

A twist of flavor for greens

To make vegetables more exciting, Frutarom promotes three different marinades that make it easy to create delicious vegetarian and BBQ side dishes. "Reichenau" provides the classic combination of butter and garlic, while "Akropolis Gyros" adds a Mediterranean flavor by bundling herbs like thyme and oregano with garlic. This goes especially well with vegetables like peppers, courgettes and aubergines, as well as with feta cheese. Fine onion pieces and a pleasant paprika note form the core of "Summer", the third marinade that elevates vegetables above the norm.

A dash of Brazilian inspiration

Inspired by typical Brazilian dishes and condiments, Frutarom has also developed a range of sophisticated marinades which bring South American flair to the table. These include "Copacabana", which is characterized by its sweet, fresh and fruity taste with a subtle note of orange and works especially well with poultry, fish and pork. "Churrasco" - the Brazilian term for grilled meat in general - has a

deep, smoky flavor refined with pink pepper that goes particularly well with beef.

In addition to marinades, Frutarom also offers BBQ seasonings that are sprinkled directly onto meat. These give products a different appearance to that achieved with marinades, and are just as flavorsome. The seasonings are available with and without salt and come in a wide range of options, including "Copacabana", "Churrasco", and classics such as "Weinbauer" (based on paprika, coarse black pepper and onion) and "Joelito" (based on paprika, garlic and fenugreek seed).

"Barbecuing is far more than simply preparing food outdoors - it's a wonderful reason to meet with friends and family. Our versatile portfolio of marinades and seasonings offers taste sensations to fit every palate and every consumer.



With the growing number of flexitarians and vegetarians in mind, our new vegetable marinades in particular show

that we are responding to consumer demands," explains Mirjam van Veldhuizen, Marketing Manager at Frutarom Savory Solutions.

www.frutaromsavory.com



ESSENTIA PROTEIN SOLUTIONS LAUNCHES ROI DRINDE™ VIA REDBOOK INGREDIENT SERVICES LTD

Ingredients specialist Essentia Protein Solutions has introduced ROI (Republic of Ireland) Drinde™, a high quality functional protein made from 100 per cent Republic of Ireland only rind.

ROI Drinde™ is exclusively available from Essentia's Ireland distributor Redbrook Ingredient Services Ltd to manufacturers looking for quality assured rind from pork which is born, reared and slaughtered only in Republic of Ireland.

It has been developed to meet growing demand for provenance of food ingredients, explained Rod Davies, Legislation & Applied Technology Manager at Essentia.

"ROI Drinde™ adds real value for sausage manufacturers. Importantly, it is fully traceable, so consumers can be confident of where their ingredients come from and can be sure of the quality they are purchasing.

"Equally, it is proven to reduce formulation costs and help improve texture, flavour and nutritional value in sausages."

Essentia's research shows that manufacturers with a daily volume of 10,000 kilos of meat production, could expect to save more than €102,000 a year if they include ROI Drinde™ in their sausage formulas.

Mr Davies added: "It's a highly versatile product. Not only does it save you money, but it also adds value as a natural meat ingredient that gives you consistency, reliability and is microbiologically safe."

Manufacturers can improve binding in sausages by stabilising fat and water to give an improved texture and eating experience.

They can also improve cooking yield in cooked sausages and can improve the shelf life in savoury bakery products by creating a barrier between the meat and the pastry.

Equally, manufacturers can label ROI (Pork) on the packs of products without additional labelling, as ROI Drinde™ counts as part of the meat QUID declaration.

ROI Drinde™ is another step in

Essentia's drive to build on the success of its British Quality Assured Pork (BQAP) Drinde®, added Mr Davies.

"It is another quality assured product extension to our portfolio. We see this as an important way of supporting manufacturers in the Republic of Ireland in their quest to only use quality assured ingredients."

With over 40 years' experience, Essentia (formerly BHJ Ingredients UK) is the UK leader in functional proteins for meat manufacturers.

Its wide-ranging product portfolio provides applications for a comprehensive range of meat products delivering values such as enhancing product quality and reducing formulation costs, helping customers boost their competitive advantage.

Essentia's Drinde™ and ScanPro™ functional protein ingredients are developed to be used in combination with, or as an alternative to other ingredients and raw materials.

www.redbrook.ie

LINPAC SLASHES CARBON FOOTPRINT EVEN FURTHER FOR EPS PACKS

Last year the leading fresh food packaging supplier, LINPAC, won the most improved factory award for its St. Helen's site in the prestigious Britain's Best Factory Awards.

A major part of the work at St Helens - and throughout the group - is the company's continuous focus on improving the environmental performance of its products and services.

In that context a recent programme of machinery refurbishment at LINPAC St Helens and at other LINPAC group sites has ensured a world-first reduction in the energy cost of expanded polystyrene (EPS) packaging, thus slashing the carbon footprint of the products produced even further.

LINPAC produces EPS for a range of foodservice packaging solutions at St. Helens. Lightweight yet robust, the HOTpac and EPS tray range keeps food warm, manage portion control and are extremely lightweight; in fact a single pack is 98% air. That being said, LINPAC does not stand still. The company has a focus on improving the environmental performance of all of its product ranges and the opportunity to improve the EPS extrusion and thermoforming processes to further minimise the production carbon footprint had to be investigated.

The reduction in production carbon footprint was achieved by upgrading selected thermo-forming product lines from conventional heating systems to infrared-based heating. LINPAC Innovation Director Alan Davey says that 'production innovation is as much a part of our brief as product innovation. EPS packaging is a perfectly fit-for-purpose packaging solution and we are

delighted at LINPAC to be reducing its environmental impact even further with these energy saving technologies.'

Infrared (IR) radiation can sometimes be described as 'sunshine without light'. When applied correctly in heat work it can result in substantial improvements in process accuracy and energy saving.

However, IR heat science is still relatively misunderstood and misapplied in many industrial sectors. LINPAC supplier Ceramicx uses proprietary know-how and instrumentation to accurately map the invisible IR heat flux spectrum thus enabling the company to build the lowest energy IR heat source and control.

In order to enable and prove the new IR heat system, a substantial amount of study work was undertaken prior to, and during, the St Helens upgrade process. These studies were commissioned for LINPAC by the IR heating supplier Ceramicx and were conducted at the St Helens site by Dr. Robin Kent of Tangram Technology, who measured

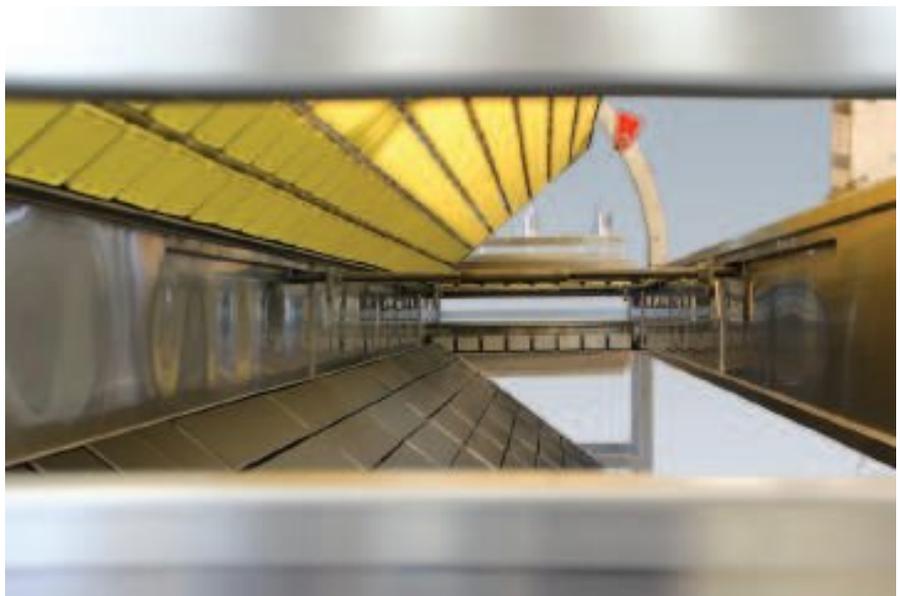
the detailed differences in the heat and energy performance between two identical thermoforming lines.

The comparisons between the IR and non-IR thermoforming lines were undertaken using identical tools, products and cycle times. Both LINPAC lines manufacture the same EPS packaging products for the food service industries.

Under test, the IR heating systems showed a decrease in the average power drawn from 56.16 kW to 32.85 kW, representing a 41.6% reduction in energy. Figures were also taken that showed a direct comparison between the two oven systems. With the machine base loads removed, the Ceramicx IR-based system then showed a measured energy saving of 45.8%.

Both machines were directly comparable and both are part of two in-line and fast cycling systems at the customer, loaded with the same tools.

David Parker at LINPAC says that 'we



wanted to ensure that all the proposed system changes and energy reductions were scientifically measurable and verifiable. This was achieved and we are now scaling up the benefits in similar production work across the LINPAC group.'

Ceramicx owner Frank Wilson says that 'we were delighted to collaborate with LINPAC on this unique project. The best thermoformers in the world are questioning, re-evaluating and moving their heat technology and production efficiency over to IR sources.

'Carrying on regardless with the same heat legacy issues is neither sensible nor profitable. The key for us is to provide such customers with great IR thermoforming platen build - and to combine that with pin-point accurate electronic and process control.'

In plastics thermoforming production these heating legacy issues to be overcome can often include burn outs, electrical faults and problems with older style and non-directional heating. Tubular and magnesium filled heating solutions; black rod heating and other kinds of non-infrared sources can all make a contribution to inexact systems of thermoforming production and - above all - to a waste of energy and electricity cost. And in a completely enclosed system or oven, this kind of heating becomes uncontrollable. Thermoforming operators are being continually forced to ramp up the power and the input electricity in order to try and maintain an even temperature.

Getting new IR heating systems designed and installed for thermoformers typically requires 3-4 days onsite for integration, including a 24 hour runoff. Opportunity is also taken for the new thermoforming

control system to provide early warning diagnostic features; the ability to alarm the operator in the event of a single heater loss, a shorted wire or bad fuse.

Replacing an entire thermoforming machine is too big a step for many but an IR upgrade can improve the performance of an expensive fixed capital asset and can typically pay for itself within months.

Every thermoforming system, in some way, has its custom features depending on products, materials and cycle time. The Ceramicx belief is that sooner or later most of these will migrate over to IR based systems in the coming years.

The St Helens-bound Ceramicx IR-based oven platen and control system was designed and built at the company's manufacturing facility in West Cork, Ireland before being shipped directly to LINPAC. The new oven has a total of eight temperature sensors built into the system. These can be selected individually or grouped for control purposes. Additionally the heaters can be subdivided into as

many as 132 separate zones, thus saving further energy and giving a wide range of control options.

The Ceramicx oven system features upper and lower heating platens together with power control systems, enclosures, switchgear, and PLC control.

A total of 420 Ceramicx IR heating elements were used for the St Helens upgrade. Each of these Ceramicx-made elements has its own unique and traceable heating fingerprint, the performance of which is documented and verifiable online.

The oven assembly itself is fitted with pneumatic cylinders which are operated manually via two solenoid valves. The lower platen is used as a counterweight, using steel rope and pulleys. The control systems offer the processor a choice of both open and closed loop control, together with cost-saving procedures in start-up and fault monitoring in addition to inline process energy control. ■

www.linpacpackaging.com



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- 100 % natural with no preservatives
- Optimally processed
- Premium fresh flavour, texture, taste
- Extended shelf life
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Meet us at IFFA in hall 9.1 stand E58
7 - 12 May 2016 in Frankfurt, Germany.
www.micvac.com



PROSEAL LAUNCHES LARGE CAPACITY TRAY SEALER

Heat sealing specialist Proseal has introduced a new tray sealer specifically designed to handle very large food trays.

The new Proseal GT5exSD can seal trays up to 400mm wide, making it ideal in particular to handle large cuts of meat and joints. Top speeds for the single lane machine are up to 40 skin pack trays per minute.

The GT5exSD is fully flexible and adaptable to handle any type of packing operation, including MAP gas flushing, Vacuum MAP sealing, skin packaging below and above the flange, and Skin Deep. Customers can simply select the format types they require and these can be added to or taken off at any time. This allows food manufacturers to change their pack formats in line with customer demands without having to invest in new equipment.

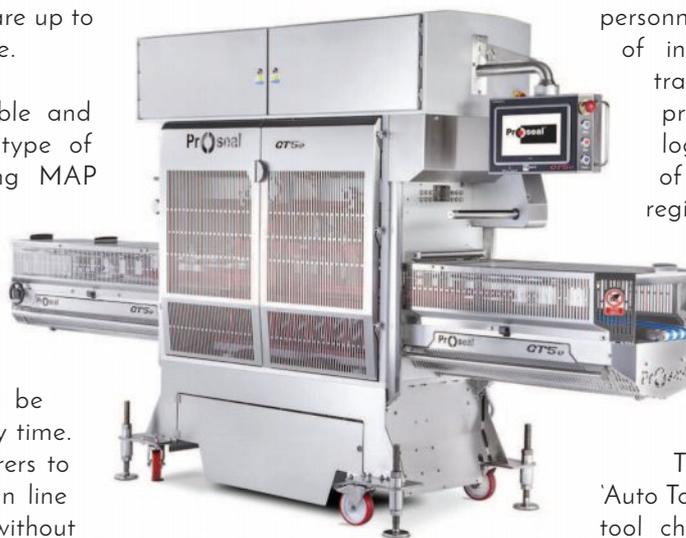
Maximum throughput is achieved thank to Proseal's Pro-Motion system, which uses following motion and intelligent buffering technology to enable trays to feed continuously into the sealer without stopping. An auto-detect product flow monitoring system

regulates the speed of the infeed conveyor according the amount of trays being supplied. This typically increases speeds by up to 30%.

Proseal's E-seal® technology meanwhile provides high quality seal reliability to meet the stringent quality

any tray sealer with rapid strip down of the product handling conveyors allowing deep cleaning to be carried out quickly and easily.

Another advanced feature of the GT5 range is its Pro-Tect user login security system, which provides different levels of authorisation access for individual personnel. The system keeps a log of information inputted for full traceability in the event of any problems, and any attempt to log in above a person's level of authorisation will also be registered and recorded.



The GT5 retains Proseal's renowned rugged construction to food industry approved hygiene standards with full wash-down protection.

The company's established 'Auto Tool' connection system enables tool changes to be carried out in around five minutes, while downtime is further minimised by the use of quick-change conveyor belts, and an auto-lock film reel holder.

requirements of the food retail sector while delivering a 92% reduction in energy usage, which offers valuable cost savings and sustainability benefits.

Equally important, the machine boasts the most hygienic design of

The retention of valuable pneumatic functions means the machine can also offer additional benefits such as date coding of pre-printed film.



NEW: FCA 90 VERSATILITY AT ITS BEST!

Flexibility of the highest degree is what distinguishes the new Automatic Double-Clipper FCA 90. It is the FCA to offer the world-wide fastest overspreading with a total spreading of up to 300 mm. It is compact

and convinces by means of a highly simple handling. The variety of the applications in the calibre range of 38 to 160 mm and the visually appealing

character of the product, achieved by the use of the R-ID clip series at up to 126 cycles per minute, speak for themselves.

Those who want flexibility in the manufacture of chubs, sliced sausage, ham and moulded products, cannot fail to notice the new FCA 90. With the unique PCS motion controller, the new standard is set for speed when overspreading. The operator can easily change from standard to overspreading and back by retrieving the parameters from the recipe management of the SAFETY TOUCH.

The machine processes R-ID Clips of the spacing M, L

and XL with the spreading from 26 to 44 mm at a total spreading of up to 300 mm. For products with loops there is the automatic GSA 20 looper, deviating from the standard, with a loop to the right.

www.polyclip.com

www.industrial-auctions.com

3rd of March: Online auction packaging machinery and other equipment for the food and non-food industry in Weert (NL)

**10th of March: Online auction vegetable processing machinery and other machinery for the food industry
Maasoever Coldstore BV in Waspik (NL)**

**5th of April: Online auction machinery and inventory for the complete food industry due to reorganisation
Nestlé Deutschland AG, Herta - factory Herten (DE)**

**Viewing days:
30th of March & 31st of March**

www.industrial-auctions.com

FIVE INSPIRING NEW PROCESSING AND PACKAGING SOLUTIONS FROM GEA AT IFFA

Inspiring Food Solutions is the theme for GEA's booth at IFFA in Frankfurt (7 to 11 May 2016). Five new products, two major redesigns and a selection of the most important machines are set to inspire visitors to the show. The launches include a grinder, mixer, labeler, entry-level model of the PowerPak thermoformer and an end-of-line automation system. These are joined by the recently introduced drum coater, a continuous in-line marination system, the highly respected CutMaster bowl cutter, an enhanced twin-log slicer and a new stand-up bag format for a continuous vertical flowpacker. The latest developments to the CookStar three-phase spiral oven also receive extra attention.

New grinder, Mixer and CutMaster

First up from the Meat Treatment activity, which covers marination and preparation, is the new GEA PowerGrind 200. It is the latest development of GEA's double-screw grinders for both fresh and frozen meat. With its 200 mm diameter grinding head, it supersedes the popular AutoGrind 200 and complements the successful GEA PowerGrind 280. These robust machines are widely recognized as best-in-class for high-capacity grinding and ease-of-use. The new GEA ProMix, a development of the long-running UniMix range, offers higher performance in terms of hygiene and safety, and is available with or without vacuum and as a GEA ColdSteam version for extremely rapid defrosting. The GEA CutMaster 500 V bowl cutter, one of the mainstays of GEA's preparation equipment

range, benefits from continuous improvements and completes the meat preparation offering on the booth.

Evolving the marination process

Marination is represented on the booth with an innovative continuous in-line injection solution. Developed to boost the yield of bone-in and skin-on poultry products like chicken wings, drum sticks, thighs, legs and whole- or half birds, the GEA Evolution solution combines controlled brine injection with short massaging to optimize brine distribution. It also virtually eliminates post-packaging drip loss as well as reducing skin damage on products that should not be tumbled for long periods. The line on the booth features an Accujector 450, brine injector, MultiShakers for transport, product spreading and excess brine removal at the infeed and outfeed.

Beating the drum for homestyle breading

Homestyle breading is a fast growing trend for coating poultry products, and the GEA MultiDrum can authentically reproduce this coating technique in an automated industrial environment. The recently introduced machine was met with enthusiasm by poultry processors looking for an integrated line solution that gives the true homestyle look, feel and taste in a cost-effective way.

Three-phase spiral oven

Although not present at IFFA, the latest developments to the third-generation GEA CookStar spiral oven are highlighted on the booth.

This machine has evolved into the only three-phase cooking concept in a double spiral configuration thanks to its active 'booster' zone that forms a bridge between two large spiral zones. Its ability to use steam, hot air, roasting, smoking and drying in any combination makes the CookStar the most flexible solution for industrial cooking.

GEA DualSlicer with Interleaver

News on the slicing front is the extended performance of the recently introduced GEA DualSlicer. This slicer with two independent drives, adjustable rotor head and a 3-stage portioning conveyor slices two or four calibrated logs, or two natural shaped logs (such as cooked ham cheese, bacon and raw ham), and is known for consistent slice quality and a high capacity. The DualSlicer is very hygienically designed with perfect access from all sides, which guarantees an easy operation and profitable increase in efficiency.

Entry-level thermoformer

One of the two headliners from the packaging activity is a new GEA PowerPak configuration specially developed as a basic machine with limited functionality. The whole GEA PowerPak range has been re-defined to make it easier for customers to specify a thermoformer for a specific application. This makes packaging solutions more cost-effective by omitting functions that are not required. The latest addition is an entry-level configuration that gives smaller-scale packaging operations access to the quality and reliability of the PowerPak platform.

End-of-line automation

An example of a larger GEA PowerPak is also featured on the booth, and this model is a showcase for three important developments launched at IFFA: an enhanced self-learning, automated technique for diaset changing that requires no extra tools; a new higher capacity GEA TiroLabel labeling unit; and an end-of-line control system that significantly reduces manpower requirements. The end-of-line is one of the few remaining areas where automation has yet to deliver significant cost savings. Upstream processes are already automated whereas downstream equipment still requires a lot of people. The new GEA end-of-line control system changes this and can reduce labor costs by up to 50%. The line on the booth features a 450 mm wide PowerPak fitted with a PowerGuide lane converger and an EasyCheck to detect metal, confirm correct labelling and weigh packages. This PowerPak is equipped with the new generation TiroLabel labeler.

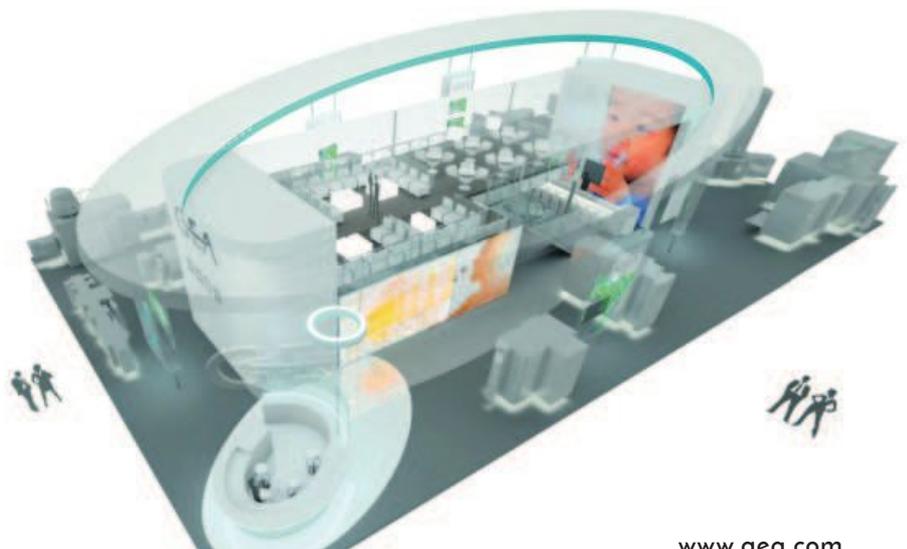
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New EasyDoy bag style for SmartPacker

A new bag style for the GEA SmartPacker vertical flowpacker called the EasyDoy will be launched at IFFA.

It will be demonstrated on a continuous operation CX400 producing flat-bottomed stand-up bags measuring 200 x 300mm. The EasyDoy looks like the popular doystyle bag, but is much easier to make and has a higher fill rate because the bag is taller and made to be filled from the top instead of from the side.



www.gea.com

INVESTMENT SEES LIMPAC RITTERHUDE REACH 100 PER CENT RECYCLED CONTENT

The installation of a third extruder at LIMPAC Ritterhude is enabling the leading European food packaging manufacturer to deliver products made from up to 100 per cent recycled content for the first time and address the growing demand for PET and rPET in north-west Europe.

For the past year, the German site has been able to manufacture mono sheet averaging 93 per cent post consumer recyclate (PCR) but the new extruder provides the site with greater capacity and flexibility to manufacture products containing 100 per cent recycled content.

In the past five years, LIMPAC has invested €9 million in new plant and equipment at its two German sites, including €3 million on PET extrusion and automation facilities in Ritterhude, in a bid to significantly increase market share in Germany and surrounding countries.

Adam Barnett, managing director for northern Europe at LIMPAC, said: "This major investment demonstrates our commitment to an important market for LIMPAC. It is vital that, as the German market continues its shift from PP towards PET, we are able to meet growing customer demand for products which are lighter, cheaper and more sustainable.

"The installation of the new extruder

in Ritterhude extends our capabilities greatly and being able to manufacture using 100 per cent post consumer recyclate is a major breakthrough for LIMPAC in north-west Europe. It will enable us to offer a wider variety of products to customers to ensure they receive the best packaging for their application."

PET and rPET is becoming increasingly popular as a packaging material across Europe due to its versatility, lightweight nature, barrier

that products manufactured by the company did not give rise to concern for a risk to human health, even when made using 100 per cent PCR.

All suppliers of post-consumer flake sourced by LIMPAC undergo a rigorous approval process to meet EFSA standards. In addition, the company carries out extraction and migration testing regularly to ensure processes are exceeding European food safety standards with packs using 100 per cent PCR.



Mr Barnett added: "As the trend towards the use of recycled plastics in food packaging grows, the challenge for plastics processors supplying the industry is ensuring that the recycled plastic is suitable for food use and free from contamination. Our customers can have complete peace of mind when choosing LIMPAC rPET that this is the case. The entire structure is food safe, visible, controlled and challenged.

and food safe properties, as well as its recyclability.

LIMPAC has invested heavily in its in-house supercleaning technology to ensure its rPET meets the most stringent food safety and hygiene regulations for food packaging. The technical committee of the European Food Safety Authority (EFSA) vetted and approved the processes employed by LIMPAC in 2013, saying

"Retailers and consumers are driving growth in the rPET market with demand for packaging which has strong environmental credentials; rPET is easily recycled and reduces carbon footprint by up to 70 per cent when compared to virgin PET. Furthermore, it offers a high quality, crystal clear material with no discolouration, boosting pack presentation for on-shelf appeal."

www.linpacpackaging.com

FEEDING FISH SUSTAINABLY WITH FLIES

BY Georgina Starmer



With the world's population ever on the increase, the demand placed on food sources, particularly protein, is already at record levels. Meat such as chicken and fish is in high demand, and this type of livestock need protein in their diet to grow.

This protein must be sourced from somewhere, and most of it comes from the seas. Poultry and fish that are intensively farmed are fed with a protein based fish meal, which is derived by many smaller aquatic creatures. The problem with this is that high quantities of these small aquatic creatures are needed in order to produce a small amount of animal feed, and this has serious implications for the long term sustainability of such a product.

Ken Stier writes in Time Magazine that in order to create 1 kg (2.2 lbs.) of high-protein fishmeal, which is fed to farmed fish, it takes 4.5 kg (10 lbs.) of smaller pelagic, or open-ocean, fish.

With around four times the amount by weight of protein going in as

coming out, the efficiency of this way of making livestock feed is poor and unsustainable, particularly as agricultural feed for farmed livestock contains around 20% protein.

The overfishing of seas globally is not a new concept, and the fishing industry is now subject to a host of control measures that affect how much fish can be caught, and there are bans on fishing in some areas.

Around a third of the global marine catch goes into products that are not for human consumption, so solutions must be found before it has any more detrimental effects on marine life and ecosystems. For natural fish stocks to ever get even close to the levels they once were, more efficient ways of getting the protein we need must be developed.

Finding Solutions in Organic Waste

AgriProtein is a company in South Africa which has come up with a sustainable solution to the world's demand for protein based animal feed.

Jason Drew, the founder and director of AgriProtein explains: "Nearly one third of the fish we take from our seas - some fifty million tonnes a year is used in our industrial agricultural and pet food industries."

AgriProtein has worked out a solution that could have a radical effect on this problem, and has developed an animal feed that does not rely on the depleting fish stock to get the protein requirements. Instead, it makes use of

something that the world has plenty of - organic waste.

It has turned the problem of the high amounts of waste that we produce into an abundant resource that can be recycled and utilised. The amount of waste going into landfill sites is a real problem that has a detrimental effect on the planet. It is now common to recycle paper, glass, plastics and metals, but it is recycling the organic waste, including sewerage, manure and blood from abattoirs that will help to make a real difference to the way we deal with waste, and the effect it has on the environment.

Mr Drew stated that "when we start to recycle these, we will be truly on the path to some sustainability for our planet."

Using Flies

AgriProtein has created a fly farm that utilises the insects' natural waste disposal qualities. They breed and grow fly larvae to process organic waste matter that would otherwise go to landfill or are costly to process.

In nature, flies lay eggs in waste such as animal carcasses or vegetation. The eggs then hatch into larvae that eat and dispose of the waste. This larvae is also the natural food of other animals such as fish and birds.

With AgriProtein, the process works just as it does in nature, but on a much larger scale. Organic waste is collected from restaurants, food factories, hotels and out of date supermarket produce. The company also collects carcasses and blood from abattoirs.

This organic waste is subject to strict quality control, is processed and blended into a formulated feed for the fly larvae. The larvae, or maggots, grow and are then turned into an animal protein feed called MagMeal™.

Mr Drew stated that “we’ve copied nature and led the process of making protein from waste nutrients profitably, sustainably and on a large scale.” The benefits of this are plentiful.

The waste gets reduced and processed naturally by the maggots, rather than it lying around in landfill sites, and the end result is a sustainable, healthy animal feed that does not rely on depleting the oceans of its wildlife. It is also quick to produce. Just one kilo of fly eggs can be turned into 380 kilos of larvae in 72 hours.

MagMeal™

MagMeal™ consists of the ground up, dried larvae. It is a brown, crumbly textured feed that contains the nine essential amino acids that contribute to growth and health, meaning it is a complete animal protein.

Research shows that animals fed with MagMeal™ gain healthy amounts of weight.

One study conducted by Ogunji et al. (2008) was to evaluate the growth and nutrient utilisation of Nile tilapia, a commonly farmed species of fish in Africa. The fish were fed with MagMeal™ instead of a commercial fish feed. The results of the study showed that the fish gained good growth and health, and that it did not

produce any stress on their systems.

The study also showed a better performance in the growth of the fingerlings when fed with MagMeal™, than when they were fed with other commercial fish food. This means that for Nile tilapia, and most likely for other species of farmed fish, MagMeal™ works as a replacement to commercial fish feed.

Not only that, it is also an affordable option when compared to the rising prices of importing other fish feeds, therefore benefiting fish farmers.

AgriProtein has raised over \$11 billion to build two commercial fly farms, the largest one being developed in Cape Town.

Each farm will consist of over 8.5 billion flies that will be used to turn organic waste into MagMeal™, designed for poultry and fish, an extracted fat called MagOil™ designed for use in pig feed, and a soil conditioner, MagSoil™.

MagMeal™ is the ideal feed for chicken and fish as their natural diets consist of feeding on the insect larvae they find as they forage, and the product has received approval in South Africa.

At the moment, AgriProtein sell small quantities of MagMeal™ locally, but the first commercial amounts will be available for sale from the end of April 2015. Full production is planned to commence in August 2015 at which time AgriProtein will make 22 tonnes of larvae, which will yield 7 tonnes of MagMeal™ and 3.6 tonnes of

MagOil™ per day. Although at this stage AgriProtein will not sell directly to the general public, sales will be provided to pre-approved buyers on a wholesale basis.

The expansion of the fly farm industry could eventually eliminate the need for trawling for fish meal, allowing the natural stocks in the seas to replenish. This would have beneficial effects on the food sources and habitats of many aquatic species.

It also relieves the pressure on agriculture, where producing protein based animal feed uses a large amount of land, water and agricultural fuel to grow crops. According to Mr Drew, this new industry is able to produce 600 tonnes of protein per hectare, compared with less than 50 tonnes of protein in an agricultural setting.

In the future, AgriProtein plans to develop around 40 fly farms worldwide, helping to solve one of the biggest environmental problems of the modern world, and also creating a solution to the need for protein.

Mr Drew explained: “The world urgently needs new and sustainable sources of protein. Fly larvae fed on existing waste nutrient sources is one of these.”

The simplicity of the concept is one that has been around for many years, but AgriProtein has researched and developed scalable ways to make it work. The farm breeds three different types of fly, the common house fly, the black soldier fly and the blow fly, and each species prefers different kinds of waste.

Getting the right farming conditions for the breeding and production of larvae took a lot of trial and error. Mr Drew explained that it took some time to find out the right temperatures, amount of light and humidity needed to breed the flies.

Now the right environment for breeding and growing larvae has been worked out, plans are in place in the future to scale up the industry. This is an exciting time for business

in the environmental sector, where the shift is made to developing a sustainable and clean future. AgriProtein is a recent winner of the WWF Climate Solvers Challenge and UN IFP Innovation Award for Africa. It is at the forefront of the developing nutrient recycling industry, and the potential benefits it has are not limited to feed production.

AgriProtein is carrying out extensive research programmes into other

uses for fly larvae, such as in the healing of livestock ailments. At the moment though, the production of a sustainable protein based livestock feed is something that could change the world, creating a better more sustainable way to feed the growing population without further depleting the seas natural resources, and improving the ways that we dispose of our organic waste. ■

www.thefishsite.com



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SUSTAINABLE AGRICULTURE NETWORK (SAN) AND GLOBALG.A.P. COLLABORATE TO REDUCE AUDIT COSTS



Since they announced their collaboration last year, the SAN and GLOBALG.A.P. have worked to identify commonalities and differences between the GLOBALG.A.P. and SAN Standard (upon which Rainforest Alliance Certification is based). This will now be used to develop tools that will help to reduce the cost and increase the efficiency of audits, resulting in improved market access for smallholders.

These tools will include combined checklists, which will enable farms to be evaluated against both SAN and GLOBALG.A.P. audits at the same time. A single auditor may be used

as long as the certification body is approved by both organizations. Although the audit process would be combined, the issuance of certificates will remain independent.

The Executive Director of SAN, Andre de Freitas, stated "we are pleased that this new collaboration will make it quicker, cheaper and easier for SAN/RA certified producers who choose to add GLOBALG.A.P. Certification. SAN is committed to finding such ways for producer organizations to benefit from new market opportunities arising from the increased demand for certified products. This is a good example of standards coming together and collaborating to put the needs of farmers first."

"We are proud to deliver our promise made not even a year ago to push forward for more collaboration," said Kristian Moeller, CEO GLOBALG.A.P. "Combining audits of standard owners that build fruitful relationships is a

major building block for the future of certification."

Technical teams from both organizations conducted an intensive comparison between the Sustainable Agriculture Network (SAN) and GLOBALG.A.P. Standards. The results show that approximately one third of the requirements of each standard focus on similar topics. These include: record keeping, trainings, occupational health and safety, housing and waste management. By highlighting any overlap tools can assist farmers who have already achieved either GLOBALG.A.P. or SAN Certification to obtain both certifications.

In addition to having developed certification schemes to promote sustainable agriculture, the SAN/ Rainforest Alliance and GLOBALG.A.P. also share a commitment to the continuous improvement of life in rural communities around the world.

www.globalgap.org

CALL FOR ECONOMIC VIABILITY FOR SUSTAINABLE FARMING

BY CHRIS HARRIS



Economic viability and environmental sustainability are the major issues facing British farming.

Speaking at the Oxford Farming Conference, the shadow agriculture secretary, Kerry McCarthy said that

too many farmers are struggling to make a decent living.

Or, she said, they are caught in a Catch 22 situation relying on basic payments but struggling with bureaucracy and paperwork.

"From my perspective, one of the biggest problems is that you are being forced to operate in a broken market," she told farmers at the conference.

"If the market was working, our dairy farmers would not be forced to accept a price below their cost of production or watch helplessly as prices fall still further.

"Pig farmers would not judge a good day by how much they managed to minimise their loss when selling to the supermarkets."

However, Ms McCarthy said that in a global market much is beyond the control of governments and the farming sector.

She said the Chinese market has contributed to falling commodity prices and the Russian trade ban has hit prices across the whole of the EU.

"We can look at how power is distributed within the market and the unequal relationships between producers and

purchasers," Ms McCarthy said.

"Supermarket price wars are great for the customers, but it is too often the farmers who are paying the price."

Ms McCarthy called for the role of the Grocery Code Adjudicator to be strengthened, with her role covering the whole of the supply chain from farm to checkout.

And she said the GCA needs to be able to initiate her own investigations.

The shadow environment secretary called for more British produced food to find a place on domestic supermarket shelves and she said that it was wrong that farmers had to look to export markets because they could not sell their produce at home.

"In 2014 we imported £8.7 billion of fruit and vegetables and £6 billion of meat," she said.

"We need to promote home advantage, not least by improving food labelling so customers can choose to buy British or local produce.

"With the UK's food self-sufficiency down to 60 per cent from 75 per cent and our imports of indigenous food increasing, we need to work with the supermarkets to make sure British food is on the shelves."

Ms McCarthy said that the farming sector could be made more competitive by ensuring basic payments are not delayed.

She also called for a stronger connection between the consumer and the producer - bring the "fork closer to the farm".

"With the dairy industry, for instance, I think a lot of the public is uneasy about the idea of their milk coming from a mega dairy - wanting assurances on animal welfare and environmental sustainability," she said.

She said support has to be given to the farming sector to boost the role of research and development to reduce farmers' costs and increase competitiveness.

She said there needs to be more

research to improve yield consistency and breed-in resilience, a more scientific approach to the threat of plant and animal diseases.

However, she added that there is no point in improving the industry's competitiveness and finances if sustainability is ignored or action is not taken to reduce the costs associated with environmental degradation.

"For better and worse, farming and the environment are inextricably linked," Ms McCarthy said.

"It is a connection that is all too often overlooked, although not by the industry itself."

She added: "Our changing climate threatens your crop yield, your water supply and your land."

Ms McCarthy also called for a leaner, meaner and greener Common Agricultural Policy and also reforms to stop farmers being penalised when they are managing the land responsibly.

www.thepoultrysite.com

WHAT STRATEGIES ARE NEEDED TO FEED A GROWING POPULATION?

BY CHRIS HARRIS



Sustainable intensification strategies to give greater production but with a lower environmental impact will be necessary to meet the rising demand for food, as the world population grows and the effects of climate change are felt.

Dr Bram Govaerts, the associate global director of CIMMYT's Global Conservation Agricultural Program,

giving the Frank Parkinson Lecture at the Oxford Farming Conference, said the strategies had to be based on sound agronomy, crop science and new technologies tailored to the needs of small farmers whose resources are constrained.

The strategy must be able to produce more food on less resources and the consumer of the future will want to know that the piece of meat or food being eaten has been produced with high welfare, no deforestation, no child labour and a low carbon footprint.

Dr Govaerts said that risk strategies need to be formed to mitigate the effects of different weather and climate conditions such as the drop in wheat production caused by the effects

of El Niño, or crop losses due to floods in the US.

He said that global markets and banks do not show concern because of price rises for maize or rice or a humanitarian crisis, but when there are stock market losses.

However, he told the conference that more needs to be done to develop sustainable farming practices to fight hunger and poverty across the developing world.

Research and energy needs to be focused on developing high yielding, disease resistant crops as well as agronomic innovation to ensure that the best use is being made of poor resources.

"Growing improved crops without agronomy is like running a Ferrari on a gravel road," Dr Govaerts said.

"You are not going to be able to realise the full potential of the crop, or the engine, if you will, without sustainable farming practices."

He added: "Almost every farmer in Mexico and other countries around the world has a mobile phone.

"Why not develop an application that helps these farmers estimate optimal fertiliser doses for their plots of land?" He said there was a need to connect research back to the farmers' efforts.

There is a need to understand the different agricultural and farming processes around the world and to develop systems that are appropriate and easy to use for farmers in the developing countries.

"Sometimes the answer to food security is not to produce more but to produce more efficiently and to reduce food losses," said Dr Govaerts.

He said that to help with this, his organisation CIMMYT has developed 16 prototypes of smart machinery adapted to different scales, from consumption to commercial agriculture.

The organisation has also developed postharvest technologies to reduce losses in places where farmers have little or no access to storage facilities.

"He said the action that is being taken by organisations such as his to develop new technologies and sustainable practice needs to be backed by governments and public bodies.

"We have to prepare the terrain and invest in small and family farming to increase agricultural productivity and market access across the world to achieve the production gains we need to feed a growing and wealthier population," he said.

www.thepoultrysite.com

EGG INDUSTRY IN TRANSITION TOWARDS BETTER SUSTAINABILITY



"The egg industry in the US and internationally is in transition," said Dr Joy Mench, from the University of California Davis, during her presentation at the Animal Agriculture Sustainability Summit held during the 2016 International Production & Processing Expo (IPPE) in Atlanta.

Dr Mench's presentation, "The Sustainability of the Layer Industry - Layer Hen House Research - The Coalition for a Sustainable Egg Supply," focused on the research the Coalition for a Sustainable Egg Supply conducted on a commercial scale to evaluate alternative hen housing.

Dr Mench provided the results of the studies completed on three types of hen housing systems - conventional cage system, enriched colony system and cage-free aviary.

The studies evaluated the environmental impact, food safety, animal health and animal well-being of all three housing systems, with the bird type remaining the same in all three systems.

In her presentation on the "Carbon Footprint Toolkit for Poultry and Egg Producers," Dr Claudia Dunkley, University of Georgia, reviewed the toolkit's capability of improving production for poultry and egg producers.

Dr Dunkley's discussion centred on mechanical and non-mechanical farm emissions, of which she provided examples.

"The study was done on a house-by-house basis. The older the house, the more emissions it produced, while solid wall houses had fewer emissions," stated Dunkley.

The toolkit is in a spreadsheet format and is designed to make calculations for broiler, breeder and pullet farms, with the toolkit providing recommendations for improvements. However, the toolkit still has limitations and cannot estimate emissions from commercial layer farms, though it can be expanded to do this.

Dr Greg Thoma, University of Arkansas, gave a presentation on "A

Retrospective Analysis of US Poultry Production - A 50 Year Comparison of Meat Bird Industry Sustainability."

Dr Thoma compared lifecycle assessments of US broiler production from year 1965 and 2010, with 2010 now serving as a benchmark for the industry.

Environmental impacts from the production and consumption of goods and services were evaluated with the main goal being "to find hotspots in the supply chain to improve performance in the industry, on farms and hopefully to the whole sector," said Dr Thoma.

Data on housing, manure management, the environment and bird characteristics were gathered. Among the results found in the comparative analysis were changes in agricultural production including feedstuffs, ration composition, housing, lighting and genetics.

Dr Thoma noted the total amount of chicken produced annually since 1965 has increased more than five times. While the footprint for the entire poultry meat industry has increased due to consumer demand, the impacts per pound of chicken have decreased over the period of 1965 to 2010.

www.thepoultrysite.com



The largest food-processing plant in France celebrates its 20th edition

To celebrate this event in 2016, the most important exhibition for the food-processing sector is planning an edition rich in innovations.

With its 3 divisions (Ingredients, Equipment & Processes, Packing & Conditioning), CFIA will enable its 18,000 expected visitors to discover new suppliers and partnerships, benefit from expert advice, find customized services and products, and identify the most innovative solutions showcased by the 1,450 exhibitors.

To accommodate all of this, CFIA is expanding, with a new lobby and a reorganization that will better showcase its unique offering. In particular, the area devoted to Ingredients & Intermediate food products will increase by 30%.

This 20th edition will be enriched by a number of special events held over the three days.

.....

THE ESSENTIALS, like **Work In Agro**, the **Trophées de l'Innovation** (Innovation Awards), **the conferences**, **the factory of the future** ...



AND THE NEW EVENTS THAT WILL ENRICH CFIA 2016'S OFFER:

CLUB RMD

RMD

This think tank on innovation will bring together professionals who focus on knowledge overlaps between Marketing and R&D. To support this approach, demonstrations and tastings will be offered at the dedicated space.

CONCOURS IMAGINE (Imagine Contest)



How do students imagine their future professions? This new contest will enable young people in training in the food-processing sector to express the vision they may have of their future careers through communication / creation / a promotional tool.

SANTÉ AU TRAVAIL (Occupational Health) space



Carsat Bretagne will propose forums and discussions regarding occupational health and risks.

EHEDG



EHEDG France is turning 10 just as CFIA is turning 20, and to celebrate the occasion, the French branch of the European Hygienic Engineering and Design Group will discuss the varied professions in the food-processing sector in a dedicated space.

20 YEARS OF INNOVATION



In partnership with RIA, CFIA will present data on the 12 most significant innovations of the past 20 years.

WEB TV



Live news from the food-processing sector! Debates, studio discussions, round tables ... Web TV is a genuinely interactive platform that enables visitors to follow live discussions on the major issues facing the food-processing sector. The discussions will be moderated by professional journalists accompanied by leading figures and experts in the sector.

Read more about it at: www.cfiaexpo.com

IFFA 2016: GREAT PERSPECTIVES FOR THE TOP EVENT OF THE MEAT SECTOR



THE SECTOR IS OPTIMISTIC WITH HIGH EXPECTATIONS OF ITS LEADING TRADE FAIR

IFFA - The No. 1 for the meat industry - is the meeting place for the entire meat sector. This year, Messe Frankfurt expects some 960 exhibitors from around 50 countries, including all market leaders, to present their top innovations at the fair. In the fully booked-up exhibition halls, they will show new products, technologies and solutions for all stages of the meat-processing chain on around 110,000 square metres of exhibition space. In the region of 60,000 trade visitors from over 140 countries are anticipated.

Wolfgang Marzin, President and Chief Executive Officer (CEO) of Messe Frankfurt: "IFFA has been held in Frankfurt for 45 years and, during this time, has developed into the leading international trade fair for the sector. It is and will remain the most important innovation platform for investment goods along the entire process chain. The majority of our exhibitors, who include all world-market leaders, launch their innovations onto the international market at IFFA. Together with our partners, I am delighted to once again announce the top event for the meat sector."

Richard Clemens, Managing Director of the Food Processing and Packaging Machinery Association of the VDMA, conceptual partner of IFFA: "For machinery manufactures, IFFA is the most important trade fair. With its clear focus on meat, it offers not only an unrivalled spectrum of solutions but also a great concentration of experts. There, the spotlight is on innovations and trends oriented towards the needs of the market, which generate decisive impulses for shaping the future. The high degree of internationality at IFFA shows that Frankfurt is the firmly established meeting place for the global network of the meat industry."

Top levels of internationality on the exhibitor and visitor sides

The figures confirm that IFFA is top in terms of both exhibitor and visitor internationality. 57 percent of the companies taking part as exhibitors in 2013 were headquartered outside Germany. The top ten exhibitor nations excluding Germany were Italy, the Netherlands, Spain, the USA, France, Denmark, Austria, the United Kingdom, China and Poland. With over 400 companies, the biggest exhibitor contingent came



IFFA



IFFA 2016

The international trade fair for meat industry

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from Germany. The proportion of visitors from abroad was 61 percent in 2013 with trade visitors from the industry, retail trade and butchers' trade taking advantage of the broad range of products and services at IFFA.

One of the most important groups of visitors at IFFA comprises decision makers from the butchers' trade. Heinz-Werner Süss, President of the German Butchers' Association (Deutscher Fleischer-Verband - DFV): "IFFA 2016 is the unrivalled event of the year for the meat sector and the excitement in the butchers' trade is nearing its climax. IFFA is of vital importance to us on a variety of levels. Naturally, it is a comprehensive source of information for our members - nowhere else is it possible to find out more about the latest developments. However, it is also the meeting place for the whole sector. With all its events for the butchers' trade, with its important competitions and with its innumerable new products, this year's IFFA will once again underscore its position as the world's leading trade fair for the entire meat sector. We are very much looking forward to it."

Compact and transparent layout

The restructured and enlarged layout at IFFA 2013, incorporating Hall 11 for the first time, was a great success and will be retained in 2016. Thus, visitors will be able to see the complete spectrum of machines and plant in the western section of Frankfurt Fair and Exhibition Centre, in Halls 8, 9 and 11. Key players from the packaging, supply facilities, measuring and weighing technology segments will be making their presentations on the two floors of Hall 11. Leading exhibitors from the processing and slicing segment are located in Halls 9.0 and 9.1 while the focus in Hall 8 is on processing.

In Hall 4, in the eastern section of the Exhibition Centre, visitors will find suppliers for packaging materials and 'Sales - everything for butchers' shops', as well as top exhibitors from home and abroad with ingredients, spices, additives and casings.

Top themes at IFFA 2016

The global meat industry is a dynamic growth market. Populous countries of Asia, Latin America, East

Europe and Africa are characterised by rising incomes and, in many cases, a corresponding increase in meat consumption. Therefore there is a mounting demand from these countries for modern and efficient technology for processing meat and meat products. Besides quantity, quality is playing an increasingly important role as demands on product safety, quality and traceability rise. In western countries, the focus is on productivity optimisation through energy efficiency, high output, straight-forward cleaning processes, greater automation and sustainability.

In the butchers' trade, the key to future success is adaptation to new consumer eating habits and trends, such as convenience foods, walking food and supplementary products for butchers' shops. Moreover, regionalism plays an important part in the buying decision. Investments in energy efficiency and the simplification of working processes, as well as improvements in hygiene on both the sales and production sides, are also important themes in the sector.

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ANUFOOD EURASIA IS GATHERING SPEED

Diversity, internationality and quality for the Eurasian region: following the successful premiere in 2015, the second edition of ANUFOOD Eurasia is taking place in the Turkish metropolis of Istanbul from 14 to 16 April 2016. Once again at home on the modern grounds of Tüyap Fair, Convention and Congress Center İstanbul, the trade fair brings together international and national exhibitors with the most important multipliers and purchasers of the entire Eurasian region from the areas of trade and catering, as well as with those involved in the import and export of food products. In the process it covers all segments surrounding the theme of food & beverage, with a focus on the Eu-rasian market. All of the signs are good for a successful second edition of the professional business platform. The organisers Reed Tüyap and Koelnmesse are indicating a high level of interest on the part of exhibitors, both from Turkish and from international companies, including numerous well-known manufacturers and organisers of country pavilions.

The German-Turkish joint trade fair project ANUFOOD Eurasia provides access to one of the world's largest growth markets for food and beverages: Eurasia. Trade visitors from Turkey, the bordering countries

of the Commonwealth of Independent States (CIS), from southeastern Europe and from the Middle East and North Africa Region (MENA) already made use of the premiere in 2015 to comprehensively inform themselves about the offerings of international manufacturers. Taking the leading Anuga trade fair as its model, ANUFOOD Eurasia depicts the entire food sector in all its diversity, from fine food, frozen food, meat and dairy products, chilled and fresh food through bread, baked goods, sweets, beverages, organic food and Halal products to services & RetailTech, associations, organisations and IT service providers. In addition to a comprehensive presentation of products, the event also offers a high quality and professional supporting pro-gramme oriented towards a focus on the mediation of trends in the target markets, as well as im-port and export know-how. This should also intensify exchange between the international exhibitors and trade visitors via seminars and discussions on the Turkish food market. In preparation of the 2016 event Koelnmesse offers a special service to their customers: the products of the international companies to be exhibited can be checked for possible import restrictions to Turkey and will receive feedback on concrete

import possibilities in advance of the trade fair. During the show days, once again offered is the service of the international Hosted Buyers Programme, as well as matchmaking with the relevant Turkish and regional supermarket chains at the trade fair, which met with a very positive response from exhibitors and trade visitors at the premiere event.

The premiere of the trade fair in May 2015 was characterised above all by its successful mix of in-ternationally acting companies and regional big players, as well as innovative newcomers, and un-derlined the significance of the region for the food industry. Where 42 percent of the 212 exhibitors of the premiere event already came from abroad, ANUFOOD Eurasia plans a renewed growth in the number of countries participating for 2016. Bulgaria, Germany, Iran, Italy and South Korea pro-vided the most exhibitors at the premiere. In addition to this, companies from Denmark, Greece, Canada, Great Britain, Lithuania, Moldova, Austria, Pakistan, Poland, Saudi Arabia, Spain, Tunisia, the United Arab Emirates and the USA presented their products and services in Istanbul.

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