

International Poultry Production

Volume 32 Number 3 (2024)

Practical information for progressive poultry professionals

FEATURED IN THIS ISSUE

**Hot Weather
Management and
Nutrition for Breeders**

**Caring for Chicks
Between Hatch and
Placement**

**SOLUTIONS FOR
POULTRY PROCESSING**
A Supplement for all
Poultry Processors

**Do not Ignore
Mycotoxins you Need
to Manage Them**



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CONTENTS

06 Hot weather management

Practical advice for managers to reduce the effects of heat on flocks by modifying husbandry and nutritional practices.

09 Caring for chicks

Focusing on correctly processing, storing, and transporting chicks is very important to producing the best-quality day-old chicks.

10 Options for egg handling

A look at some of the latest technology options from some of the top companies in the world.

13 Processing Supplement

This supplement is carried as a service to poultry producers around the world.

20 Mycotoxins, you need to manage them

Mycotoxins impact productivity in a variety of ways including impaired growth, poor feed efficiency, reduced productivity, impaired eggshell quality and increased embryonic mortality, significantly impacting producer returns.

21 Focus on Research

Catch up with some of the latest research from the poultry world.

23 The Latest News from Around the World

Showcasing some of the latest advancements and changes in the industry today.

Editor's Perch

Is vaccinating against Avian Influenza alone enough to curb the spread of this highly pathogenic disease in poultry?

The epidemiology of avian influenza is continually evolving and changes in its patterns of spread required the European Food Safety Authority (EFSA) to review existing prevention and control strategies.

This recent report by the EFSA recommends the use of vaccination but also recommends close inspection for the early detection of Highly Pathogenic Avian Influenza outbreaks in vaccinated farms saying it is extremely important because the avian influenza vaccination cannot completely immunise poultry alone but can be an effective complement to other control strategies.

What were the outcomes and their implications on the poultry industry?

Well it turns out it comes down to different combinations of testing type, sample type, sample size, and sampling interval across poultry species creating a range of effective surveillance options during emergency vaccination as well as showing freedom from the disease following preventive vaccination. The EFSA have said the surveillance

strategy should be selected according to the country's specific circumstances and resources.

To effectively contain the disease, protect the economic sustainability of the poultry industry and reduce potential risks, all available science-based disease control tools should be considered. A wider use of vaccination will encourage research innovation and in turn improve the quality of vaccines available.

However some countries are currently refusing to buy from countries practising vaccination for fear of importing the virus into their own territory.

The World Organisation for Animal Health say that poultry vaccination can no longer be excluded from the available alternatives and should be considered as a complementary tool, and when scientifically justified, offers advantages including the prevention and control of outbreaks in vaccinated domestic bird populations resulting in reduced virus circulation, reduced economic losses both direct (bird deaths) and indirect (mass culling and trade disruption), and reduced environmental impact by reducing the risk of spill over to wild animals. ■

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Attention to detail
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The banner features a collage of farm-related images: a cow, a pig, a chicken, a man with a tractor, and a bar chart. Social media icons for Facebook, LinkedIn, X, Instagram, YouTube, and RSS are also present.

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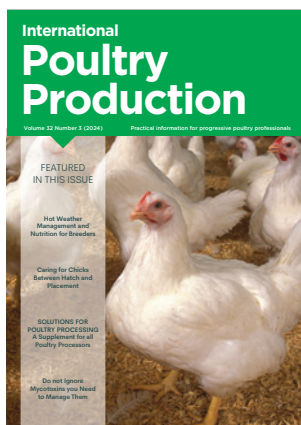
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World Focus

An executive summary of key international issues

KYRGYZSTAN

Mobile poultry farms

Most of the population in Kyrgyzstan live in rural areas and so small-scale agriculture and animal husbandry is often the main source of food and income. The Minister of Water Resources, Agriculture and Processing Industry has been supporting the development of poultry farming in rural areas and has said that farmers will be allowed to earn over 50,000 Soms each month by producing eggs using a mobile poultry farm with modern equipment. There is currently special importance being given to the processing industry and ways to improve the agricultural sector in Kyrgyzstan.

SCOTLAND

Consultation on laying hens

In 2012 the use of battery or barren cages to house laying hens for egg production was banned across most of the United Kingdom. As of February 2024, over 1.1 million hens were housed in enriched cages in Scotland. Now a consultation has been launched with a view to banning the use of enriched cages, which offer greater room to nest, roost, scratch and rest than the previously banned cages. Views will be sought on phasing out the use of these enriched cages and to decide how laying hens will be protected in the future.

UNITED ARAB EMIRATES

Poultry meat imports to meet domestic demand

The United Arab Emirates is currently facing a shortage of poultry meat despite economic growth post COVID-19. The country's domestic production cannot keep up with demand from its population resulting in the country relying heavily on imports from other countries to ensure a steady supply of this essential protein source. And the USDA have forecasted that imports in 2024 will rise further by almost 3%. The USDA's report shows the need for continued cooperation between the United Arab Emirates and other countries to ensure a steady supply of poultry products.

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Hot weather management and nutrition for breeders

This article provides practical advice for managers to reduce the effects of heat on flocks by modifying husbandry and nutritional practices to improve bird comfort and reduce the impact on flock performance.

by Marcus Kenny,
Aviagen Turkeys Ltd
www.aviagenturkeys.com

Thermoregulation is the ability of birds to maintain their body temperature across a range of environmental temperatures. Turkeys use a variety of physiological and behavioural mechanisms to maintain body temperatures (see Table 1). The laying performance of female turkeys can be impaired by house temperatures above 20–25°C. Egg size and shell quality can also be affected by high house temperatures. Insulation to prevent solar heat gain will reduce the total amount of heat that has to be removed from the house. Evaporative cooling can be effective in reducing house temperatures in dry climates. Elsewhere, the benefits of increasing air speed at bird level can be used to promote heat loss from the birds. Airspeed can be increased by providing vertical or ceiling-mounted circulatory fans (1 fan per 120m² floor space, spaced 10–15m apart). These fans can be successfully used in both fan-powered and naturally ventilated houses. Egg production is often improved



when there is a difference of at least 10°C between day and night temperatures. Maintaining this temperature difference is particularly important in hot climates to help control broodiness. In fan-powered ventilation systems, this can be difficult to achieve especially in areas where high humidity occurs at night and evaporative cooling cannot be used. In well insulated naturally ventilated houses, it is also important to ensure that the ventilation rate at night is sufficient to remove heat accumulated during the day. The effect of high temperature can be exacerbated by high humidity. Birds which are not used to warmer conditions may find it more difficult to adjust to hot weather. In regions where hot summers are common, bird housing should have already been designed with features to minimise the likelihood of heat stress.

Ventilation
Increase ventilation rates and lower thermostat settings at cooler times of the day to reduce latent heat and allow birds to recover from hotter conditions. Ensure all fans are in working order, belts are

tightened and fan housings are kept free of dust. Minimise obstructions which may reduce airflow: trim vegetation around the sheds, clean vent openings to remove dust accumulation, and keep screens and light baffles clear of dust and feathers. Direct hanging fans so air flows across the birds. Air movement at bird level has a cooling effect by removing body heat from the birds. Fully functioning and properly set alarm systems are essential in hot weather. Take care when altering alarm system settings to ensure they are appropriate for the difference in day and night temperatures. Separate day and night alarm settings may be required. Test life-support systems before placement and weekly thereafter. Check alarm systems, test and run automatic generators and check emergency ventilation (curtain drops etc.).

Evaporative Cooling
• Test ALL fogging and evaporative cooling systems before use each summer.
• Fogging/misting nozzles can become clogged; hoses and pipes can become cracked. Depending on the system these need to be kept clean/dry to prevent a high microbiological load being spread onto the birds when starting to use them.
• Dripping nozzles will reduce mist onto birds, decrease the cooling capability of the system and create wet spots. Watch for drips and repair as needed.
• Fogging systems should be run at service technician recommendations on temperature and timer settings.
• Check egg storage conditions.

Water
• As water consumption doubles at temperatures above 30°C, available drinker space should be correspondingly increased in climates with high ambient temperatures.
• Monitoring daily water consumption will indicate potential problems.
• Header tanks should be situated within the house to ensure the water tanks are not exposed to heat from direct sunlight.
• Ensure all drinkers are in working order. Adjust drinker height and water depth to ensure good access to water.
• Ensure free access to cool water throughout the shed by providing sufficient drinkers for the number of birds being grown. Extra drinkers may be required in hot weather.
• Cooling water to lower temperatures will also assist the bird's thermoregulation. Ideally, water should be cooled to below 25°C; levels over 25°C will result in reduced water intake. Water can be cooled by flushing water lines, or altering water lines to run along the base of cool pads.
• Consider using electrolytes to reduce stress on birds at key times. Look for electrolyte packs with stabilised vitamin C.
• Excessive heat (>85°F/29°C) – run electrolytes during daylight hours and fresh water overnight.
• Moving birds to laying farms – run electrolytes for 24 hours before moving.

Work Schedule
Avoid handling or moving birds during the warmest time of day. If required, events such as bird movements, weighing, vaccination, re-bedding/litter tilling etc. should be done at cooler times of the day. Avoid birds becoming crowded.

Bird Condition
Ensure bird body weight and condition are optimal before the onset of hot weather, this will ensure the hen has adequate reserves when feed intake is compromised. This is achieved by ensuring the birds are in a positive body weight

Table 1. Physiological and behavioural mechanisms.

Methods of heat loss	Behavioural and physiological actions
Radiation – loss of heat by radiation to cooler surrounding surfaces.	Seeking shade/cooler areas.
Convection – heat loss via natural rising of warm air.	Reducing activity.
Conduction – heat transfer by contact with a cooler surface.	Panting.
Evaporation – heat loss from respiratory surfaces.	Spreading feathers.
	Vasodilation.
	Reducing feed intake.

trajectory from 22 weeks to lighting up, the feed density needs to be adjusted if weight gain is not keeping to target.

Eggshell Quality

As birds hyperventilate during heat stress, there is an increased loss of CO₂ gas via the lungs. Lower CO₂ in the blood causes blood pH to elevate or become alkaline resulting in a condition called respiratory alkalosis.

Higher blood pH results in reduced calcium and carbonate ions transferred from the blood to the shell gland (uterus) resulting in thin, weak egg shells. Increasing the amount of calcium in the diet will not correct the issue, however, restoring the acid/base balance through supplementation with potassium chloride or sodium bicarbonate has been shown to improve the bird's tolerance to heat stress.

Feed physical quality

Feed physical quality can have a significant effect on how the bird deals with hot weather conditions. Good feed physical quality allows the bird to consume the feed efficiently without expending an excessive amount of energy. Poor feed physical quality tends to have the opposite effect.

The bird expends more energy and generates heat trying to consume the feed it needs, this heat becomes an added burden on a bird which is already experiencing heat stress. Providing optimal feed form, consistently, will also support compensatory feed intake during the cooler periods of the day or night.

Nutrition

Breeder nutritional strategy should be adjusted for hot weather.

Feed consumption

Closely monitor feed consumption of the flock during hot weather; feed intake can be reduced by as much as 30% during hot conditions. Adjust the diet nutrient specification levels to ensure intake of key nutrients is maintained. The critical nutrients are digestible amino acids, energy, calcium, sodium and phosphorus. sodium and phosphorus.

Formulation approach

Energy contribution from starch has a higher heat increment of feeding – heat associated with digestion – per unit of energy compared to lipid (fat). Increasing the energy contribution from oil addition to the diet will reduce body heat production and reduce the heat burden on the bird.

Insufficient digestible amino acid intake is one of the main reasons for productivity loss during hot weather, however excess crude protein supply should be avoided. Metabolism of excess dietary crude protein involves significant energy expenditure by the bird to deaminate excess nitrogen.

Minimising excess crude protein reduces the metabolic load on the bird during heat stress, reductions in dietary crude protein by as little as 0.5% have been associated with improved production during hot weather.

Proteins derived from animal sources have higher heat increment values than vegetable protein sources.

Formulating to digestible amino acids rather than crude protein is a means of avoiding excess crude protein intake by the bird. There is also evidence that formulating to an ideal amino acid profile results in more efficient use of amino acids in warmer environments. Higher arginine-to-lysine ratios are associated with improvements in heat tolerance. The bird also excretes more electrolytes during hot weather, higher sodium levels may be required (increased by 0.02% to 0.03%). Due to the decrease in feed intake during heat stress the intake of vitamins and trace minerals is also reduced. Use of higher levels of vitamins, provided as a 'booster' pack, can be fed at strategic periods.

Try implement the dietary changes ahead of the hot weather.

It is preferable to increase the micronutrient intake by the bird before the onset of heat stress and maintain intake throughout the hot weather period. It is useful to quantify the degree of reduction in feed intake during the period of stress and calculate the overage of micronutrients to compensate for this reduction.

A 'SUMMER' FEED FORMULA SHOULD INCORPORATE:

- Compensate for reduced feed intake.
- Decreased crude protein – use vegetable protein sources.
- Formulate to digestible amino levels.
- Heat increment value of fat is lower than carbohydrate and provides more of a 'cooling effect' on the bird – supplement the diets with fats/oils.
- Use of elevated levels of key micronutrients – vitamin and trace elements.
- Optimise feed physical quality to support efficient feed intake.

Heat generates free radicals like O●- and HO● which may harm cell membranes by inducing lipid peroxidation of polyunsaturated fatty acids within the membrane. These reactions produce heat and contribute towards failure of thermoregulation and increase body temperature during heat stress. Some vitamins act as antioxidants preventing the harmful effects of free radicals.

The key vitamins to consider are E, A, C and B-Complex. All of these vitamins are considered beneficial to the bird during heat stress conditions and the immune system especially when used in combination.

Trace minerals provided in an organic form are considered more bioavailable than inorganic forms. Organic forms of zinc, copper, manganese and selenium are the key trace elements to consider.

An example of a nutrient specification for a summer breeder diet compared to a standard breeder diet is shown in Table 2.

This specification is suggested in areas with very hot summers with

consistently high temperatures during the day and night.

Additives

A number of additives have been shown to assist in reducing the effects of heat stress. Consult local nutritional and veterinary practitioners regarding local use.

Aspirin (acetylsalicylic acid) is considered an anti-heat stressor through its effect on increasing vasodilation and blood flow to the body's extremities. A combination of acetylsalicylic acid, ascorbic acid, potassium chloride and sodium bicarbonate has been shown to prevent heat stress related depression in performance.

Betaine has osmotic properties which help to maintain homeostasis of the body, addition of 2kg/MT of feed has been shown to have benefits on egg production and egg shell quality under heat stress.

Phytochemicals such as lycopene and resveratrol elicit antioxidant effects by either down regulating pro-inflammatory responses or up regulating anti-inflammatory responses.

Table 2. Summary of nutrient specifications for a standard and hot weather breeder diet.

		Standard	Hot Weather
Temperature Range	°C °F	21 – 32 71 – 90	>32 >91
Energy			
Kcals/lb		1280	1316
Kcals/kg		2820	2900
MJ/kg		11.8	12.20
Digestible Amino Acids			
Lysine (%)		0.74	0.84
Methionine (%)		0.37	0.42
M+C (%)		0.61	0.67
Tryptophan (%)		0.16	0.17
Threonine (%)		0.53	0.57
Arginine (%)		0.77	0.87
Calcium (%)		2.80	2.90
Available Phosphorus (%)		0.34	0.37
Sodium (%)		0.18	0.20

KEY POINTS

- Adjust nutrient specification levels to ensure sufficient intakes of key nutrients, vitamins and minerals.
- The diet formulation should focus on reducing heat associated with digestion.
- Consider the use of anti-heat-stress additives.
- Feed physical quality is important to maintain intake and reduce heat stress.



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Caring for chicks between hatch and placement

Focusing on correctly processing, storing, and transporting chicks is very important to producing the best-quality day-old chicks.

by Eduardo Costa, Hatchery Production Director, Cobb South America
www.cobb-vantress.com

Newly hatched chicks cannot fully self-regulate their body temperature and need an environment with the correct ventilation to provide sufficient oxygen that helps them maintain a thermo-neutral body temperature.

Any stress, even for short periods, can harm broiler performance.

From the moment the chicks are dry inside the hatcher through the first hours on the broiler farm, internal body temperature should be maintained at 104°F to 105°F (40°C to 40.6°C). Chick body temperature can go up very quickly, and once the birds are hot, it's difficult to cool them back down.

When body temperatures get close to 106°F (41°C), the birds start to pant as they try to lose the excess body temperature. They lose five times more moisture by panting than with regular breathing, leading to dehydration.

Overheating is the biggest cause

of dehydration for chicks. Also, panting increases relative humidity in the environment, making it more difficult for the birds to exchange heat by evaporation. When the chicks are hot, they spread their wings, get very noisy, and become lethargic.

When the room temperature is too low or there is too much draft through the boxes, the chicks will huddle, trying to control body temperature.

Pulling out green chicks (early pullout) or after spray vaccination are the moments when chicks are most susceptible to chilling. Besides being a contamination source, wet chick boxes can also chill the other birds. Make sure the boxes are clean and dry at pullout time.

The temperature inside the boxes should be maintained at 90°F (32°C), but that temperature may be from 11°F to 22°F (6°C to 12°C) higher than room air temperature.

This is why it's so important to keep space for airflow between the stacks of boxes. As a rule of thumb, there should be enough space to walk between the stacks of boxes.

Low relative humidity will also accelerate dehydration.

Humidity cannot compensate for moisture loss, and if it's too high, chick heat loss by evaporation is limited, causing more heat stress. Keeping the relative humidity



During transportation in the trucks, do not overload the truck. When unloading, do not open the doors facing the wind.

around 65% is best to maintain chick quality and welfare. Chick transporters should provide a minimum ventilation rate of 20 CFM (34m³ per hour) per 1,000 chicks in the wintertime and double this in the summertime.

Some trucks depend on movement to ventilate the interior, but these trucks do not ventilate well in heavy traffic or when stationary.

Ideally, the trucks should have mechanical air intake with an air preparation chamber (for temperature and humidity) and exhaust fans should be able to maintain the correct amount of oxygen and temperature.

As in the processing and holding rooms, the temperature inside the boxes should stay at 90°F (32°C) and relative humidity should stay at 65%.

The floor of the truck body needs to be very well insulated to prevent heat accumulation in the truck, especially on the bottom boxes.

Drivers must be specialised and committed to the care of the day-old chicks through good animal husbandry and welfare practices.

Minimum stocking density should be 3.3in² (21cm²) per chick, with lower chick concentration during extremely hot

weather and/or long-distance trips (check with local regulations as some areas legislate chick density).

Upon arrival at the farm, face the vehicle into the prevailing wind to prevent wind chill on the chicks during unloading.

The birds should go straight to the brooding area and have immediate access to feed and water. If doing a quality check and count sample, this needs to be done simultaneously with unloading by trained personnel.

Holding the birds in the boxes inside the brooding area will quickly lead to overheating. During unloading, count the number of chicks dead on arrival (DOA) and observe if this mortality is evenly spread through the truck or is concentrated in spots. Then provide immediate feedback to the driver.

Chick behaviour is one of the best tools to evaluate climate conditions and bird comfort. The chicks should be calm, breathing quietly through their nostrils with little noise, and evenly spread in the boxes.

When released in the broiler house, the birds should be active and spread evenly, looking for water and food calmly. ■

If climate conditions are good and chicks are comfortable, they should be calm, breathing quietly through their nostrils with little noise, and evenly spread in the boxes.



Options for



Reduce egg breakage and annual loss

Aagrrrii have released a new innovative sensor technology, CracklessEgg which promises to reduce egg breakage rates and significantly enhance productivity.

aagrrrii.com

CracklessEgg is an invaluable tool for the egg industry. Egg breakage is a persistent challenge with financial risk that many farms continually face. By offering a practical and effective solution,

It stands as the easiest and most efficient method to lower annual

loss due to egg breakage, regardless of flock size.

The accompanying new app that is available on Google Play and the App Store will make it easier for farms to access information from the CracklessEgg sensor.

With the app, CracklessEgg provides reliable data on egg handling processes, so farmers can calibrate equipment and transportation.

CracklessEgg sensors are durable, heat and water-resistant, and tailored to work in various farm environments.

Individual transport solutions for eggs

Lubing produces egg conveying solutions for all structural requirements and plant sizes.

lubing.com

Exceptional quality, reliability and performance for many years of trouble-free operation. With over 40 years of experience with these products, Lubing engineers have developed three types of conveyor systems: The Lubing Rod Conveyor is a stable and extremely robust way of transporting eggs over straight distances. The Lubing



Curve Conveyor is a flexible system that allows curves and radii to be implemented in the smallest of spaces.

The Lubing Steep Conveyor 'Climber', effortlessly conveys eggs over gradients of up to 60° and can thus, for example, overcome door crossings and driveways in the smallest of spaces. The Lubing Conveyor systems offer

- Highest functional reliability with minimum maintenance requirements
- Modular principle for easy individual adaptation of all systems for curve guidance, gradients and long distances
- Conveying widths between 200 and 750 mm
- Conveying capacities depending on the system from 15,000 eggs/h up to 65,000 eggs/h
- Extremely robust, durable construction with low maintenance requirements



Automatic inspection and selection of eggs

Grading eggs is usually done through visual inspection by the staff standing at the belt.

vencomaticgroup.com

This subjective way of sorting eggs is labour-intensive, expensive, and risky. Meggsius Select from Vencomatic does the same job but objectively and consistently.

The vision-based machine consists of multiple cameras and a sorting unit. The criteria-based algorithm ensures the objectivity of sorting; the operator sets them to his requirements and according to the flock's age.

Quality control by the Meggsius Select is defined by the egg's size and shape, various kinds of dirt, and various grades of shell damage.

Multiple pictures are taken from

all sides of each egg to avoid missing out on any abnormality on the eggshell.

The system ensures an objective and reliable quality assessment. This greatly reduces the daily workload. In addition to monitoring the process, the operator only takes care of the supply of packaging material and the removal of full packs such as pallets and trays with rejected eggs.

Egg quality, and reject category data (per hen house and/or day totals) are transparent and accessible for further analysis. To support the monitoring of the process, Meggsius Detect is part of the system.

The Meggsius Detect detects leaking eggs from the egg infeed conveyor and offers the opportunity to remove these leaking eggs manually at an early stage to prevent soiling.

Expanded production capability for woven egg belts

Breeders Poultry Belts has recently expanded production capacity for their egg conveyor and manure belts to respond to increasing customer demand.

breederspoultrybelts.com

For U.S. customers who are currently relying on expensive imported products, purchasing egg and manure belts from Breeders Poultry Belts can simplify your supply chain and provide an entirely U.S. made product.

For companies outside the U.S., the increased capacity means you have access to a cost-competitive, high-quality product if you are already importing egg and manure

belts. Egg belts are provided in widths from 3-8" and any roll length with low minimum orders.

The manure belts can be supplied in a variety of thicknesses (typically 0.040" to 0.047"), widths up to 96" and any length, with a low minimum order quantity of 2,000 lb.

All manure belts meet UL 94 HB. Regardless of whether you are a large farming operation or distributor relying on imported belts or an OEM importing both equipment and manure belts, we can simplify your supply chain and reduce inventory costs.

While providing unsurpassed product quality and customer support.

Combining gentle egg handling with high efficiency

Leading manufacturer Moba have added a new member to their Mopack family: the Mopack EP. this farm packer combines gentle egg handling with high efficiency and can handle 27,000 eggs per hour.

moba.net

The Mopack EP (Efficient Packing) is designed to receive eggs from layer houses and pack them into 30-egg trays.

It comes with all the expected benefits and user-friendly features of a Moba farm packer, seamlessly combining Moba's well-known gentle egg handling with remarkable efficiency. With a gross capacity to handle 75 cases per hour, it stands out as one of the most efficient farm packers available on the market!

The eggs are treated with the utmost care throughout the entire process. This is because the arriving eggs are collected by the accumulator.



This device utilises various sensors and a patent-pending transition plate to regulate the influx of eggs.

This unique method of controlling egg flow reduces the frequency of machine stops, enhances packing efficiency, and, above all, minimises the potential impact on the eggs.

Moba prioritises food safety, recognising its utmost importance for every egg producer. That is why they have meticulously designed the Mopack with easy cleaning in mind.

The Mopack EP is crafted using stainless steel and incorporates Moba's renowned synthetic parts, ensuring hygienic and gentle egg handling. The simple yet robust design makes it easily accessible for cleaning and

maintenance tasks. It features a dedicated cleaning mode on board, positioning the machine for easy access to all parts. Moreover, the EP boasts an incredibly compact footprint, allowing it to seamlessly fit even in the smallest packing rooms of egg producers.



Benefits of centralised egg collection

The use of egg conveyor belts, transporting eggs to a central collection room can potentially benefit overall egg quality.

VDLjansen.com

Without conveyor belts, farm workers need to collect eggs at the breeder house, and then transport them to a central storage location.

This transport often comes with challenges like height differences from house to house, pathways with potholes, poor internal handling by labour, and other potential root causes for hairline cracks.

Investing in a centralised

collection room, with good packing and storage conditions can result in better conditions for hatching eggs, ultimately improving hatchability results.

VDL Jansen's egg conveyor belt, FlexBelt, has long been in the market and has been installed in many different countries. The uniquely shaped, flexible egg carriers ensure gentle handling of the egg.

With its modular setup, including inclines, declines and corners, FlexBelt can provide customised solutions for every farm situation.

With its system capacity of 21,000 eggs per hour, this belt is a perfect fit for breeder farms collecting hatching eggs.

A new versatile robotised solution launched

Ovoconcept have launched a new integration of two case palletisers, the Ovopal 1000.

ovoconcept.eu

This versatile robotised solution can work with both open-top and closed cases (in cardboard and/or

plastic). The Ovopal1000 optimises the egg collection and avoids carrying loads.

Thanks to full case stackers installed in front of the robot, cases of 60 and 90 eggs are taken 8 by 8 for achieving up to 1900 cases per hour.

Cases of 96 eggs are taken 4 by 4 for achieving up to 1000 cases per hour.



Egg collection and transport are essential fundamental stages in laying hen poultry.

poultryplast.com

Giordano Poultry Plast designs, creates and produces solutions for the handling of commercial eggs, the egg product industry and the egg hatching and incubation industry, to drastically reduce any possible damage to the eggs.

EggsCargoSystem was introduced in 2000, in response to the need to offer a better solution in replacement of the current metal containers and paper trays.

EggsCargoSystem is a system that consists of a specific plastic pallet, a special

plastic divider (layer) to separate the stacks, and a wide range of smart-design plastic egg trays (flats), all for optimal egg protection.

EggsCargoSystem is the perfect combination of all modern egg handling equipment available in the market, created to ensure maximum egg protection.

The advantages of EggsCargoSystem are efficient

handling, better use of space, loss reduction, and improved hygiene."

The EggsCargoSystem forms the perfect joint venture with all modern egg-handling equipment available in the market. All are created to assure maximum egg protection.



Options for

egg handling



Taking care at every step involved in egg collection

Hybrid Agrobots Pvt. Ltd. Egg Collection System is designed with automatic features to collect eggs and take care of every step involved in the egg collection systems – transportation of eggs, good handling, and high functional reliability.

hybridagrobots.com

They designed the egg collection system by implementing innovative technology to ensure several benefits, minimising labour costs and time, reducing damages to eggs, and maintaining a precise count of eggs produced per house, tier, or row in the poultry farm.

The system incorporates a range of various sections that include lift systems and ST elevator, sorting/grading machines, and so on.

Elevator Section

Our ST Egg Elevator in the Egg Collection System is ideal for proper egg transport and short systems without causing any damage to the eggs. The machine enables a large egg collection capacity and quick access to different flocks in separate cage rows in the barn. When it comes to safe egg transport and short systems, the Elevator System is the one to look out for. Egg belts and elevator chains are used to match the conveying capacity and the laying performance.

Compact sorting equipped with cam gear structure: The conveyor belt features a mechanical weighing system that allows the grading of eggs.

It helps to grade the eggs in sequence. Automated technology plays a key role in the egg

collection procedure. AI-enabled modern vision system helps to find and classify the damages of the eggs.

Technology

The plastic core on the doing wheels in the Egg Collection System features a flexible and soft lip. The idea is to safeguard the eggs and prevent any hairline cracks during the transferring process.

The elevator chain is guarded with safety braces that are made of plastic. The material makes it light and flexible for the eggs and ensures they are safely transferred without any damage to them.

EC Egg Elevator

The structure is bigger than the ST Egg Elevator since it comprises three levels. The capacity of the total volume of eggs is huge. It features an adjacent extra-wide elevator chain that efficiently manages the egg collection procedure.

So, what are the most significant factors of the EC Egg Elevator? It can collect up to 15,000 eggs per hour. The belts run parallel to the elevator thus, transferring the eggs in a systematic chain.



Innovative solution in grading and packing

Sanovov Technology Group is proud to introduce the Case Packer CoFlex, a significant addition to our suite of case packing solutions for grading and packing stations.

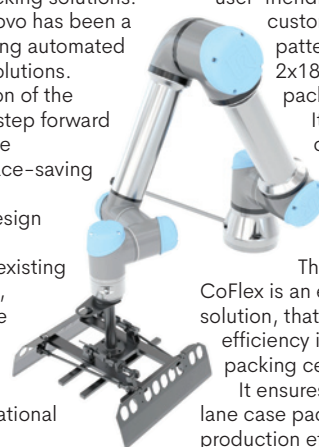
sanovoeegg.com

The CoFlex, standing for Collaborative Robot and Flexibility, is our latest innovation, complementing the Case Packer Twin and broadening our offerings to customers in need of versatile end-of-lane packing solutions.

For years, Sanovo has been a leader in providing automated case-packing solutions.

The introduction of the CoFlex marks a step forward in offering a more economical, space-saving option.

Its compact design allows for easy integration into existing production lines, optimising space usage, simplifying installation, and minimising operational disruptions.



The CoFlex is designed to meet the needs of businesses handling egg tray packaging and facing challenges such as labour shortages.

Suitable for both small-scale setups and large-scale facilities, the CoFlex enables businesses of various sizes to automate their grading facilities efficiently.

The CoFlex is equipped with intuitive features for easy operation, which is just as simple as it gets.

The CoFlex stands out with its user-friendly interface,

customisable packing patterns (1x30, 3x12, 2x18, 4x10), and adaptive packing capacities.

It handles up to 57 cases per hour with a cycle time adjustable for safety and efficiency.

The Case Packer CoFlex is an economical, flexible solution, that maximises space efficiency in grading and packing centres.

It ensures a steady end-of-lane case packing flow, enhancing production efficiency.

Our 'Options for' feature focuses on a different topic every issue such as enzymes, trays & trolleys, automation etc.

To feature your products on these pages, contact us:
claire@agriinsightpublications.com



SOLUTIONS FOR POULTRY PROCESSING

A supplement for poultry producers, carried in International Poultry Production

LABOUR CHALLENGES IN POULTRY PROCESSING

BAADER POULTRY
poultry.baader.com

The COVID-19 pandemic left a profound and lasting impact on labour shortages within the poultry processing industry. During the height of the pandemic, many workers exited the industry and have not returned.

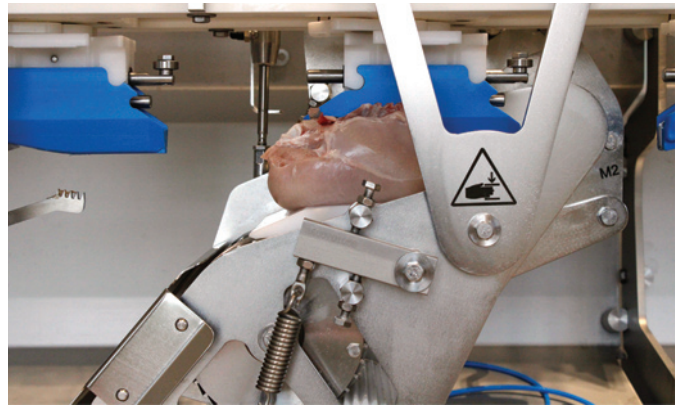
The challenge is twofold. Firstly, the industry grapples with a scarcity of workers for tasks ranging from bird catching on the farms to processing within the plants. Secondly, retaining a stable workforce has grown increasingly challenging due to the physically demanding nature of the work and often undesirable working conditions. These factors have led to elevated employee turnover rates and have made it difficult to find and retain skilled labour, giving rise to concerns about the future availability of a skilled workforce.

AUTOMATION AND NEW TECHNOLOGIES

The continuously rising line speeds necessitate increased automation, as the tasks are becoming progressively more complex for human operators to manage efficiently and consistently.

To tackle the challenge of sustaining a workforce, the industry is actively exploring automation as a potential remedy to alleviate the labour-intensive nature of processing tasks. Automation in the poultry processing industry can encompass a wide range of processes, each aimed at improving productivity, consistency, and product quality.

BAADER is continually advancing the frontier of automation through the creation of both modest and extensive initiatives. These include developments like fully automatic giblet harvesting and intelligent meat deboning, but also automated pasteurization of scalding water, automated solutions for unblocking the Head Puller, and even the integration of automation in maintenance tasks, such as automatic lubrication systems for the reception system.



The implementation of automation is not only a means to address labour shortages but also a pathway to elevate the efficiency and competitiveness of the industry. The BAADER Breast Cap Deboner 660A heavily reduces the number of workers on the deboning line as it only requires two loading workers to run 70 caps per minute. The younger generation may prefer companies that use automation and digital tools to streamline processes, enhance efficiency, and provide opportunities for skill development in tech-related areas. As a result, this demographic is apt to wholeheartedly embrace innovative processing technologies and efficiently navigate automated equipment, as well as the human-machine interfaces integral to these solutions.

ATTRACTING THE NEXT GENERATION

Training and educational programs are also being developed to enhance the skills of workers and make the industry more appealing to the younger generation. Younger workers prioritize their health and safety, and they look for poultry processing facilities that offer a secure working environment with strong safety protocols, comprehensive training, and easy access to personal protective equipment. While the use of sharp tools and machinery, as well as repetitive tasks, can pose challenges related to injuries and health risks for employees, the implementation of adequate safety measures and training programs will address these concerns effectively.

DEVELOP AN IMPACTFUL SAFETY MANAGEMENT PLAN

BIO-OX
www.bioox.us

There are many serious safety and health hazards in the poultry processing industry, ranging from biological hazards associated with handling live birds such as avian flu, exposure to dust particles, as well as dangerous chemicals such as ammonia which is used as a refrigerant and can also be found in poultry feces. With all of these possible hazards facing poultry processors, it might feel like an uphill battle to develop an impactful safety management plan to protect workers. One useful tool to address all these concerns is our BioOx Air Cleaning System.

The BioOx Air Cleaning System is a first-in-class system, which uses our patented biological technology and captures and destroys airborne pollutants. BioOx Air Cleaning Systems perform environmental decontamination, air quality improvement, and odour control, all of which are useful tools for protecting those who work in poultry processing environments.

BioOx was founded by the renowned research scientist, Dr. Sam Sofer, who worked in a Nobel Prize-winning laboratory and discovered ROx (reserve oxygen). As a result, the brand's Air Cleaning Systems are based on the science of ROx and the fundamental sciences of convection, molecular charge attraction (aerosols), and bio-oxidation, which creates a dome of influence where all air is clean.

A key component to an effective safety management plan is to improve both sanitation and ventilation measures, and there is not a single HEPA, UV or ionic

based system on the market that offers complete localized air decontamination like BioOx. While other systems struggle to filter out 0.3 microns, our bio-reactors offer complete contaminant destruction down to 0.0001 microns and can clean air in large square footage facilities, such as poultry processing facilities.

Avian flu outbreaks have generated headlines in the news recently, and it is a viral disease that can cause sickness and death among poultry, and in some cases can be transmitted to poultry workers or others who come in contact with infected poultry. Our BioOx Cleaning Systems respond quickly to real viral and bacterial epidemiological outbreaks spread via air. Various experiments have proven that BioOx is effective with pathogen destruction (H1N1, Legionella, Influenza B, and MRSA were studied).



POULTRY PERFORMANCE OPTIMISATION, FOCUSED ON HEALTH AND SUSTAINABILITY

DSM-FIRMENICH
www.dsm.com

DSM-firmenich, the leading innovator in nutrition, health and beauty, and Agrifirm, a leading agricultural cooperative, announced their strategic partnership to create a platform for poultry performance optimisation, focused on health and sustainability.

The pressing need for more sustainable food systems is underlined by the commitment of food companies and retailers through emissions reduction targets but these are difficult to realize considering the size and complexity of supply chains. Farmers and the feed industry provide an important part of the solution to achieving these ambitious, yet necessary international goals, as the majority of food-related emissions and the ability to improve are firmly under their control.

Bringing together dsm-firmenich industry-leading life cycle assessment (LCA) platform Sustell and Agrifirm PoultryNEXT, a leading data platform for poultry production performance insights, the new platform will offer a differentiated solution for transparent and responsible poultry production addressing the value chain needs.

Sustell combines the most advanced environmental footprinting platform with expertise in sustainability, animal production and nutritional knowledge. By capturing specific feed and farm data in a highly scalable way, while being backed by third-party ISO certification, Sustell users can accurately monitor their full environmental footprint and understand where and how to make improvements, thereby playing a pivotal role in enabling the downstream value chain to deliver on their emissions commitments and targets. PoultryNEXT combines performance tools with expertise in flock management, animal production and nutritional knowledge. By capturing farm-specific data, backed by nutritional and on-farm expertise, PoultryNEXT can monitor precise data that accurately tracks and helps

improve responsible production performance. A high-feasibility pilot will now be rolled out with Agrifirm partner farms, utilising PoultryNEXT with sustainability insights provided by Sustell. The service will give farmers access to high-quality sustainability insights such as a farm environmental footprint to support responsible production performance. The platform allows for better supply chain transparency, providing an accurate picture of the complete product journey from the feed to the farm to the retail shelf.

David Nickell, Vice President of Sustainability & Business Solutions at dsm-firmenich, Animal Nutrition & Health: "There are genuine opportunities for improvements in efficiency, sustainability and animal health, and these are often interrelated. Connecting Sustell to Agrifirm industry-leading PoultryNEXT is the key to unlocking the value of sustainability for Agrifirm farmers and chain partners."

Yvonne van der Vorst, Director of strategic marketing and business development at Agrifirm adds: "We are a cooperative of farmers on our way to build sustainable food chains for future generations. Bringing Sustell with PoultryNEXT to our farmers and chain partners we offer cutting-edge solutions for measuring and managing responsible poultry production while steering CO₂ reduction. This partnership will create value for our customers and chain partners, and bring transparency to perform responsibly in the poultry industry, in line with our sustainability agenda."



A VERSATILE MACHINE DESIGNED TO DICE, STRIP-CUT, AND SHRED A WIDE VARIETY OF MEAT AND POULTRY

FAM STUMABO
fam-stumabo.com

FAM STUMABO is about to change the meat and alternative protein processing industry with the launch of its latest innovation, the Yuran Hytec 300.

The Yuran Hytec 300 is a versatile machine designed to dice, strip-cut, and shred a wide variety of meat, poultry, and alternative protein products. This cutting-edge equipment offers enhanced processing capabilities compared to its predecessor, the Yuran Hytec 240.

THE KEY FEATURES OF THE YURAN HYTEC 300:

1. Increased capacity: The 300mm wide conveyor belt allows an increased feeding capacity, accommodating products with larger dimensions.
2. Versatile cutting options: Dual independent variable-speed motors enable precise adjustments to cut size and shape without the need for additional cutting tools.
3. Efficient changeovers: Quick-removable splined shafts of the cutting spindles facilitate fast changeovers from one cut size to another, reducing downtime in the production process.

4. Hygienic design: The smart hygienic design ensures easy, thorough, and safe cleaning of the machine. The product is fed via the belt and guided towards the feed roll, ensuring a positive transfer into the circular knives. These circular knives cut the product into strips, which are then diced by the crosscut knife spindle at the desired height or length.

The machine also offers the option of a pre-break system for initial reduction in combination with subsequent cutting and shredding spindles. Successful applications The Yuran Hytec 300 finds its use in cutting fresh, crust-frozen, tempered frozen, and (hot) cooked meat and poultry products. It excels in providing efficient and consistent pulled look shredding of cooked beef, poultry, and pork meats, making it ideal for BBQ meats, salad and pizza toppings, sandwiches, and handheld snacks. The specialized cutting tools are designed to handle the unique characteristics of extruded products, creating alternative meat products



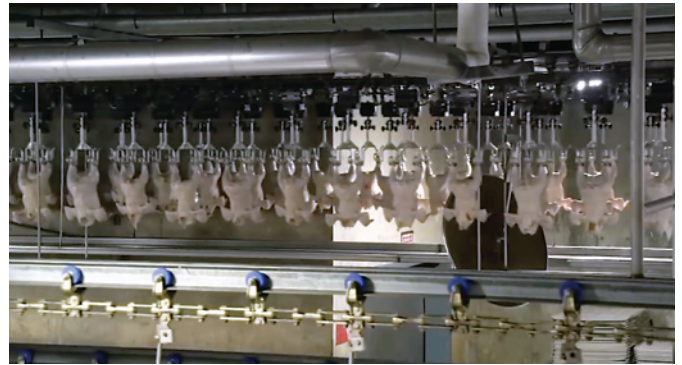
REVOLUTIONIZING POULTRY PROCESSING WITH IIOT INNOVATION

FOODMATE
www.foodmate.nl

Foodmate, a global automation solutions provider to the poultry processing industry and a member of the Duravant family of Operating Companies, is proud to announce the launch of Duravant ONSIGHT, a cutting-edge Industrial Internet of Things (IIoT) service that sets a new standard for poultry processing efficiency and control.

Duravant ONSIGHT improves processing operations by gathering critical data and centralizing production line performance information in real time. It provides immediate access to critical indicators, instant alerts, comprehensive reports, and advanced machine learning algorithms that empower operators to proactively address challenges before they materialize. It seamlessly integrates with Foodmate equipment in new or existing processing lines, ushering in a new era of highly intelligent and streamlined poultry production.

The machine monitoring feature provides real-time tracking of key indicators for Foodmate dark and white meat deboners, including the OPTiX, Ultimate, MAX series, and Cut-up Systems. According to Justin Lister, Foodmate Product Manager for Digital Intelligence, Our Maintenance Insights features a unified platform for managing equipment services such as preventive maintenance planning, maintenance ticket management, remote support, and status tracking. Operators



receive real-time reports on product quality and machine performance with instant alerts in case of issues or safety concerns. The extensive data offered by Foodmate products, coupled with the capabilities of our IIoT solution, Duravant ONSIGHT, empowers operators to calculate advanced metrics such as service level availability, production counts and rates, and operational equipment effectiveness, all in real time. This heightened situational awareness equips operators to proactively address issues before they occur, added Clint Quanstrom, Duravant IIoT Lead.

Duravant ONSIGHT is an end-to-end solution that creates an encrypted link between intelligent Foodmate machines and a secure cloud environment. The system is designed to be integrated within existing enterprise IIoT systems or as an independent IIoT platform and is available with select new Foodmate systems.

THE NEXT STEP IN INNOVATIVE WATERJET CUTTING TECHNOLOGY

JOHN BEAN TECHNOLOGIES AB
www.jbtc.com

JBT takes the next step in innovative waterjet cutting technology Looking for a waterjet portioner for your poultry processing business, but not yet really to invest in large-scale industrial machinery?

The new DSI 812 from JBT is an economically-priced version of the innovative DSI waterjet portioning range developed for smaller processors, which takes up 70% less floorspace than the existing DSI 822. Ideal for poultry portioning or fat trimming, the DSI 812 incorporates the best features of DSI waterjet portioners in a more compact version. Developed in response to customer requests, the 812 is perfectly suited for poultry processors who don't have the floor space for a 12 meter-long machine or the budget for a much larger piece of equipment. They took a look at what worked on their flagship line and incorporated as many aspects of that as they could in this compact portioner.

It is an XY waterjet cutter, very similar to our 800 series, it has a different gantry design, upgraded electronics, and enclosure to make it as small a footprint as possible.



Built-in benefits The 812 will also enable smaller processors to benefit from the Quantum Electric Servo Pump, which is marketed exclusively by JBT and forms part of the new portioner. Mounted on board the portioner, the Electric Servo Pump requires up to 40% less energy than a hydraulic system, enabling customers to benefit from a 'significant leap forward when it comes to technology for high-pressure intensifier pumps'. In addition to the low operating costs, DSI optional Jet Blocker technology can deliver as much as a 30% increase in throughput.

If you are cutting from point A to point B and there is something in the middle that you don't want to cut, with Jet Blockers you can go right up to that area and then the water stream is blocked. Once it is past the area, the cutting will continue.

With portions, strips or nuggets, this level of accuracy can amount to substantially more throughput. Detailing the workings of the system, Alec Hewitt JBT DSI Product Manager, told International Poultry Production, that poultry going into the system passes through a DSI J-Scan, which creates a precise height map. This data is fed into JBT DSI proprietary Q-Link portioning software, which analyses the height map and generates a cut strategy depending on whatever the customer wants. The resulting XY and timing information is then sent to the cutters. We have sub-millimetre accuracy down to a few grams, so we not only have high capacity, reliable equipment but also extremely precise equipment.

DSI waterjet system is specifically designed for portioning and our team has made sure that the software is as streamlined and capable as possible. As part of the installation package, we typically send an application engineer along with the service tech to provide training and help the customer set up the machine with all of their required cut strategies.

Talk to almost any poultry and meat processor today about challenges they face cutting products and common themes show up time and again: exacting customer requirements, maximizing high-value product output by making full use of incoming product, pressure to reduce food waste, and a lack of skilled personnel, high staff turnovers and a lack of space in processing facilities. For customers across a wide range of product categories, JBT's new DSI 812 Waterjet Portioner could well provide a workable solution.

The system works by scanning products to locate fat and determine shape, thickness, weight, and other attributes before DSI Q-LINK Software optimizes a cut strategy for each piece of raw product. Computer-positioned, high-pressure waterjets then generate complex cut shapes that make each piece as valuable as possible to maximize profits.

INDIVIDUALISED HORIZONTAL SLICING MACHINE FOR FRESH MEAT

GRASELLI KSL DV
www.grasselli.com

The cutting of products is an important energy-intensive process in food processing, which is used in various industries, including meat processing, and which is usually associated with several food losses.

The market for horizontal cutting currently consists of inline machines that are mounted with a defined number of blades at a defined distance, a so-called 'cutting pitch'. The lower belt of these machines represents the working base, and the upper belt pushes the product through the blades. The machine must be fine-tuned manually.

Due to the varying size and shape of the product (typically chicken breast or turkey breast), a permanent optimization of the various cutting parameters would be necessary to achieve the best yield and quality. As a result, the fixed and mechanical configuration of the current horizontal cutting machines presents two main problems:

1. The impossibility of fine-tuning the cutting parameters during production, resulting in poorer cutting quality and in a difficult to control production;
2. The almost constant presence of a trim slice on the top, due to the difference between the height of the pressed product and the cutting pitch resulting in lower yields and a lot of product residue.

KSL-DV is an automatic horizontal cutting machine for boneless meat, specially designed for poultry processing. Compared to the standard fixed-thickness horizontal cutting machines currently available on the market, the system can detect the size and shape of each incoming product and adjust the cutting process



to maximize the yield and quality of the cut product. This is made possible by the use of a 3D scanner system to examine the product combined with specially developed software and a patented blade movement system. This allows the machine to automatically decide how many blades (from 0-6) to use as well as to adjust automatically the positions of the blades and those of the pressure parameters to minimize the unusable residues of the cut product and, ideally, to achieve complete zero waste.

The control of the cutting movement by an electronic actuator allows easy modification of all cutting parameters during production in real-time so that each piece can be treated according to its cutting parameters and ultimately an average product yield of 96% to 98% can be achieved.

The energy savings and the cleaner downstream handling process combined with a corresponding reduction in the risk of contamination and an improvement in the shelf life of the product are also decisive. The system is compatible with other standard machines and can therefore be easily integrated into existing production lines. In addition, by adapting the software, this cutting process can also be transferred to other product areas.

HIGH PERFORMANCE TEMPERING AND DEFROSTING

INTERFOOD TECHNOLOGY
www.interfoodtechnology.com

Delivering innovative solutions in poultry processing, Interfood Technology is the exclusive distributor and service partner in the UK and Ireland for SAIREM, a world-leading manufacturer of industrial microwave (MW) and radio-frequency (RF) technologies for the food industry.

FROZEN BLOCKS

Central to the profitability of many poultry-based products is the capacity to buy meat cost-effectively. As such it is common practice for manufacturers to purchase frozen blocks when prices are low to create a buffer stock, thereby offering economies of scale and avoiding price volatility in the meat markets. A method often used to defrost these blocks is the tempering room, where racks are left for a period to allow the blocks to gradually rise in temperature, typically from -18°C to 2°C. The problem with this approach is the lack of consistency and controllability. Once the blocks reach 1°C, drip loss can occur, resulting in a significant reduction in yield (research has shown that weight loss can be up to 8%), as well as potential degradation of the product.

VOLUMETRIC HEATING

Microwave and RF technologies are specifically designed to improve thermal processes and to defrost, sanitise, cook, heat and dry a wide range of foodstuffs through their ability to heat quickly and uniformly.

This 'volumetric heating' is achieved by heating the entire product mass directly, unlike conventional solutions whereby heat is transferred by convection or conduction from the outside to the centre of the product through its surface.

Microwave and RF offer full control over the defrosting process, with a typical increase from -18°C to -2°C. At this temperature the frozen blocks of chicken can then be worked in a tumbling or grinding process to bring them up to around 2°C, which retains moisture, and avoids drip loss and an excessive rise in temperature. The uniformity of the product temperature throughout the food block also allows for easier post-processing of products.

An advantage of SAIREM technologies is that they eliminate time wasted in unpacking products. SAIREM machines allow tempering or defrosting in the original packaging, whether it is plastic film, cardboard or plastic. Also, removing close plastic packaging when meat is frozen can be difficult and these technologies allow it to be removed much easier, avoiding product contamination. The processes also have no adverse effects in terms of organoleptic properties, preserving the colour, weight, taste, vitamins and nutrients of the food.



MECHANICAL SEPARATION, DEBONING AND GRINDING-DESINewing AT ITS BEST

LIMA

www.lima-france.com

LIMA has been developing, manufacturing and selling mechanical separation, deboning and grinding-desinewing solutions worldwide to the satisfaction of its customers since 1981!

LIMA's only dedication since its very beginning has always been developing and supplying the best solutions to separate the hard from the soft by mechanical means for the food processing industry. The applications are numerous, such as producing the highest quality of mechanically separated meat (MSM) at very high optimal yield out of poultry, pork, lamb, and beef bones, as well as recovering the best fish pulp out of fish central bones.

Also, over the years, LIMA has been at the forefront of the poultry industry, developing and delivering two-step LIMA separation lines.

In the first step, poultry carcasses, necks or other bones are mechanically deboned at low pressure enabling the production of very high-quality separated meat, in terms of Structure, Colour and a low Calcium content, less than 1,000ppm. Such mechanically separated meat at low pressure is commonly referred to as '3mm MSM' or 'Structured meat' MSM with a texture closer to ground meat than conventional MSM. For the second step of this separation line, a transfer pipe conveys the separated mix of bones with residual meat to a LIMA S meat-bone



separator which recovers the last possible quantity of meat from the bones, producing a conventional but high-quality mechanically separated meat (MSM) at very high optimal yield.

LIMA offers LIMA S meat-bone separators and LIMA DDS deboners-desinewers from 100 to 20,000 kg/h input capacity (220 to 44,000 lb/h). LIMA has developed a new range of Grinders-Desinewers especially designed for poultry bone-out raw materials such as trimmings with or without wishbones, thigh, and drumstick deboned meat, as well as for chicken or turkey fillets.

The Grinder-Desinewer GD enables to add value to such meat cuts by processing them into a very high-quality ground and desinewed meat, ensuring the separation of hard parts such as sinews, tendons, cartilage, bone chips as well as plastic foreign bodies, at very high yield, from 80% to 98% while ensuring low collagen/protein ratios. The recovered meat is not MSM but a true ground and desinewed meat obtained from bone-out raw materials.

This new range of Grinders-Desinewers GD enables grinding and desinew from 100 to 13,000 kg/h of raw material input. LIMA also offers Grinders-Desinewers for red meat (beef and pork) providing the same technical advantages for the valorization of deboned shank meat, deboned shoulder meat, aponeurosis, and various trimmings.

INTELLIGENT EVISCERATION MANAGEMENT

MAREL

www.marel.com

In the poultry process, evisceration is probably the most delicate operation, requiring consistent performance across all bird weights while effectively handling every single giblet pack. This combination of skills can be challenging, but Marel's Nuova-i excels in every comparison. Designed to make data-driven decisions, Nuova-i maximizes performance with minimal reliance on human judgments or labour.

TACKLING FLOCK VARIATIONS

Properly managing flock variations is crucial in evisceration. With Nuova-i, selecting the appropriate settings for different flock sizes is just a press on the touchscreen. The machine adjusts its settings automatically within seconds, eliminating the need for manual adjustments and ensuring a smooth operation.

"Flock variation has been one of the crucial issues in our production line and Nuova-i allows adjustments according to needs. This improves the process, with a positive impact on yield and profitability. The ability to adjust to flock variations means an important cost reduction for us, significantly lowering our operational expenses." Marcel Fogaça, Project Manager of SSA in Brazil, told International Hatchery Practice,

AN INTELLIGENT DIGITAL DRIVE

Nuova-i's internal SmartBase software continuously monitors its performance, identifying potential issues and trends without relying on human intelligence. This proactive approach prevents unexpected incidents and enables processors to optimize evisceration operations effectively. The reliably generated process information facilitates autonomous, data-driven decision-making, leading to near-perfect performance.

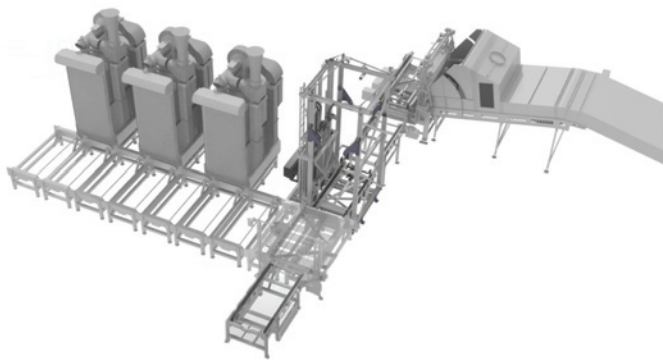
Furthermore, Nuova-i's internet connectivity opens up various communication possibilities, allowing seamless integration with other machines and remote monitoring from a control room or mobile devices.

HYGIENE

Nuova-i's carousel features 24 units and can handle line speeds of up to 15,000 birds per hour while ensuring the highest levels of efficiency and yield. Technological advancements, such as the robust, long-life spoon, enhance precision and hygiene standards, minimizing the risk of contamination.

Nuova systems are traditionally renowned for their super-hygienic method of rehanging the viscera pack in a separate line. The Nuova-i takes it a step further, creating consistently compact packs only. No unwanted remains are left behind and intestines don't hang out, so there is a minimum chance of soiling or cross-contamination. Lukasz Mielewczyk, co-owner of Mielewczyk in Poland, is impressed by Nuova-i's hygienic handling, "Looking at the drawing of the pack, Nuova-i does a fantastic job, with perfect product quality as a result. Individual giblets are not damaged; they look great. The machine has done well for us. Giblet yield and giblet quality have also improved quite a lot at our facility. The advantages are many."





STUNNING SYSTEM IS TRANSFORMING THE POULTRY INDUSTRY

MEYN

www.meyn.com

Meyn's Multistage CO₂ stunning system is transforming the poultry industry, offering unparalleled advantages over other CAS methods and electric stunning. Performing stunning in batches within a closed unit ensures exceptional ease and precision in control. Experience uniformly applied stunning, irrespective of bird type or weather conditions, leading to minimal discomfort for our feathered friends.

Meyn Multistage CO₂ stunning maximizes both animal welfare and product quality by eliminating live handling at the plant. Birds are stunned without wing flapping or convulsions, ensuring peak product quality, regardless of the arrival system used.

What's more, Meyn's system seamlessly integrates with existing common container systems, even those from other brands, minimizing capital investment when transitioning to gas stunning.

Curious to witness the future of poultry stunning in action? Explore the Meyn Multistage CO₂ stunning demo system your opportunity to experience firsthand its user-friendliness, precision, and effectiveness. Ready to enhance your poultry processing?

This supplement was carried in
International Poultry Production 32.3
as a service to poultry producers

The next Poultry Processing Supplement will be
included in the December issue of
International Poultry Production (32.8)

If you would like to be included
please contact Claire:
claire@agriinsightpublications.com



SOLUTIONS FOR POULTRY PROCESSING

International Poultry Production

Do not ignore mycotoxins you need to manage them

Mycotoxins are toxic secondary fungal metabolites produced by moulds pre- and post-harvest and are ubiquitous in the environment.

by Sarah Osborne, Technical Corporate Development Director, Anpario plc
anpario.com

Mycotoxins impact productivity in a variety of ways including impaired growth, poor feed efficiency, reduced productivity, impaired eggshell quality and increased embryonic mortality, significantly impacting producer returns.

Mycotoxins rarely occur in isolation and therefore, whilst mycotoxicosis in poultry is relatively rare, finding a broad mix of low-level mycotoxin contamination in feed is not uncommon.

There are many different mycotoxins and there can be multiple types present in a single raw material or feed sample.

It is worth noting a feed containing multiple different toxins albeit individual levels below threshold levels, may be more problematic than a feed containing a single toxin at a high level.

Therefore, having a mycotoxin binder that can efficiently target and bind a wide range of mycotoxins in the gastrointestinal tract is essential. The impact of mycotoxins on poultry performance

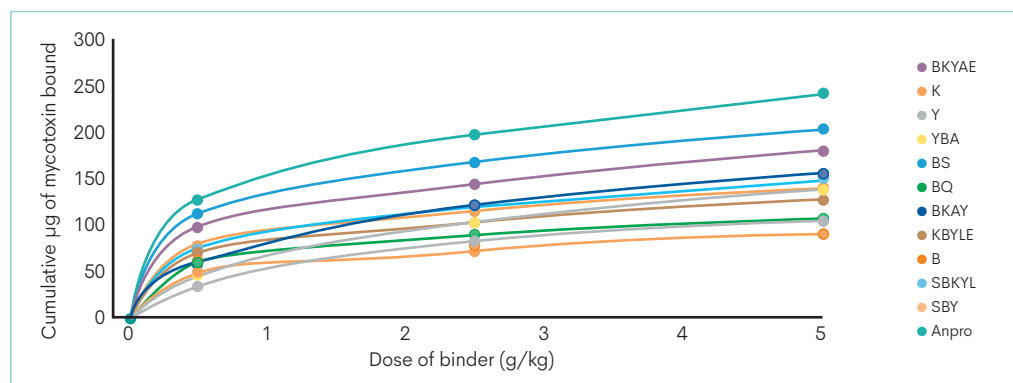


Fig. 1. Dose response of mycotoxin binders at pH 2.5.

can be significantly reduced by the addition of an effective binder into the ration.

The most widely used mycotoxin binders contain clays and/or yeast cell wall fractions. Most of these products work by simple adsorption of the mycotoxins onto sites on the binders, thus allowing the toxins to pass through the animal without causing problems.

With so many different products commercially available, all with numerous claims and studies demonstrating their efficacy in binding toxins in vitro as well as in vivo, choosing the most suitable binder is difficult and confusing at best (Fig. 1).

Whilst most will demonstrate some efficacy in adsorbing toxins present, it is misguided to assume that they all deliver the

same level of efficiency, are equally effective and that their use can eliminate the threat posed when a broad spectrum of toxins is present.

Some mycotoxin binders are better at binding certain mycotoxins than others.

DON and ZEA are two mycotoxins which are notoriously difficult to bind, yet elevated levels of these mycotoxins can be highly detrimental to performance.

Important to also note, that some binders may only be effective at either acidic or neutral pH levels, however, they will need to be able to bind, and retain the mycotoxins throughout the fluctuating pH of an animal's digestive tract to be fully effective.

Generally, binders work more effectively in acidic conditions,

such as that of the proximal small intestine of the birds' gastrointestinal tract, and it is the loss of binding at higher pH levels in the lower intestine that needs careful consideration when selecting a suitable binder. In addition, producers should also be aware and check for any impact on the binding of key essential nutrients within the diet.

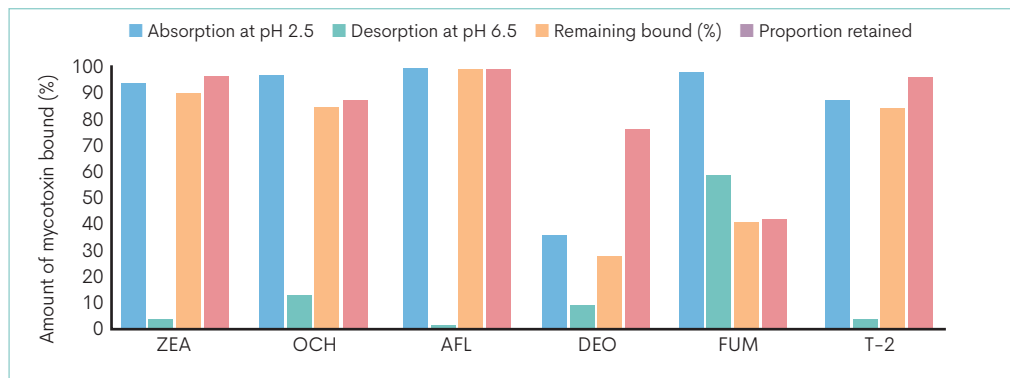
Finding a binder which can successfully bind a broad spectrum of mycotoxins, helping to reduce the risks associated with multiple low-level mycotoxin contaminations, is of the utmost importance (Fig. 2.) in ensuring profitable production throughout the lifecycle.

Mycotoxins are ubiquitous in feed and the environment, consumption even at low levels are known to negatively affect growth and performance, thus selection of an effective mitigant should be given careful due consideration.

The Anpro range of adsorbents from Anpario plc has been developed to help mitigate problems associated with the potentially harmful effects of these secondary fungal metabolites present in the feed and litter of poultry species.

The range provides a broad spectrum, low inclusion control system and is effective throughout the entirety of the birds' gastrointestinal tract, helping to protect bird health and productivity.

Fig. 2. Broad spectrum mycotoxin binding of Anpro Advance in a desorption test at pH 2.5 and pH 6.5.



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SCAN ME

Focus on Research

Heat shock proteins as a key defense mechanism

Over the past years, the poultry industry has been assigned to greater production performance but has become highly sensitive to environmental changes. The average world temperature has recently risen and is predicted to continue rising. In open-sided houses, poultry species confront high outside temperatures, which cause heat stress (HS) problems. Cellular responses are vital in poultry, as they may lead to identifying confirmed HS biomarkers. Heat shock proteins (HSP) are highly preserved protein families that play a significant role in cell function and cytoprotection against various stressors, including HS. The optimal response in which the cell survives the HS elevates HSP levels that prevent cellular proteins from damage caused by HS.

The HSP have chaperonic action to ensure that stress-denatured proteins are folded, unfolded, and refolded. The HSP70 and HSP90 are the primary HSP in poultry with a defensive function during HS.

HSP70 was the optimal biological marker for assessing HS among the HSP studied. The current review (**Poult. Sci. Vol. 103, Issue 4, April 2024, 103537**) attempts to ascertain the value of HSP as a heat stress defense mechanism in poultry.

Acoustic detection of vaccine reactions in hens for assessing anti-inflammatory product efficacy

Acoustic studies on poultry show that chicken vocalisations can be a real-time indicator of the health conditions of the birds and can improve animal welfare and farm management. In this study (**Appl. Sci. 2024, 14(5), 2156**), hens vaccinated against infectious laryngotracheitis (ILT) were acoustically recorded for 3 days before vaccine administration (pre-reaction period) and also from vaccination onwards, with the first 5 days being identified as the 'reaction period' and the 5 following days as 'post reaction'.

The raw audio was pre-processed to isolate hen calls and the 13 Mel-frequency cepstral coefficients; then, the spectral centroid and the number of vocalisations were extracted to build the acoustic dataset.

The experiment was carried out on the same farm but in two different houses. The hens from one house were assigned to the control group, without administration of the anti-inflammatory product, and the other formed the treatment group. Both acoustic data sets were recorded and processed in the same way.

The control group was used to acoustically model the animal reaction to the vaccine and we automatically detected the hens' vaccine reactions and side effects through acoustics.

From Scikit-Learn algorithms, Gaussian Naive Bayes was the best performing model, with a balanced accuracy of 80%

for modelling the reactions and non-reactions caused by ILT in the control group.

Furthermore, the importance of algorithm permutation highlighted that the centroid and MFCC4 were the most important features in acoustically detecting the ILT vaccine reaction.

Whole genome sequences, de novo assembly, and annotation of antibiotic resistant campylobacter jejuni strains S27, S33, and S36 newly isolated from chicken meat

Among a total of 39 species in the *Campylobacter* genus, *C. jejuni* is the most important species responsible for approx. 90% of human *Campylobacter* illness. Most cases of the infection were acquired by ingesting undercooked poultry meat due to the high prevalence of *Campylobacter* in the products. In this study (**Microorganisms 2024, 12(1), 159**) we reported the dataset of raw sequences, de novo assembled and annotated genomes of *C. jejuni* strains S27, S33, and S36 recently isolated from retail chicken by using PacBio highly accurate long-read sequencing technology combined with bioinformatics tools.

Our data revealed several virulence and antibiotic resistance genes in each of the chromosomes, a type IV secretion system in the plasmid (pCjS33) of *C. jejuni* S33, and a type VI secretion system and a phage in the plasmid (pCjS36) of *C. jejuni* S36.

Focus on Research

Aflatoxin levels in poultry feed: a comparison of mash and pellet forms

The current research (**Poult. Sci. Vol. 103, Issue 1, Jan 2024, 103254**) was conducted to determine the aflatoxigenic and non-aflatoxigenic isolates and the frequency of levels (B1, B2, G1, G2), in main feed ingredients (corn and soybean meal) and poultry finished feed (in mash and pellet forms). Eighty-five samples of , , and poultry finished feed was randomly collected from feed mills in Iran.

Regarding macro and microscopic morphological criteria, isolates were identified, and aflatoxins were determined by (TLC) and high-performance liquid chromatography (HPLC). All of poultry feed samples were contaminated with different levels of aflatoxins, ranging from ND (they were not detected in those samples) to 5.58 µg/kg. At all stages of processing, the poultry feed had lower levels of aflatoxins in comparison with the accepted/residue levels of poultry feed mills.

Higher amounts of aflatoxins (B1, B2, G1, G2, and total) were detected in , compared to other poultry samples ($P < 0.05$). The total toxin level in samples reached a maximum of 3.31ppb. The results indicate that finished feed samples in pellet form may pose a greater risk than their individual ingredients in poultry feed, particularly when suboptimal conditions exist for eliminating fungal populations. So, the prevention and reduction of (*Aspergillus section Flavi*) are highly important in maintaining of poultry feed, as the production of aflatoxins can occur during the process of converting raw ingredients into finished feed.

Persistence of vaccine origin *Salmonella Typhimurium* through the poultry production continuum, and development of a rapid typing scheme for their differentiation from wild type field isolates

Salmonella enterica serovar Typhimurium is one of the top *Salmonella* serovars annually linked to poultry production and corresponding human illnesses.

Because of this, vaccination of commercial poultry against *Salmonella Typhimurium* has been a focal point in recent years.

There are several commercially available *Salmonella Typhimurium* vaccines available for use in poultry production.

Among these are modified live vaccines, including Poulvac ST (Zoetis), Megan Egg (AviPro), and Megan Vac 1 (AviPro). In this study (**Poult. Sci. Vol. 103, Issue 6, June 2024, 103707**) analyses of 27 field isolates of *Salmonella Typhimurium* from poultry sources indicated evidence for the persistence of some vaccine-origin strains through the commercial production cycle.

Further analyses of 26,812 database isolates indicated vaccine-origin isolates are persisting frequently through processing, are present on retail meat products, and are even occasionally found in human patients.

A novel polymerase chain reaction (PCR) was created and validated which enables simultaneous identification of *Salmonella enterica* sp., the *Salmonella Typhimurium* serovar, and differentiation of wild type *Salmonella Typhimurium* from live attenuated vaccines involving mutations in the *cya/crp* or *aroA* genes.

The PCR was developed considering whole genome differences between the vaccines and wild type field isolates and was validated using different field isolates and recovered vaccine strains.

This method enables poultry producers to rapidly determine if recovered field isolates have a vaccine origin.

Effects of G and SH Truncation on the Replication, Virulence, and Immunogenicity of Avian Metapneumovirus

Avian metapneumovirus (aMPV) is one of the major respiratory viruses that have a significant economic impact on poultry worldwide.

It causes acute, highly contagious upper respiratory tract infections and is also associated with swollen head syndrome (SHS) in chickens.

aMPV is an RNA virus that belongs to the Metapneumovirus genus in the family Pneumoviridae. Another member of the

Metapneumovirus genus is the human metapneumovirus (hMPV), a major respiratory pathogen in children. There are currently four distinct subtypes of aMPV (A, B, C, and D) with genetic and antigenic differences.

Subtypes A and B are the major subtypes causing significant economic losses in chickens, and they are prevalent in many countries in Europe, Asia, and Africa. Subtype C causes acute respiratory infections in the turkey industry in North America (especially in the United States) and has also been reported in farmed ducks (in France), pheasants (in South Korea), and Muscovy ducks and chickens (in China), as well as some wild birds (in the United States).

Subtype D has been reported in only one case in turkeys in France in 1985.

For this study (**Vaccines 2024, 12(1), 106**) four mutants varying the length of the G and SH genes, including a G-truncated mutant (ΔG) and three G/SH-truncated mutants ($\Delta SH/G-1$, $\Delta SH/G-2$, and $\Delta SH/G-3$), were generated via serially passaging the avian metapneumovirus strain SNU21004 into the cell lines Vero E6 and DF-1 and into embryonated chicken eggs.

The mutant ΔG particles resembled parental virus particles except for the variance in the density of their surface projections.

G and G/SH truncation significantly affected the viral replication in chickens' tracheal ring culture and in infected chickens but not in the Vero E6 cells. In experimentally infected chickens, mutant ΔG resulted in the restriction of viral replication and the attenuation of the virulence.

The mutants ΔG and $\Delta SH/G-1$ upregulated three interleukins (IL-6, IL-12, and IL-18) and three interferons (IFN β , IFN γ , and IFN λ) in infected chickens. In addition, the expression levels of innate immunity-related genes such as Mda5, RIG-I, and Lgp2, in BALB/c mice were also upregulated when compared to the parental virus.

Immunologically, the mutant ΔG induced a strong, delayed humoral immune response, while the mutant $\Delta SH/G-1$ induced no humoral immune response.

Our findings indicate the potential of the mutant ΔG but not the mutant $\Delta SH/G-1$ as a live attenuated vaccine candidate.

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International News



A wholesome offer for layer genetics



High-performing, adaptable and robust layers, personalised technical support, and a long-lasting partnership built on trust and proximity: All In One, is more than just an offer, it is focused on innovation and expertise in the service of the egg industry.

At Novogen, they believe that the success of the egg industry lies in close collaboration among all its stakeholders.

This is why they are fully committed to working closely with their clients and partners to help them achieve their goals. Novogen's ambition is to design

innovative and sustainable solutions to meet the challenges and demands of the worldwide egg market.

All In One: a comprehensive solution for optimal performance. As its name suggests, All in One encompasses all of Novogen's clients' needs and establishes a long-term partnership built on proximity. The All in One offer is based on three key pillars:

1. High-performing and client-adapted breeds
2. Customised and local technical support
3. A strong and long-lasting relationship built on trust

novogen-layers.com

Approval for ProAct 360 in poultry



dsm-firmenich, the leading innovator in health, nutrition, and beauty, and its alliance partner Novonesis are delighted to announce the EU regulatory approval of the innovative feed protease ProAct 360.

Following EU-wide approval, ProAct 360, will now be available to feed and poultry producers for use in all fattening poultry and in chickens reared for laying and breeding.

This represents new enzyme technology that benefits the poultry industry in terms of feed efficiency, affordability and sustainability.

It breaks down protein faster across a broad range of feed ingredients, delivers greater digestibility of all amino acids and better degrades anti-nutritional

factors. By improving the efficiency of protein absorption in the small intestine, ProAct 360 also permits the formulation of lower-protein diets with a reduced proportion of soybean meal.

This substantially reduces the environmental impact of poultry production while at the same time contributing to improved intestinal health and animal welfare.

DSM.com

Acquisition strengthens portfolio



Novus International, Inc. announces it has completed the acquisition of U.S.-based enzyme company BioResource International, Inc. (BRI). Under the terms of the agreement, NOVUS becomes the owner of all

Actionable insights for enhancing livestock health

Cargill's World Mycotoxin Report provides the animal feed industry with actionable insights for enhancing livestock health

For farmers and producers around the world, proactive risk management is vital to protecting animal health and winning the battle against mycotoxins in feed.

They need comprehensive data on contaminants and their risks to decide whether mitigating mycotoxin measures, like feed additives, are necessary.

Cargill's world mycotoxin report contains more than 350,000 mycotoxin analyses captured annually across 150+ feed plants, on-farm samplings and storage locations.

This year's report includes forage samples for the first time, capturing 17,000+ forage mycotoxin analyses globally, which are especially important for ruminant mycotoxin risk evaluation.

Cargill hosts the largest and most comprehensive mycotoxin contamination database in the world providing real-time information on the most problematic mycotoxins with their level of contamination, performance risk rates and species sensitivity when exposed to a given mycotoxin.

As a feed user and producer working alongside customers around the globe, Cargill developed a Mycotoxin Impact Calculator (MIC) to address these concerns.

This in-house tool helps customers identify and mitigate mycotoxins with data-backed insights to maximise performance and outcomes for animals and producers' bottom line.

Key findings in Cargill's world mycotoxin report:

- Slightly lower pressure: With a slightly reduced intensity compared to 2022, the percentage of positive samples remains notably high, with 70% surpassing the detection limit and 37% of the analyses exceeding Cargill's performance risk thresholds.

- Mycotoxins to watch: The top three mycotoxins demanding attention due to their prevalence and risk levels are Deoxynivalenol (DON; Vomitoxin), Fumonisin (FUM), and Zearalenone (ZEN). In the past year, there was a notable increase (+7%) in FUM analyses surpassing performance risk thresholds, while both DON (-1%) and ZEN (-9%) experienced decreases.

- Co-occurrence: Co-occurrence continues to be prevalent, with 78% of the samples tested for three or more mycotoxins indicating contamination with multiple mycotoxins.

cargill.co.uk



BRI's products and intellectual property and takes control of the company's facilities.

"This move will allow us to serve our customers better and expand our innovation pipeline further," Novus President & CEO Dan Meagher told International Poultry Production.

"Enzymes are vital tools for producers to ensure animal health and well-being and help deliver on-farm profitability. We're very excited to offer our customers more options, as well as aspire to develop new feed additives."

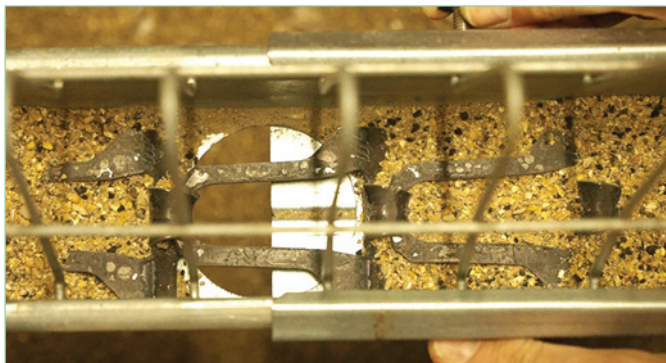
BRI's products include

Versazyme protease feed additive, Xylamax xylanase feed enzyme, Dymamase mannanase enzyme, Phytamax granulated, thermostable, microbial 6-phytase enzyme; and EnzaPro® enzyme and direct-fed microbials, among others.

BRI's co-founder and CEO Giles Shih, PhD, told us the acquisition and tapping into the knowledge of employees in both BRI and Novus allows for the continued growth of the company he helped create 25 years ago in North Carolina in the U.S.

novusintl.com

International News



At the end of 2022, Roxell launched the Fortena chain feeding system for hens in the production period. Thus, they completed our complete range for feeding which now includes a solution for every type of poultry farmer. The chain feeding system is not an average of the current systems on the market and has been completely mastered by the Roxell feeding experts with a unique and patented chain design. Patented chain feeding system with large open links. The chain feeding system has large open links that take up 25% less space than other chain feeding systems on the market.

roxell.com

New DVG tests against Coccidia and Ascaris suum



Kersia has achieved efficacy tests against two endoparasites, *Eimeria tenella* and *Ascaris suum*, with our product Fumagri Effisafe.

Fumagri Effisafe underwent rigorous testing in accordance with the adapted DVG test method against *Eimeria tenella* oocysts associated with Coccidiosis and *Ascaris suum* eggs under the specified conditions below.

Fumagri Effisafe is a broad spectrum of activity disinfectant for use at livestock premises, equipment, foot baths, animal transport trucks and wheel disinfection.

- Neutral solution at 1% dilution and kind to many surfaces
- Bactericidal, yeasticidal, fungicidal, mycobactericidal and virucidal disinfectant for livestock premises, animal breeding equipment and materials in farms.
- Bactericidal, yeasticidal and virucidal disinfectant for animal transport vehicles, including wheels, boots in a boot bath
- According to DVG standards, anti-coccidia (*Eimeria tenella*) and efficient against *Ascaris suum* (large roundworm)

Always follow Strict Hygiene Protocols when facing a challenge such as Coccidiosis or Cryptosporidiosis caused by oocysts, or an infestation of *Ascaris suum*.

kersia-group.com



Gut health in antibiotic-free poultry production



Antibiotic-free poultry production has revolutionised how we manage and produce meat and eggs.

One crucial aspect of this transition is ensuring optimal gut health in poultry, as it plays a significant role in overall bird health and productivity.

Strict biosecurity practices help ensure the health and well-being of the birds. However, one often overlooked aspect of biosecurity is the feed. Feed can serve as a potential source of pathogens that may enter the production cycle if not properly monitored and tested. From the quality of raw materials used in feed to the environmental sampling throughout the production process, every step is essential in ensuring the safety and quality of the final product. Interventions like feed sanitisers can help control the microbial risk of feed ingredients and finished feed.

Antibiotics used for growth promotion were previously administered via feed; now we use feed as a carrier for other additives that improve performance and boost gut health and immune response. These interventions include essential oils, feed sanitisers, probiotics, organic acids and phytochemicals.

By promoting intestinal health and balancing the microbiome, these products aim to enhance performance and reduce the risk of infections such as salmonella.

Studies have shown that feed sanitation can lead to lower mortality rates, improved body weights, better feed conversion rates, and reduced prevalence of pathogens in both broilers and layers.

Since the early 2000s, there has been a significant decline in antibiotic use in poultry. In 2014 only a small percentage of chicken sold in the United States was labeled antibiotic-free, but by 2020, over half of poultry products were marketed as such, reflecting a growing consumer demand. The transition to antibiotic-free practices in poultry production necessitates improvements across all aspects of the industry, from breeder management to processing and distribution. Promoting gut health in antibiotic-free poultry production means the industry has been more proactive about management, including hatchery sanitation, brooding practices, and vaccination programs. Managing the microbial load entering the system of commercial poultry is a key part of antibiotic-free poultry production. One way we can manage the number of bacteria entering the gut is feed sanitation. Feed is known to be contaminated with both pathogenic and apathogenic bacteria and even viruses specific to commercial poultry.

Adding a feed sanitiser to your current antibiotic-free program is a simple and effective way to reduce the overall load your poultry are exposed to.

One of the many focuses in antibiotic-free poultry production is improving intestinal health by maintaining a balanced bacterial community, known as the microbiome. Interventions in feed such as feed sanitisers can help control microbial loads and benefit commercial poultry by enhancing intestinal health by reducing the overall load of bacteria that birds may be exposed to.

anitox.com

International Mini Ads



Research targeting key production challenges



Trouw Nutrition, Nutreco's livestock feed business line, contributed four research posters to the 8th International Conference on Poultry Intestinal Health (ICPIH) in Manila, Philippines, 17-19th April.

These scientific study posters offered new insights into some of the poultry industry's most pressing concerns including Salmonella control, mycotoxin risk management and reducing antibiotic use in poultry production.

During ICPIH, Trouw Nutrition researcher technician, Eva Vidal delivered an oral presentation sharing findings from a study evaluating the use of a microencapsulated feed additive to reduce the excretion of extended-spectrum β -lactamase (ESBL)-producing *E. coli* in the

production environment. Other highlights of Trouw Nutrition's scientific contributions to ICPIH are listed below.

- Effect of a synergistic blend of organic acids and high copper usage on performance and egg quality during the early phase of laying.
- Management of combined toxicity of aflatoxins, DON and ochratoxin A on the intestinal health of commercial layers.
- Effect of a synergistic blend of organic acids on broiler gut morphology and growth performance.
- Blend of organic acids, medium-chain fatty acids and phenolic compounds improves gut health under Salmonella challenge conditions. Details of these sessions can be found on Trouw Nutrition's website.

trouwnutrition.com

Responsible and Balanced Animal Breeding



The release of the 7th Edition of the Code EFABAR marks a significant step forward in transparency, showing the EFFAB members' journey towards responsible and balanced animal breeding.

The sector has proactively adopted the concept of balanced breeding as defined by Code EFABAR; debunking the widespread belief that sole productivity focus strategies are still in use.

The Code proves the eagerness of the sector to reduce GHG and ensure high levels of animal health and welfare, among many others. Code EFABAR's principles are adaptable to all animal farming systems.

Updated every three years, Code EFABAR reflects the dynamic nature of modern breeding programs in responding to environmental challenges, and societal expectations.

The objectives and standards of the breeding programs have deeply evolved in the last two decades.

Today, for instance, 40% of the

traits in poultry breeding programs focus on improving the welfare of the birds.

The recognition by stakeholders and policymakers of Code EFABAR as the endorsed reference of current breeding practices would lay the necessary foundation for further improvement.

By coactively embracing this standard, we aim to persist in breeders' continuous efforts towards sustainability.

Code EFABAR actively contributes to a future grounded in a high level of sustainability and resilience of the EU food systems.

effab.info

Cutting-edge training modules



The International Poultry Welfare Alliance (IPWA) is pleased to announce the launch of a comprehensive set of educational training modules designed to complement its Key Welfare Indicator (KWI) Guides.

Developed in collaboration with Fresno State's Center for the Optimisation of Poultry (COOP), these training modules aim to enhance knowledge and promote

Positive CVMP opinion for nobilis multiriva



MSD Animal Health, a division of Merck & Co., Inc., today announced that the European Medicines Agency's Committee for Veterinary Medicinal Products (CVMP) issued a positive opinion for the Nobilis Multiriva RT+IBm+ND+Gm+REOm+EDS vaccine to be administered intramuscularly in chickens from eight weeks of age.

This will protect against diseases caused by avian metapneumovirus also known as Turkey Rhinotracheitis (RT) virus, Infectious Bronchitis (IB) virus, Newcastle Disease (ND) virus, Infectious Bursal disease or Gumboro (G) virus, Reovirus (REO) and Egg Drop Syndrome (EDS) virus.

If the European Commission (EC) adopts this recommendation, this would be the first vaccine of the Nobilis Multiriva platform, an innovative, upgraded product range engineered with the needs of today's layers and breeders in mind.

"MSD Animal Health has been committed to bringing innovations to our customers that protect against the most important viral poultry pathogens for laying and breeding chickens," Maxim Nakhodko, Global Poultry Business Unit Lead, MSD Animal Health, told International Poultry Production. "With today's positive opinion, the Nobilis Multiriva RT+IBm+ND+Gm+REOm+EDS vaccine is one step closer to becoming the first 9-valent inactivated viral vaccine in Europe."

It combines proven protection with a convenient small dose volume of 0.3ml allowing a new 2,000 dose presentation, which produces less waste, reduces use of refrigerator space and optimises the vaccination process.

Based on the CVMP's recommendation, the EC is expected to issue a decision for marketing authorisation in the European Union (EU) during the second quarter of 2024.

msd.com

best practices in poultry welfare.

The training modules cover each section of the IPWA's Key Welfare Indicator Guides, ensuring a thorough exploration of critical topics related to poultry welfare.

"We are thrilled to unveil these educational training modules as part of our ongoing efforts to promote the highest standards of poultry welfare globally," Nick Wolfenden from Cargill, co-chair of the Education and Training Committee at IPWA, told International Poultry Production.

poultrywelfare.org

Carbon reduction efforts in Asia



Alltech and Thai Wah Public Co. (TWPC) have joined forces to advance carbon reduction efforts in the Asian agri-food industry by leveraging scientific nutritional solutions and technologies.

Carbon emissions from the agri-food industry remain significant across Asia, accounting for

approximately 42% of all agri-food emissions globally, according to the third edition of the biennial Asia Food Challenge Report, which centres on opportunities to decarbonise the agri-food value chain in Asia.

At least two-thirds of emissions in the Asian agri-food value chain occur before the produce has even left the farm. These upstream agricultural activities are resource-intensive and less efficient than many industrial processes further down the value chain, resulting in higher emissions.

Recognising the critical importance of this issue, Alltech and Thai Wah are collaborating to boost sustainable animal feed production, enhance animal feed nutrition for optimal health and performance, and promote efficient waste utilisation through a biogas project.

Additionally, the companies will work together to reduce Thai Wah's carbon footprint and advance its overall sustainability practices.

alltech.com

International News

Global feed production data



Global animal feed production remained steady in 2023 at 1.29 billion metric tons (BMT), a slight decrease of 2.6 million metric tons (MMT) or 0.2% from 2022's estimates, according to the 2024 Agri-Food Outlook, released today by Alltech.

The lower demand for feed was due, in part, to the more efficient use of feed made possible by intensive production systems that focus on using animal nutrition, farm management and other technologies to lower feed intake while producing the same amount of protein, or more. A slowdown in the overall production of animal protein, in response to tight margins experienced by many feed and animal protein companies, also contributed to lower feed demand. Changing consumption patterns caused by inflation and dietary trends, higher production costs and geopolitical tensions also influenced feed production in 2023. The top 10 feed-producing countries are

- China (262.71 MMT, +0.76%)
- U.S. (238.09 MMT, -1.13%)
- Brazil (83.32 MMT, +1.84%)
- India (52.83 MMT, +13.43%)
- Mexico (40.42 MMT, +0.02%)
- Russia (35.46 MMT, +3.83%)
- Spain (27.53 MMT, -11.88%)
- Vietnam (24.15 MMT, -9.63%)
- Japan (23.94 MMT, -1.15%)
- Turkey (23.37 MMT, -11.48%).

Together, the top 10 countries produced 63.1% of the world's feed production, and almost half of the global feed production is concentrated in four countries: China, the U.S., Brazil and India.

[alltech.com](https://www.alltech.com)

Research on production traits in poultry



Researchers from several European institutes and universities have completed the first phase of the GERONIMO project to unravel the biological mechanisms underpinning Efficient Livestock Production (ELP) traits in chickens.

The GERONIMO project, funded by the European Union's Horizon 2020 research and innovation program, aims to develop new strategies for improving livestock production.



Unlocking the power of Alpha-Gal immunity



The collaboration between startup microXpace and Lallemand Animal Nutrition has reached a significant milestone as both partners prepare to enter the product development phase for the promising Alpha-Gal-based technology.

The production of Alpha-Gal antibodies, triggered in response to microbiota expressing the Alpha-Gal glycan, has been revealed to play a vital role in recognising and binding pathogens' surfaces.

This powerful technology offers new possibilities to help maintain animal health by supporting resilience to infectious diseases affecting aquaculture and poultry production worldwide.

The successful proof of concept stage of the microXpace-Lallemand partnership has led to the identification of a broad range of parasite targets, paving the way for the development of an Alpha-Gal-based product aimed at enhancing resilience against major parasitic diseases prevalent in the aquaculture and poultry farming industries.

[Lallemand.com](https://www.lallemand.com)

What is Alpha-Gal Immunology? Alpha-Gal antibodies play a crucial role in recognising and binding Alpha-Gal on the surface of pathogens.

These antibodies can activate the lysis of the targeted parasite and other pathogens.

The stimulation of Alpha-Gal immunity by microbiota protects a broad range of disease agents that express the Alpha-Gal glycan on their surface (*Plasmodium* sp., *Mycobacterium* sp., *Borrelia* sp., *Trypanosoma* sp. and more). The production of Alpha-Gal antibodies by the host is triggered in response to microbiota that express the Alpha-Gal glycan. This happens only in animal groups that do not produce Alpha-Gal themselves such as fish, birds and humans.

MicroXpace aims at harnessing the potential of Alpha-Gal immunity in poultry species through the use of natural microbial-based solutions which are applied in-feed and enhance the immune response to a broad range of pathogens, especially parasites.

Within this framework, breeding for efficient livestock production needs to lead to 'all-round' birds by simultaneously targeting traits related to production (in terms of quantity and quality), efficiency, productive longevity, fertility, resilience, animal welfare and health.

The research is significant because it will provide valuable insights into the biological mechanisms that underlie ELP traits. The researchers collected

comprehensive phenotype1 data on:

- Laying hen productivity: Standard chicken phenotypes were recorded at two ages - 70 weeks of age (700 animals) and 90 weeks of age (500 animals).

All animals were individually phenotyped for feed intake, egg quality (albumen, yolk, and shell strength), egg production, body weight, lipid storage and bone composition for a part of animals.

[geronimo-h2020.eu](https://www.geronimo-h2020.eu)

EVENT DIARY

2024

Pig & Poultry Fair

15-16th May
Stoneleigh, UK
www.pigandpoultry.org.uk

Livestock Philippines

22-24th May
Pasay City, Philippines
www.livestockphilippines.com

Ildex Vietnam

29-31st May
Ho Chi Minh City, Vietnam
www.ildex-vietnam.com

Indo Livestock

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www.indolivestock.com

Ildex Philippines

28-30th August
Manila, Philippines
www.ildex-philippines.com

AgriBITS 2024

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Utrecht, Netherlands
www.agribits.nl

VIV Select China 2024

5-7 SEPT
Nanjing, China
www.vivchina.nl

VIV Africa

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www.poultryafricaevent.com



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