

JANUARY - MARCH 2023

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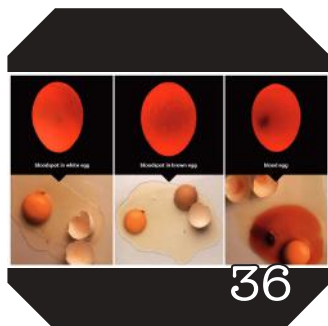
23



26



32



36



43

NEWS	04
GULFOOD REVIEW	22
NORWEGIAN EXPORTS	24
BROODING MANAGEMENT	26
LIGHTING SOLUTIONS	29
POULTRY VACCINATION	30
POULTRY FEEDS	32
VENTILATION	34
EGG GRADING	36
ANIMAL FEEDS	37
ANIMAL NUTRITION	41
ANIMAL HEALTH	42
DAIRY FARMING	43
LIVESTOCK FARMING	44
MEAT	46

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45



46



48

Managing Editor
M. Matt

Associate Editors
Jessie Jorge
Megha Mary Matt
Dr. Ann Matt

Assistant Editors
Raseena Navaskhan
Loimee De Leon

Contributors
Dr. Hansel Geo Thomas
Neville J. Chandler

US Office
Matt Media (USA) LLC.
1713 E. Morgan Court
Gilbert, Arizona 85295

United Kingdom
Matt Media International Ltd.
12 Gateway Mews
London N11 2UT

Middle East Offices
Matt Media LLC
Sharjah Media City
United Arab Emirates
Al Saad Adv. & Publishing LLC
P O Box 25694, Sharjah
United Arab Emirates

Email: info@livestockmiddleeast.com | gulfag@emirates.net.ae | www.livestockmiddleeast.com

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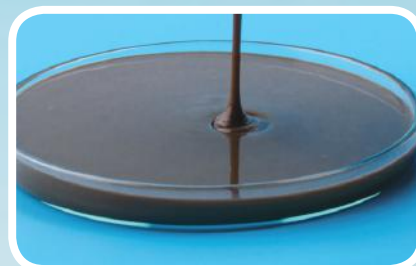
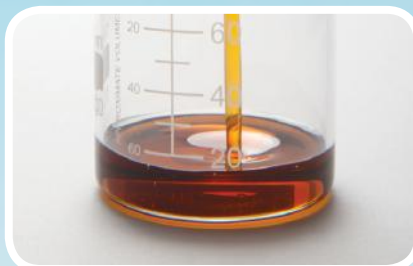


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News

EVONIK LAUNCHES FIRST PLANT-BASED FEED ADDITIVE

Evonik aims to help keep sows, laying hens and dairy cows healthy with a new plant-based product. The product, called PhytriCare® IM, consists of selected plant extracts with a high flavonoid content. Flavonoids are known for their anti-inflammatory effects. The product is available immediately throughout the EU. Approvals in other countries have been initiated.

"Healthy animals are in the interest of us all," says Dr. Gaetano Blanda, head of the Animal Nutrition business line at Evonik. "The farmer benefits from higher productivity, and the consumer can enjoy meat, eggs, or dairy products safe in the knowledge it is coming from healthy animals."

Since the prophylactic use of antibiotics has been banned in Europe, many farmers are looking for alternative solutions to keep their animals healthy and productive. In addition to probiotics, various other product classes have become established, including phytogenics. Evonik Animal Nutrition adds plant-based PhytriCare® IM to its probiotics-based Gut Health Solutions portfolio.

Farm animals - like all living creatures - are exposed to a variety of stress factors and respond by activating the body's defense mechanisms. If the stress continues at a higher level for a longer period, it can lead to

chronic inflammation. As a result, animal welfare suffers. The animal then uses an increased share of its energy and nutrients for the immune system rather than for beneficial activities, such as growth and performance - sometimes for months or years. Consequently, production efficiency decreases and the animal's ecological footprint increases.

"PhytriCare® IM was developed to prevent an overshooting of inflammatory reactions in sows, laying hens and dairy cows," adds Nicholas Guthier, head of EMEA Region & Global Key Accounts at Animal Nutrition. "After all, female animals are particularly stressed by reproductive processes anyway."

SAR SIGNS AGREEMENT WITH SAGO TO TRANSPORT GRAIN

Saudi Arabia Railways has signed an agreement with Saudi Grains Organization (SAGO) to transport grain from King Abdulaziz Port in Dammam to the Organization's branch office in Riyadh, as this agreement will contribute to achieving economic development and providing main food commodities in Saudi Arabia.

H. E Eng. Abdulrahman bin Abdulmohsen Al-Fadley, Minister of Environment, Water and Agriculture and H.E. Eng. Saleh bin Nasser Al Jasser, Minister of Transport and Logistic Services witnessed the signing ceremonies. The contract was signed by H.E. Eng. Ahmed bin Abdul Aziz Al-Faris, Governor of

Saudi Grains Organization (SAGO) and Dr. Bashar Al Malik, CEO of Saudi Arabia Railway (SAR) in the Ministry of Environment, Water and Agriculture's headquarters in Riyadh.

The five-year agreement includes transportation of grain from King Abdulaziz Port in Dammam to the Organization's branch office in Riyadh by the railway linking the Eastern Province with Riyadh. It will result in less dependency on trucks on road to reduce carbon emissions, preserving the roads' infrastructure and increasing the safety level for roads users.

Eng. Ahmed Al-Faris expressed his pride in signing this national

and strategic agreement in the food industry and logistic services saying: "This agreement will help SAGO, which manages and operates silos, work more efficiently and diversify means of transportation, as 300,000 tons of grain are transported yearly."

Commenting on the signing, Dr. Bashar Al Malik said: "It entrenches our role and commitment to achieve the objectives of the National Transport and Logistics Strategy (NTLS) and the Kingdom's Vision 2030. We transport food commodities following the highest international standards to ensure safety and quality"

WORKING TOGETHER TO IMPROVE POULTRY TRADE SHOWS

Poultry trade shows are important events for everyone involved in the poultry sector to make business connections. But with numerous events each year, a strategy is needed to pick when and where to go because it is not possible to attend them all.

This is where ShowCo comes in; it is an association of companies who work together to achieve more from poultry trade shows. ShowCo is made up of various companies from around the world which all sell products and services to poultry producers.

Its main tool to get more from events is the Global Exhibition

Calendar which maps out trade fairs in the poultry sector. ShowCo discusses and decides which events members will attend in each year.

The general rule is that ShowCo members attend each major exhibition every two years. For example, ShowCo attended IPPE in 2022 and will do so again in 2024, but in 2023 ShowCo members are focusing on other international poultry trade shows such as VIV Asia and VIV MEA.

Missing out on big shows like IPPE has its drawbacks but ShowCo members buy in to the overall strategy.

"Undoubtedly, every trade show has opportunities for ShowCo members," says ShowCo director Fenny Straat. "But that needs to be considered against the time and financial resources needed to prepare for and attend trade shows."

"A founding principle of ShowCo is to attend fewer, and work together to make better, trade shows and use the time and resources saved to improve the standard of the products and services we offer customers. By not attending every event, we believe that we offer visitors more innovation and higher quality at the events we do attend."



HENDRIX GENETICS

COBB RESEARCH INITIATIVE PROVIDES AN OPPORTUNITY TO UNITE SCIENCE, ANIMAL HEALTH AND TECHNOLOGY

A new grant opportunity seeks research partners to unite science, animal health and technology to maximize genetic progress in food production. The Cobb Research Initiative (CRI) was developed to propel poultry genetics further by creating opportunities that bring together diverse scientific research disciplines to create advancements in protein production.

"Cobb intends to progress

food security and safety, sustainability and efficiency for the benefit of the poultry supply chain, and, ultimately, consumers," said Dr. William Herring, vice president of research and development, for Cobb. "To achieve these goals, we'll partner with researchers from a variety of fields beyond poultry to gain fresh insights and develop new tools to be used across the industry, including genetic development."

The CRI encourages proposals that incorporate any of the following innovation topics to help improve its genetic products: Artificial intelligence, Data systems collection and management, Robotics and automation, and Application of biotechnology.

The application period for the current round of funding is now open. Research partners can submit pre-proposals electronically by April 3, 2023.

BENEO EXTENDS ANIMAL NUTRITION PORTFOLIO WITH FABA BEAN INGREDIENTS

BENEO, one of the leading manufacturers of functional ingredients, is pleased to announce the expansion of its product portfolio for aqua and livestock feed with the addition of the new faba bean ingredient range, including faba bean protein concentrate, starch-rich flour, and hulls. These pulse ingredients are non-GMO and represent sustainable sources of protein, starch, and fibre, enabling feed manufacturers to improve the nutritional profile of their products.

Faba bean ingredients are showing promising potential for aqua and livestock recipe formulations as they are a good source of protein, starch and

dietary fibre. BENEO's faba bean protein concentrate, starch-rich flour and hull ingredients are produced from faba bean varieties which are low in antinutritional factors (e.g., tannins, vicine and convicine) and are guaranteed to be non-GMO.

BENEO's faba bean starch-rich flour offers producers of livestock and aqua feed a good source of starch and energy, while still containing a significant residual amount of protein of approximately 20%. It is ideal for use in many applications, including for salmon and trout, as well as in broilers' starter. Also, thanks to its good solubility and rather low iron content, it

could be applied in liquid feed like calf milk replacers.

BENEO's faba bean protein concentrate is a concentrated source of vegetal protein that serves as a good alternative to e.g., animal and soy proteins. It has excellent solubility in comparison to other vegetal proteins and a good amino acid profile.

BENEO's faba bean hulls can be used to provide a source of insoluble fibres in feed for ruminants or gestating sows, while also offering certain protein and starch contents which increase its nutritional value. The faba bean hulls and protein concentrate are listed in the EU Catalogue of Feed

Materials, while faba bean starch-rich flour is in the EU Feed Materials Register.



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AGI 

BIOMAR SOURCES BENSON HILL INGREDIENTS TO BOOST SUSTAINABILITY OF AQUAFEED

Benson Hill, Inc., a food tech company unlocking the natural genetic diversity of plants, and Denmark-based BioMar, announced a strategic collaboration to advance BioMar's responsible sourcing program by leveraging Benson Hill soy and further assessing its sustainability impact on

high-performance aquafeed formulations.

BioMar is sourcing consecutive seasons of Benson Hill ingredients as part of its commitment to build restorative soy supply chains. Feed holds the primary cost in the farming of aquaculture and is the major contributor to its carbon footprint. Benson Hill advances

sustainability goals throughout the ingredient development process – from monitoring regenerative and deforestation-free practices on the farm to producing ingredients that reduce water and energy-intensive protein concentrating steps in processing. Together the companies are assessing how the advantages of Benson Hill ingredients advance BioMar's sustainability program and reduce the impact of aquaculture farming for BioMar customers.

"BioMar has made a commitment to reduce the impacts of our feeds, and 97% of the carbon footprint comes from the feed ingredients," said Morten Holdorff Møjbæk, Global Sourcing Director, BioMar Group.



ALWATANIA POULTRY AT GULFOOD 2023

AlWatania Poultry participated in Gulfood 2023 fair, which took place from the 20th till the 24th of February at Dubai World Trade Centre in the UAE. Founded in 1977 by Sheikh Suleiman AlRahji, AlWatania has been the #1 poultry brand in the Kingdom of Saudi Arabia, and today it has become the largest poultry facility in the Middle East. With more than 50 branches, the company employs a workforce of more than 7,500 employees and has three slaughterhouses equipped with advanced technologies to produce fresh and frozen products.

AlWatania offers a variety of quality and affordable products, and is continuously developing

its production methods through world-class processes as well as innovative R&D. Using modern and environment-friendly systems that achieve the highest safety standards and sustainable development, AlWatania produces more than 200 chicken, eggs, and poultry products, while ensuring that all chickens are fed naturally and slaughtered in full conformity with the Islamic Sharia. By adopting a major expansion strategy over the past few years, AlWatania has successfully managed to become one of the largest poultry producers in the world. This strategy has allowed the company to reach the goal of processing more than 1 million chicken

and 1.5 million eggs per day to meet both local and international demand. Today, the company's fertilizer plants have a daily capacity of 300 tons, and its feed mills are capable of producing 1,800 tons per day. AlWatania's expansion program is also aimed at supporting the Kingdom's efforts to reduce its dependency on the import of chicken meat, by increasing the local production of chicken meat by 20% as per the 2030 Vision.

AlWatania places environmental protection and the health of its employees among its top priorities. In this regard, the company has obtained the ISO 22000 –HALAL -Saudi Gap-ISO 9001-HACCP Certification.

TADWEER AND SULO PARTNER TO DRIVE SUSTAINABLE WASTE MANAGEMENT IN ABU DHABI

The Abu Dhabi Waste Management Company (Tadweer), the sole custodian of waste management in the Emirate of Abu Dhabi, signed a collaboration agreement with SULO, one of the world's largest producers of waste containers and smart waste solutions, with roots in France, Germany and Sweden, to explore potential opportunities to drive sustainable waste management in Abu Dhabi and beyond.

Under the terms of the agreement, the two parties will support the development of Abu Dhabi's integrated waste management system and explore the use of recycled materials in manufacturing. The collaboration agreement aims to support the UAE's journey towards adopting a circular economy through providing waste pre-collection services in the UAE and other MENA markets and utilising the latest technologies.

Eng. Ali Al Dhaheri, Chief Executive Officer of Tadweer, said: "The agreement with SULO aligns with our commitment to partner with leading entities in the waste management sector to maintain a sustainable and clean environment in the UAE. This partnership seeks to enhance sustainable practices across Abu Dhabi, by supporting the recycling, reuse, and reduction of waste, and the diversion of waste away from landfill. Together, we aim to work towards overcoming challenges by utilising best practices, raising public awareness on the importance of recycling, and providing the best-in-class waste pre-collection services for our communities."

Mr. Michel Kempinski, President of the SULO Group, said: "For more than three decades, SULO has been acting in the Middle East by supporting and providing its European expertise in pre-collection products and services. Our vision is to provide solutions to turn today's waste into tomorrow's resources. This

agreement is the concretization of this objective that our group and Tadweer have in common for our future generation. Today, with Tadweer, we enter into a new era of cooperation by strengthening this partnership towards a circular economy with our esteemed brother country the United Arab Emirates."



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AVIAGEN NAMES BULENT TANYILDIZI AS BUSINESS MANAGER FOR MIDDLE EAST & NORTH AFRICA

Bulent Tanyildizi was recently promoted to the role of Business Manager for the Middle East and North Africa (MENA) region. Bulent will be responsible for managing the three core brands in the region: Arbor Acres, Indian River and Ross. He will replace Michael Garden in this role; Michael will now assume the role of TMEA Senior Business Manager and will be responsible for some key account and country management in the region along with other key business area focus in this rapidly growing investment region for Aviagen.

In 2013, Bulent joined the Ross Middle East and Africa team as International Commercial Manager, before commencing his current role as Business Manager, MENA.

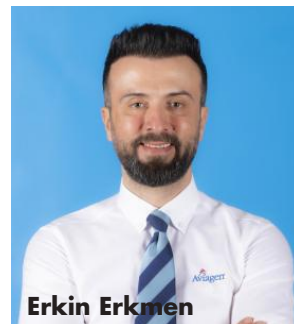
Bulent expressed his excitement for his new role and the new opportunities and challenges that come with it, "Turkey, Middle East, and Africa (TMEA) is a very dynamic and rapidly developing region within Aviagen. There is

significant demand for all Aviagen brands amongst our customers. In order to satisfy our customers' needs in full and on time, some changes were recently made at the management level and I am excited to have accepted the Business Manager position for the MENA region. I will spend all my efforts to make sure all of our breeds – Arbor Acres, Indian River, and Ross – are successful in my territory and the best possible support is in place for our customers to ensure they get the best out of their Aviagen flocks.

As part of restructuring in MENA, Aviagen has now strengthened the Ross team with Erkin Erkmen joining us from January 2023. Erkin has had a successful career in poultry, especially on the commercial side of the business. I am confident Erkin will continue to look after our Ross customers in the region with his vast experience. Aviagen will continue to invest in human resources to strengthen



Bulent-Tanyildizi



Erkin Erkmen

our teams in line with Aviagen's rapidly developing business in the region."

Erkin Erkmen joined the Aviagen TMEA team in January 2023 as Ross International Commercial Manager for the MENA region. Erkin is a Doctor of Veterinary Medicine with a Ph.D. degree in Poultry Pharmacology and Toxicology. He has worked in the poultry industry for 21 years, and has gained extensive experience and achieved great success in the Turkey, MENA and South East Asia regions through developing business in new markets and management of direct customers and distributors.

ROYAL PAS REFORM AND HIPRA TEAMS MEET TO SHARE SMARTVAC™ AND VACCINATION EXPERT KNOWLEDGE

As part of Royal Pas Reform's strategic partnership with HIPRA, the companies recently hosted a joint workshop at HIPRA's head office in Amer, Spain.

The event focused on the SmartVac™ in-ovo vaccination system, chicken immunology and HIPRA vaccines for in-ovo application. It was attended in person by 10 delegates from Royal Pas Reform and 20 from HIPRA, together with more than 50 others participating online.

On Day1, the HIPRA team

made presentations on poultry immunology and the different vaccines they develop in the field of in-ovo. HIPRA's latest in-ovo vaccine for coccidiosis in broilers (Evanovo®) is perfectly suitable for use with SmartVac™ since it requires injection into the amniotic liquid.

The group then visited the SmartVac™ demo unit in the HIPRA research facilities and opened vaccinated eggs in the lab to evaluate the Site of Injection (SOI): the specific

location of release of the vaccine within an 18.5-day-old hatching egg. The day concluded with a visit to the SmartVac™ operational unit in the hatchery nearby for all to watch the machine working in real-time.

After a tour of HIPRA's state-of-the-art HQ and R&D facilities at the start of Day 2, the specialist Pas Reform Academy team then gave presentations on embryology, hatch window, embryonic mortality and data management in the hatchery.



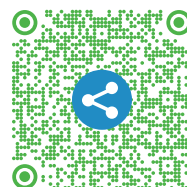
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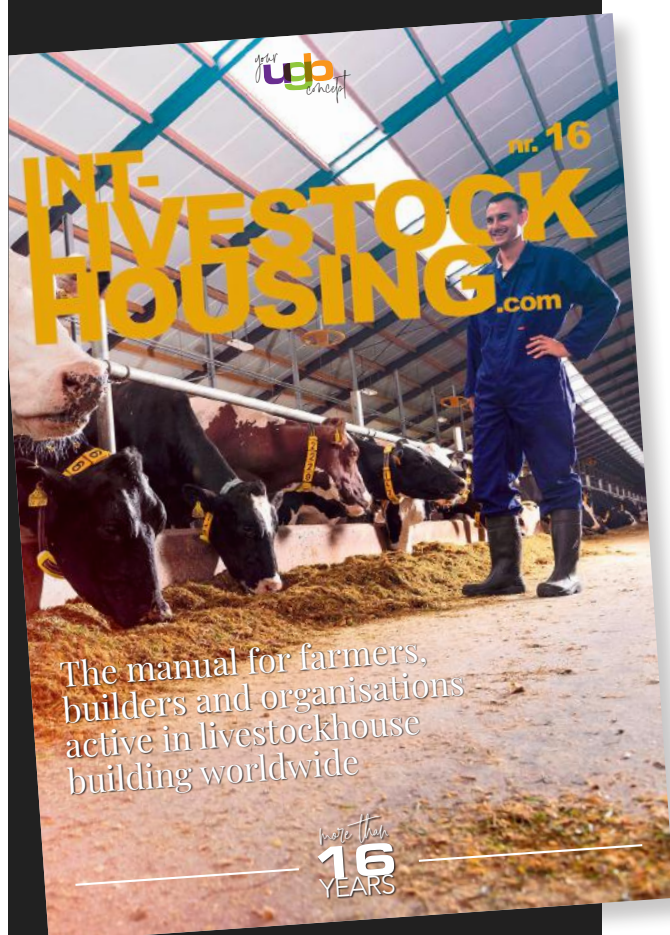
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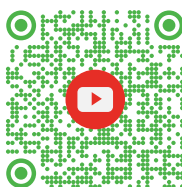
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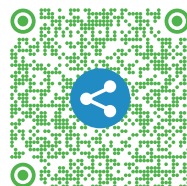
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INHOUSE FARMING AT AGRITECHNICA 2023: RETHINK AGRICULTURE!

Global food security through new agricultural production systems is one of the central tasks of the future. In the context of climate change, resource and production efficiency as well as advancing digitalisation, intelligent strategies of sustainable, technology-based food production are being developed. Modern agriculture plays a pioneering role here – from raw material suppliers to

producers.

The “Inhouse Farming – Feed & Food Show” at the world’s leading trade fair for agricultural machinery AGRITECHNICA is the DLG’s new platform for the agricultural and food systems of the future. Closely networked with agricultural practice, it offers technical information, perspectives, innovations and business – for feed and food.

AGRITECHNICA – for

the first time including the “Inhouse Farming – Feed & Food Show” – will be held in Hanover, Germany, from 12 to 18 November 2023. Under the guiding theme of “Green Productivity”, the world’s leading trade fair is the forum for future issues in agriculture. Visitors from around the world will meet key players and game changers in the agricultural sector at this leading trade fair.

RAINBOW TROUT MARKET IS EXPECTED TO SURPASS US\$ 7 BILLION BY THE END OF 2033

Global consumption of rainbow trout is forecasted to increase at a CAGR of 5.2% from 2023 to 2033. The rainbow trout market is valued at US\$ 4.2 billion and is estimated to reach a market size of US\$ 7 billion by the end of 2033.

Among seafood buyers, fresh rainbow trout consistently performs better than frozen and canned varieties. The

highly adaptable nature of fresh rainbow trout, along with its almost infinite variety of preparation options, will continue to increase consumer acceptance of food products. Due to the increased preference for organically created, morally manufactured, and farm-raised items, fresh rainbow trout will remain in demand.

The primary driver of the

growth of the worldwide rainbow trout market is the quick uptake of new technologies in the food and beverage industry. The nutritional advantages of rainbow trout are anticipated to stimulate market expansion.

Protein, which is necessary to support the efficient functioning of the vital organs, can be substituted with rainbow trout. In addition to protein, rainbow trout are high in vitamin B, potassium, phosphorus, selenium, and omega-3 fatty acids. Because of its excellent nutritional value, its demand is rising, which is boosting market growth.

Rainbow trout sales are being boosted by consumers’ growing attention to healthy foods, as well as the retailers’ wildly successful merchandising, marketing, and sampling. The popularity of rainbow trout will ultimately open up attractive growth potential for the market. It is additionally advised for those with mental disorders, heart illness, and cancer of the breast or prostate.





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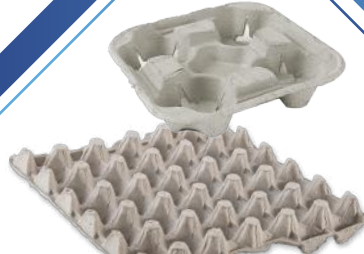
Twist Caps



Snap-on



Peel-off Lids (POE)



Cup Holder 4 & Egg Tray



Corrugated Carton



Food Cans



Tuna & Sardine cans



Disposable Products



Film Products



Injection



FAO PUBLISHES ITS FIRST GLOBAL ASSESSMENT OF SOIL CARBON IN GRASSLANDS

Improving management practices in grasslands—large areas covered with grass, especially used for animal grazing—can boost the capacity of soils as carbon sinks, and help countries reach their climate goals, according to a new report by the Food and Agriculture Organization of the

United Nations (FAO).

After oceans, soils are the second largest carbon pool on Earth and they play an important role in global climate change due to the large amount of carbon currently stored in soil organic matter.

The first FAO Global assessment of Soil Carbon in Grasslands measured the baseline of stocks of Soil Organic Carbon (SOC) — the carbon held within the soil that is measurable, expressed as a percentage by weight

(gC/Kg soil)— in both semi-natural and managed grasslands and estimated their potential of SOC sequestration.

The study found that if the SOC content in the 0–30 cm depth layer of available grasslands increased by 0.3 per cent after 20 years of the application of management practices that enhance soil organic carbon sequestration, 0.3 tonnes C/ha per year could be sequestered.

“Assessing the current state of grassland systems and their potential to sequester carbon in the soil is key to better understand the benefits of grassland services for food security, biodiversity conservation and climate change mitigation”, says Thanawat Tiensin, Director of FAO’s Animal Production and Health Division.



GATEGROUP COMMITS TO 100% CAGE-FREE EGGS GLOBALLY BY 2025

As the global leader in airline catering, retail-on-board and food service, gategroup has the commitment to helping build a better future. As part of this undertaking, gategroup has pledged to make its entire egg supply chain cage-free by 2025.

All egg (shell egg, liquid egg and mixes containing more than 80% egg) purchases globally will conform to certified standards of animal welfare that meet or exceed those dictated by local legislation. Its global, group-wide, minimum welfare standard is ‘barn’ (cage-free) eggs. gategroup is working with its partners and suppliers to achieve its goal of 100% cage-free eggs throughout the Group by 2025.

Gategroup has worked hard towards its cage-free eggs ambition over the last years to achieve more than 75% cage-free eggs globally. To achieve its goals, it is confronting the final challenge—working in those regions with a less mature sustainable supplier base. Despite the difficulties of promoting sustainability throughout a food supply chain that is both global and local, gategroup and its partners and suppliers are rising to the challenge. Eggs are just the first step. Gategroup is in the process of conducting a comprehensive audit of its suppliers to ensure that they are complying with its stringent procurement standards and will

be publishing its results in its first Sustainability Report to be published alongside its Annual Report in April.

“Gategroup is propelling industry change and reinforcing its dedication to superior culinary experiences with its global commitment to remove cages from its supply chains around the world,” said Hannah Surowinski, Global Corporate Relations Coordinator, The Humane League. “On behalf of the entire Open Wing Alliance, The Humane League commends gategroup’s ability to spearhead an accelerated model of progress towards higher animal welfare—having already transitioned 75% of its global egg supply to cage-free.”

NEXT-LEVEL DISTILLATION TECHNOLOGY CREATES NEW OPPORTUNITIES FOR ULTRA-CONCENTRATED OMEGA-3

Epax has reinforced its position as a leader in highly concentrated Omega-3 with a major upgrade to its facility and the launch of next-level molecular distillation technology.

The Norwegian marine lipid specialist was already one of the few companies guaranteeing Omega-3 with 90% minimum triglyceride content as standard. Now a \$40 million investment in its facility in Aalesund has enabled it to increase its distillation capacity and further improve its ability to offer premium quality Omega-3 concentrates.

The upgrade includes the introduction of highly sophisticated quality process technology. Branded EQP+Tech, it allows individual fatty acids to be separated from fish oil and ultra-concentrated without the use of excessive heat or harsh chemicals.

The black box-protected technology is the result of years of research and development. Using data from over a thousand test runs and analyses, Epax's process engineers studied the performance of various fatty acids in the company's high-tech molecular distillation equipment.

By finding the optimum balance between pressure, temperature and time, they identified the best possible way to separate each fatty acid from fish oil while retaining its natural quality.

Based on the research, Epax fine-tuned its re-esterification process and invested in new customised equipment. It includes highly sophisticated digital technology, with sensors monitoring thousands of data-points and making constant adjustments, allowing in-depth tracking of the re-esterification process and ensuring consistent high quality.



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TROUW NUTRITION LAUNCHES CUTTING-EDGE MOBILE NUTRITION TECHNOLOGY



Farmers and feed producers can take control of production and streamline costs with the launch of the mobile nutrition solution, the NutriOpt On-site Adviser.

Those in Germany and Spain will be some of the first to access the

powerful technology, as it rolls out globally. The NutriOpt On-site Adviser gives farmers and feed producers the capability to access real-time raw materials data and nutritional expertise on-site, making it easier to hit production and profitability targets.

NutriOpt's parent company, animal nutrition specialist Trouw Nutrition, will be pushing out the technology further afield in the coming months, working with customers to drive further innovation of the product.

Director of NutriOpt Andre Brand

said: "We are delighted to be launching our brand new, cutting-edge mobile nutrition solution to the market. We think it will be a genuine game-changer for professional farmers and to the feed industry. Understanding what's in your feed enables you to optimise production to create greater consistency and performance predictability."

"The NutriOpt On-site Adviser is the result of the combined work of our technology partner AgroCares and Trouw Nutrition's expertise on animal nutrition. With this solution, we've created a way to make it easy for farmers and feed producers to gain even greater control of their production. We aim to help enhance their feeding strategies so they can reach their business goals."

NOVUS ACQUIRES BIOTECH COMPANY AGRVIDA TO DEVELOP NEW FEED ADDITIVES

Global animal health and nutrition company Novus International, Inc., announced its acquisition of biotech company Agrivida Inc. Through the purchase, Novus takes ownership of the proprietary INTERIUS™ technology Agrivida developed to embed feed additives inside grain. This move by Novus comes two years after it began a commercial partnership with Agrivida to support the sale of the start-up's flagship product, GRAINZYME®.

"Since December 2020, we've taken the time to understand and explore what INTERIUS™ technology is capable of," says Novus President and CEO Dan

Meagher. "With this technology we believe we can revolutionize the feed additive industry through the expression of high-value, functional proteins inside grain, providing new products that are sustainable, both environmentally and operationally."

While the category of functional proteins includes enzymes, which Agrivida has already accomplished through GRAINZYME®, the Novus Innovation team is expanding the product offerings to include antibodies embedded in grain.

Instead of manufacturing feed additives by fermentation, INTERIUS™ technology tells the grain how

to make the additive directly in the grain. The grain is grown, harvested and ground, and fed to the animal like any other corn in diet.

Zimmerman says by having the additive inside the grain, the molecules are more efficiently absorbed by the animal, allowing producers to improve both performance and their return on investment. The acquisition includes Agrivida, Inc., and its operations in Massachusetts and Nebraska. The Agrivida team, including founders R. Michael Raab and Jeremy Schley-Johnson, will join Novus bringing with them their innovative approach to developing functional proteins.



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SILVER FERN FARMS BRINGS PREMIUM RED MEAT GOOD FOR YOU AND THE ENVIRONMENT

Meat is a wonderful source of protein which can provide the human body with many health benefits and advantages. Are you aware of what to look for when it comes to the quality of the meat that is provided by local supermarkets and butcheries? In terms of quality, meat will differ from one country to another and the way the animal has been raised and been taken care of throughout its life.

Introducing Silver Fern Farms, who have become a much loved and respected brand that provides premium red meat across the UAE Silver Fern Farms, founded

1948, is New Zealand's leading procurer, processor, marketer and exporter of premium quality beef and lamb to over 60 countries. It is a company of proud, passionate farmers and food people, creating goodness from the farms the world needs.

In New Zealand, the climate, clean air, and plentiful pure water fuels year-round growth of lush, green pastures. The animals are raised year-round, like nature intended, with the ability to wander and graze freely. The animals eat and live as they would naturally which greatly reduces stress, promoting better

animal welfare, and ultimately resulting in more tender and better-quality meat to eat. With the animals being fed a diet rich in grass, rather than grain fed as so many are today, the animals grow strong and healthy. As a result, the meat that is produced has a consistently delicious, distinctive flavour. The meat is leaner, more finely textured and nutritionally better for the human body. Compared to being grain-fed, grass-fed meat is lower in saturated fat, and higher in vitamins A and E, conjugated linoleic acid and omega-3 fatty acids.

THE NATIONAL AQUARIUM AND ENVIRONMENT AGENCY ABU DHABI RESCUES, REHABILITATES AND RELEASES OVER 500 SEA TURTLES

The Environment Agency - Abu Dhabi (EAD) and The National Aquarium (TNA) have safely rescued over 500 sea turtles as part of their joint Wildlife Rescue Program, the first rescue, rehabilitation and release initiative in Abu Dhabi. The programme was launched in July 2020 and includes purpose-built laboratories, research

and rehabilitation facilities at The National Aquarium. In 2022 Wildlife Rescue Program launched a first-of-its-kind rescue boat in the presence of HH Sheikh Hamdan bin Zayed, and plans are underway for a first-of-its-kind wildlife ambulance, capable of providing immediate first aid on

remote beaches. The programme continues to grow each year in an effort to protect and celebrate the natural treasures of the U.A.E.

In the last three years, the program has released four species of endangered

sea turtles, including the Olive Ridley and Loggerhead, which are uncommon in these areas. Two whale sharks, one of which measured 7 meters long, sea birds, sea snakes and a variety of exotic animals add to the list of successful rescues.

To monitor the success of the programme, the sea turtles and whale sharks were fitted with satellite tracking devices. This allows valuable research to be conducted into their post-release wellbeing and habits as they migrate thousands of kilometres through the ocean. This data is important both in this region and globally, as many of these animals will travel the world. The programme has also grown to include the Turtle Sanctuary located at Louvre Abu Dhabi, as a last step in rehabilitating the larger turtles before their eventual release.



BALADNA PARTNERS WITH GLOBAL CHEESE PRODUCER BEL GROUP TO EXPAND DAIRY OFFERINGS IN QATAR

Qatar's leading food and dairy producer, Baladna, has announced a strategic partnership with global cheese and snack giant, The Bel Group. The landmark collaboration brings new opportunities for both companies, starting with the production of The Laughing Cow® cheese jars in 2023. Baladna also aims to produce more of Bel Group's products in the near future.

Producing popular products by international brands such as Bel not only reduces imports and supply chain disruptions, but also provides a more responsible,

environmentally conscious option for Qatari consumers.

Commenting on the partnership, Malcolm Jordan, Chief Executive Officer of Baladna, said: "We are pleased to sign this partnership with Bel Group, who are world leaders in cheese products. This collaboration will allow us to expand the dairy offerings in Qatar and provide customers with even more high-quality products. As a leading dairy brand in Qatar, Baladna is committed to supporting food sustainability efforts in the country. We are excited to benefit

from Bel Group's unparalleled know-how as we look to expand our range of dairy products and make international brands more accessible in the Qatari market. We believe this partnership will have a positive impact on the dairy industry in Qatar and improve consumer choices."

Garo Matossian, Chief Executive Officer at BEL for Near & Middle East, said: "The Bel Group is deeply committed to making our products accessible to new consumers and building sustainable partnerships with local producers around the world."



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belgioioso.com/foodservice

f i p y

CHANGE IN TOP MANAGEMENT: DR. FRANK HILLER TO BECOME CHAIRMAN OF THE BIG DUTCHMAN BOARD OF MANAGEMENT

After 31 years as CEO, Bernd Meerpohl decided together with the Supervisory Board and the family shareholders of Big Dutchman that the time is right for a change in top management of the Big Dutchman group. Dr. Frank Hiller will bring new and external stimuli to complement the stable and proven management team. With Bernd Meerpohl taking over as Chairman of the Supervisory Board, not only will this position in itself be secured, but Big Dutchman will visibly remain a family enterprise.

"In the past decades, Bernd Meerpohl has shaped the development of Big Dutchman and set the course for the group's future. He always had all stakeholders in mind and was incredibly committed and dedicated to advancing the family business. The Supervisory Board and the family shareholders want to thank Bernd for all the

time and effort he invested in the company and the staff to make Big Dutchman the world leader in livestock farming technology. We are very happy that Bernd will continue to share his knowledge and remain responsible for the company as Chairman of the Supervisory Board, starting 1 January 2024 after a short hiatus. The outlook for our industry is complex, but promising. Against this backdrop, we have found an experienced and competent CEO in Dr.-Ing. Frank Hiller. He will successfully lead our globally active company in the next phase," says Jürgen Steinemann, current Chairman of the Supervisory Board.

Bernd Meerpohl explains: "Taking over my father's responsibility as CEO 31 years ago was an honour, as was advancing the company for the benefit of our customers all over the world and for the benefit



Dr. Frank Hiller

of our staff and their families. The Meerpohl family, my closest colleagues, the Supervisory Board and I believe that someone new should now take over the operational business of Big Dutchman to integrate new stimuli from the outside. Dr. Hiller's grounded approach fits us very well. With his doctor's degree in Mechanical Engineering, he brings along a more than solid foundation. In the course of his career, which included positions with some of the leaders of the mechanical engineering industry, for example Meiller, Leoni and, most recently, as CEO of Deutz AG, Dr. Hiller has gained extensive knowledge and proved that he is a team player who is very capable of leading an international company. I would like to thank Jürgen Steinemann, the Chairman of our Supervisory Board, for actively accompanying me personally as well as Big Dutchman in general these past years. I am very pleased that he will remain part of the Supervisory Board as deputy chairman. Personally, I will continue to support the company in my new position, as much as I can and in close cooperation with Dr. Hiller."



Dr. Frank Hiller (centre) will become new Chairman of the Big Dutchman Board of Management. Bernd Meerpohl (left) will pass the baton on with effect from 1 April 2023. On the right: Jürgen Steinemann, Chairman of the Supervisory Board.

MINISTER OF ECONOMY VISITS DIBBA BAY OYSTER FARM

H.E. Abdulla Bin Touq Al Marri, Minister of Economy, visited the Dibba Bay Oyster farm in Fujairah, renowned for producing oysters of the highest quality in the UAE. This was a part of the Economic Communication series of visits made by H.E. to the leading projects across all the Emirates to build effective relationships with the business community and offer incentives needed for sustainable growth and prosperity as they are key allies in advancing the UAE's new economic model in line with the objectives and 'the principles of the 50' and the cornerstones of the UAE Centennial 2071.

HE said: "In addition to reviewing successful experiences in establishing businesses, discussing growth plans, opening up new global trade opportunities in the upcoming period, and reviewing perspectives on economic development efforts, we are

committed to communicating with the leading companies in the nation. This will allow us to measure the effects of the legislation and initiatives launched by the government on the growth of their commercial activities.

Furthermore, this will assist in initiating proactive projects that advance the UAE's economic model, boost sustainable development, and enhance competitiveness of national projects, while satisfying investor desires."

H.E. met with the farm supervisors to learn more about their plans for future investments. He further discussed strategies to expand the



business model in the UAE and encouraged Emirati entrepreneurs to launch ventures based on cutting-edge technologies and innovation, as they support domestic production and are in line with the government's policies to increase exports, attract talent, achieve food security, and advance sustainable development goals.

ORDER SIGNED WITH A LARGE POULTRY PRODUCER

MTech Systems, a Munters company within business area FoodTech, secures an important Software-as-a-Service (SaaS) contract with one of North America's largest poultry producers. The order has a value of MUSD 4.3 (approximately MSEK 46).

MTech Systems will deploy the Amino platform, its newest and

most innovative SaaS solution.

The contract represents the establishment of a long-term partnership to enable the poultry producer to better control and analyze their full value chain including breeding, hatching, feeding and growing.

"This vital partnership continues the successful execution of our strategy focused on helping feed our growing world population. I am excited by the number of top producers that commit to our vision for monitoring and optimizing the entire food value chain to improve sustainability and animal welfare,"

says Pia Brantgärde Linder, Group Vice President and President FoodTech.

This agreement demonstrates the recognition of MTech System's products and services value within the industry. The software solutions and consulting effort will result in a consolidation and standardization of the producer's many food production complexes across the US.

"I am energized to add this important poultry producer to our significant North American client base, solidifying our role as the number one software solution provider for the industry. We look forward to further innovation and progression toward our common goals of sustainable and responsible food production," says Marcel Cohen, President of MTech Systems.



ITALIAN AGRI-FOOD EXPORTS TO THE UAE GREW BY 46% REACHING A RECORD VALUE



The Italian Minister of Agriculture, Food Sovereignty and Forests, H.E. Francesco Lollobrigida, and Matteo Zoppas, newly elected President of the Italian Trade Agency, inaugurated the Italy Pavilion at Gulfood

The Italy Pavilion and the Italian Food Lab at Gulfood 2023 were inaugurated by Matteo Zoppas, President of the Italian Trade Agency, together with H.E. Francesco Lollobrigida, Italian Minister of Agriculture, Food Sovereignty and Forests.

During the inauguration Matteo Zoppas said: "We are very proud that the export of Italian agri-food products to the UAE have reached double digit growth in 2022, with the larger increase among the whole products exported by Italy to the UAE: + 46%.

With the motto Sustainability is SustainABILITY, this year we are committed to boost even more

"sustainable Italy-UAE partnerships" also in the food sector. This would represent also be one of our concrete contributions for the Agenda of next COP28 which will be host in the UAE later this year."

As a matter of fact, organic agriculture plays a fundamental role in helping to preserve soil fertility and in contrasting climate change, the environment and the loss of biodiversity. With 17.4% of the total cultivation area dedicated to bio-agriculture (2.1 million hectares, + 79% from 2012), Italy is one of the European countries with the highest number of companies involved in the organic sector – over 80,000.

Over the last decade Italian



The Italian Minister of Agriculture receiving a copy of magazine from M. Matt, editor of Livestock & Poultry Middle East

agriculture recorded a drop of -32% for the use of phytosanitary products, confirming its position as the most sustainable country in Europe. The Italian industry with 30 M equivalent tons of CO generated is more virtuous than any other EU countries too.

"THE EXPORT OF ITALIAN AGRI-FOOD PRODUCTS TO THE UAE HAVE REACHED DOUBLE DIGIT GROWTH IN 2022, WITH THE LARGER INCREASE AMONG THE WHOLE PRODUCTS EXPORTED BY ITALY TO THE UAE"



Fahad Al Kitbi, Chairman of Ostrich Oasis, and Riyad Jabbar, Director of Al Tayeb International, a division of Lulu Group sign the agreement in the presence of Sheikh Ahmed bin Hamdan Al Nahyan, Yusuff Ali MA, Chairman and Managing Director of LuLu Group International

LULU GROUP SIGNS MOU WITH OSTRICH OASIS AT GULFOOD 2023

Lulu Group and Ostrich Oasis announced the signing of a memorandum at Gulfood 2023, the world's biggest food and beverage trade show concluded recently at the Dubai World Trade Centre.

The MoU signed between Fahad Al Kitbi, chairman of Ostrich Oasis, and Riyad Jabbar, director of Al Tayeb International, a division of Lulu Group, is a great turning point for the future. The grand event happened in the presence of Sheikh Ahmed bin Hamdan Al Nahyan, Yusuff Ali MA, chairman and managing director of LuLu Group International, along with other top officials from both companies.

Under the agreement, Ostrich Oasis will provide ostrich products in the UAE and the rest of the gulf

region and expand the business to a larger scale.

"Indeed, we are pleased to announce our tie-up with Ostrich Oasis, an Emirati company based in Al Ain, committed to promoting locally produced ostrich meat and related products to our hypermarkets in the UAE and the Middle East region", said

Yusuff Ali MA.

Today, ostrich farms are the most profitable agricultural projects. They are often called "the farms of the future" because of their high-profit potential and large variety of possible products. Ostriches are raised commercially for their meat, hide and feathers.



Livestock & Poultry Middle East magazine managing editor M Matt (middle) with Riyad Jabbar (left) and Shameem Sainulabdeen (right) at Lulu Group stand during Gulfood 2023

THE NORWEGIAN SEAFOOD COUNCIL MARKS 25 YEARS AS SUPPLIER TO UAE WITH EYE ON INCREASED REGIONAL TRADE



The Norwegian Seafood Council (NSC), a public company owned by the Ministry of Trade, is marking 25 years as a supplier of Norwegian seafood to the UAE as it looks to leverage its already substantial MENA trade presence to boost further growth and expansion in the region.

The NSC works closely with Norway's fisheries and aquaculture industry to improve markets for Norwegian seafood, using several research, development, and risk management processes.

As a global market leader and the largest provider of premium salmon, the NSC has established strong trade connections between Norway and the UAE. Over the past two decades, demand for high quality seafood from the Scandinavian nation has dramatically increased across the Middle East – largely due to rising demand for more sustainable seafood. As a pioneer in salmon farming, and with a reputable history of craftsmanship in seafood production, Norway remains at the forefront of sustainable seafood sourcing and consistently delivers fresh, healthy, and flavourful products.

The Middle East's shift towards healthier living has also influenced the growing demand for lean seafood options, along with increased sushi consumption in countries like Saudi Arabia. As a key ingredient in both a balanced diet and sushi meal, salmon is critical to the region's overall health and flourishing gastronomical scene.

With strict governmental regulations ensuring high standards of food safety – and thorough, sustainable management of natural resources – the NSC is looking to further penetrate the market with a supply of premium salmon that complements the region's appreciation for high-quality food.

Mr. Sten Arne Rosnes, the Norwegian Ambassador to the UAE, commented: "There is a great synergy between the supply and demand of the Norwegian and Middle Eastern markets, and the NSC has a unique opportunity to expand its presence and elevate the quality of seafood in the region. Its 25-year history of exporting to the UAE dates to 1998 – with a 200-tonne shipment of salmon – and has seen

tremendous growth in the years since. In 2022 alone, the NSC brought in more than 40 million meals to the UAE – and almost three times as much to the wider region."

"The Middle East remains one of the biggest growth markets for the NSC, and we're thrilled to have maintained such positive and lengthy relationships with local partners as we continue to align the delivery of Norwegian seafood with the region's high food standards and long-term sustainability goals," he added while talking to Food Business Magazine Managing Editor M. Matt.

Commenting on the future of the NSC in the Middle East, Ørjan Kjærvik Olsen, NSC's Head of Emerging Markets, said: "We're currently halfway through a four-year project, which will see us continue to collaborate with local stakeholders and invest in B2B arenas throughout



existing markets. Our focus in 2023 will be advancing trade relations with the UAE and Saudi Arabia, with the long-term goal of bringing premium Norwegian seafood to all surrounding regional markets.

"We want to keep working with local chefs, retailers, and government entities to ensure the sustainable delivery of our products and hope to introduce more of our country's seafood, like the Norwegian cod, soon."

JANUARY-MARCH 2023



Mr. Sten Arne Rosnes, the Norwegian Ambassador to the UAE (Right) and Mr. Ørjan Kjærvi Olsen, NSC's Head of Emerging Markets (Middle) with Mr. M. Matt, Managing Editor of Food Business Gulf & Middle East magazine (Left)



Author

Teun van de Braak,

Product Manager Hendrix Genetics Layers

The development of the long-life layer starts before they hatch, but that's a process which can't be influenced by the pullet rearer or egg producer.

As soon as the newborn chicks arrive at the rearing house, it is where they play a crucial role in the development of the birds. The productivity of a flock depends to a large extent on the successful attainment of bodyweight targets from an early age. The objectives during the brooding period are:

- Rapid growth to reach body weight target at 5 weeks of age
- Good uniformity from the beginning
- Excellent livability

From day-old to transfer to the production house, the bird will grow slowly, and organ development occurs at various ages. A lack of growth during

PREPARING FOR A GOOD START: THE BROODING PERIOD

each of the stages could have a detrimental impact on pullet quality. Any delay in growth at 4-5 weeks will be reflected in a reduction in bodyweight at 16 weeks and in the performance, particularly in mean egg weight in temperate climates. Please keep in mind: two birds with the same bodyweight haven't necessarily developed the same body composition! **A rule of thumb: good growth curves result in good pullet development.**

Growth can be divided in the

following stages:

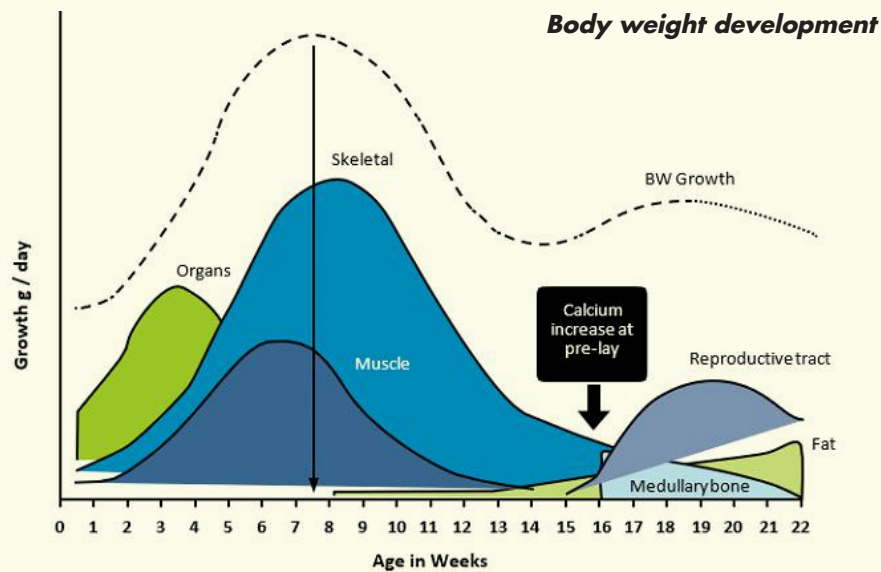
- The first 3 weeks are devoted to the development of the organs and the immune system.
- From week 3 to week 6, skeleton and muscles are growing. Bodyweight at 5/6 weeks is the most important determinant of pullet quality. Any delay in growth at this stage is harmful to the birds, as it will have detrimental impact on pullet quality and body composition, which will in turn impact negatively the birds' performance.

- From week 6 to 15 growth is starting to slow down
- The final stage is characterized by ovary development and rapid growth of these organs. Sexual hormonal regulation takes place around 18 weeks and leads to sexual maturity around this age.

Preparing for Chick arrival

The success of brooding depends a lot on a good start for the chicks. Most of the chicks have travelled for quite some time and they are looking for a safe place that provides them with water, feed, a comfortable environment and a good place to rest. We have listed here the key points:

- The houses should have been cleaned, disinfected and empty for at least 14 days. The houses and its content should be dry before the new chicks come in.
- Start the heating system 24 to 36 hours before the chicks arrive (depending on climatic conditions). The brooder area and litter area should be warm enough with a constant temperature in the range of 33 – 35°C when the chicks arrive.
- Flush water lines prior to arrival of the chicks, make sure no disinfectant is left in the water lines when the chicks arrive.
- Make sure that the nipples and round drinkers are at the correct height: nipples should be at eye level of the chicks and round drinkers on the floor.
- Whatever drinking system is in use check whether the water supply is sufficient. When nipples are used, adjust the water pressure so that the chicks can see the water drop on the nipple and the water flows easily, at the lightest touch.
- If the chicks have been infrared beak treated in the



hatchery, it is very important to use sideways activated nipples (360°) or nipple drinkers with cups and to use supplementary starting mini drinkers.

- Put paper under the nipples to attract the chicks and put extra feed on the paper or in cardboard trays.
- Check that all the birds, even the smaller ones, have access to feed and water.
- After a long transport duration, it is useful to wait for 3 to 4 hours before distributing feed, to make sure chicks first drink enough water to restore their body fluid.

- During the first 2 days use tepid water at 25°C to 30°C.

- In hot conditions, be careful not to let water temperature increase too much, as this may reduce the feed intake of the chicks. Regularly flush the water lines to maintain the temperature.

- Monitor the water consumption.
- Avoid water spillage by the chicks as this will maintain litter quality.

- Always keep the drinkers clean, for the first 2 weeks, they should be cleaned at least daily.

Keep your chicks warm

Keep in mind that during the



Standards for temperature and humidity

Age (days)	Brooding temperature		Room temperature	Relative humidity
	At the edge of the brooders	At 2-m from the brooders		
0 - 3	35°C	29 - 28°C	35 - 33°C	55 - 60°C
4 - 7	34°C	28 - 27°C	32 - 31°C	55 - 60°C
8 - 14	32°C	27 - 26°C	30 - 28°C	55 - 60°C
15 - 21	29°C	26 - 25°C	28 - 26°C	55 - 60°C
22 - 24		25 - 23°C	25 - 23°C	55 - 65°C
25 - 28		23 - 21°C	23 - 21°C	55 - 65°C
29 - 35		21 - 19°C	21 - 19°C	60 - 70°C
After 35		19 - 17°C	19 - 17°C	60 - 70°C

first few days, the chicks must rely on the temperature that we maintain before their own thermoregulation starts to work properly. In order to ensure that the equipment and the litter are warm for chick arrival, it is advised starting to raise the house temperature at least 36 hours before chick arrival so that the air temperature reaches 33 to 35°C when the chicks arrive. The concrete floor must be at 28°C and the litter at 30°C. The best way to check if the house temperature is correct during the first days after arrival is to measure the cloacal temperature of the chicks (40°C). It is recommended taking the temperature of at least 20 chicks throughout the house to get a good indication of the situation. Day-old chicks cannot regulate their own body temperature, so they depend on ambient conditions. Be aware that chick body temperature reacts quickly after ambient conditions have been changed. Find the correct set point for house air temperature by managing the body temperature of the chicks. Start checking the

body temperature of the chicks every hour after placement. Keep checking body temperatures until the correct temperatures have been achieved and the situation is stabilized. At day 5 the chicks will normally be able to keep up their own body temperature (within limits) and a rise in body temperature will automatically follow to about 41°C. From there on, set point for house air temperature can be gradually reduced to reach around 20°C at 5 weeks of age (e.g. 0.5°C per day). Temperature standards

"AT ALL STAGES FLOCK UNIFORMITY NEEDS TO BE REVIEWED. THE OBJECTIVE IS TO HAVE A VERY HIGH UNIFORMITY IN ORDER TO FACILITATE FLOCK MANAGEMENT AND STIMULATION. LOW UNIFORMITY LEADS TO POOR LAYING PERFORMANCE! THE NUMBER OF FEEDERS AND DRINKERS, FEED DISTRIBUTION, THE PRESENTATION OF THE FEED AND THE FARMERS' MANAGEMENT ARE STRONG CONTRIBUTORS TO ENSURE UNIFORMITY. HETEROGENEITY AT EARLY AGE HAS A NEGATIVE IMPACT ON UNIFORMITY DURING TRANSFER."

are given in the table above, but again: **the observation of the behavior of the flock is the best indicator of the real needs of the chicks!**

- If the chicks crowd together under the brooder, the temperature is too low.
- If the chicks are close to the surround, inactive, lethargic and spreading away from the heat source, the temperature is too high.

For more information, visit www.hendrix-genetics.com



VISIBLE LIGHT SPECTRUM FOR ANIMALS



The visible spectrum is the portion of the electromagnetic spectrum that is visible to, and can be detected by, the eye. A typical, healthy human eye will respond to wavelengths from about 400nm to 750nm. Different wavelengths indicate colors in the visible spectrum ranging from violet 400nm to deep red color 750nm with a significant sensitivity peak for humans at 555nm green. As bizarre as it may sound, there is no white or natural light “wavelength”. Natural white light is a combination of different color wavelengths. Think of how light traveling through a glass prism

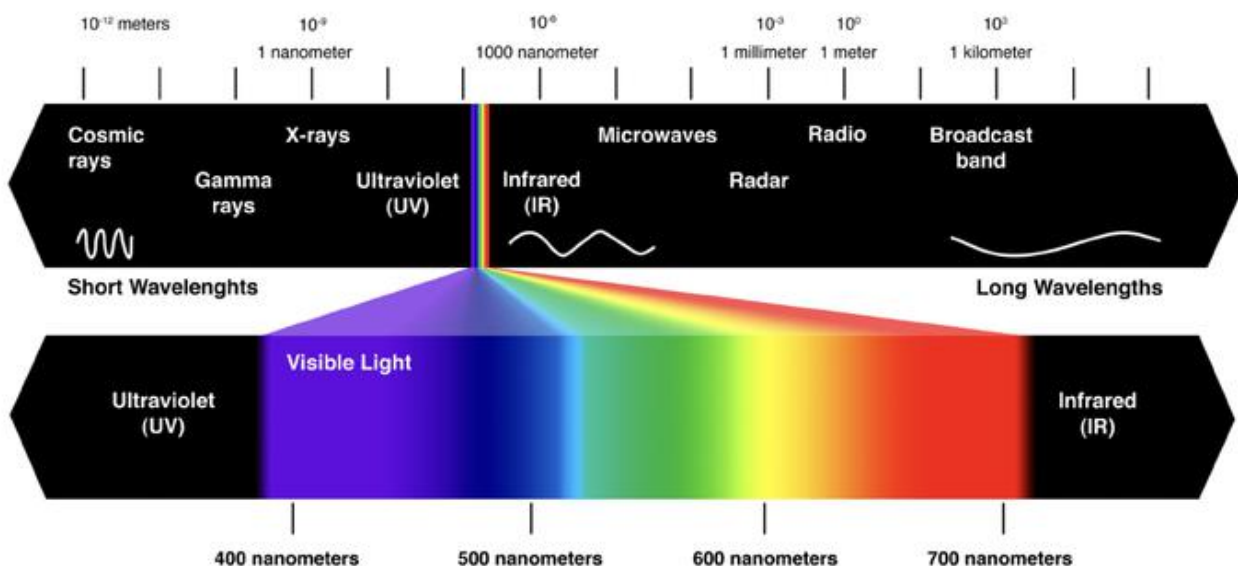
turns into visible monochromatic colors of light called the color spectrum. Now mentally reverse the process where the same colors combine and turn into visible light where we don’t discern the individual colors – even though they exist and play a role in how we feel, act, and what happens within our bodies.

Many animal species perceive light different than humans, as their eyes contain different photoreceptors. Poultry and

chickens are more sensitive in both the short as the long wavelengths. Research performed by Prescott and Wathes, showed chickens can perceive light 12 times better in the blue spectrum and 4 times better in the red spectrum. Chickens are even able to see part of the UV-A spectrum, that is not visible to the human eye.

For more information, visit www.once.lighting

“POULTRY AND CHICKENS ARE MORE SENSITIVE IN BOTH THE SHORT AS THE LONG WAVELENGTHS. RESEARCH PERFORMED BY PRESCOTT AND WATHES, SHOWED CHICKENS CAN PERCEIVE LIGHT 12 TIMES BETTER IN THE BLUE SPECTRUM AND 4 TIMES BETTER IN THE RED SPECTRUM.”





EMERGENCY NEWCASTLE VACCINATION FOR COMMERCIAL LAYER

Article by:

Vet. Mostafa Abd Ellatif

12 years experience in poultry field, 8 of them in layer field working in EL Banna Co. for poultry production

This article reflects field experience for Newcastle virus infection in commercial layer flock and

after we ensured the cause is only Newcastle virus and not accompanied with influenza H9N2 we used the two weapons we have in hand (vaccinate emergency in one time and don't vaccinate until infection is over).

In case of Newcastle virus infection poultry veterinarian differs between two opinions:

First: Once egg production decreases don't vaccinate until decrease stops and begin to increase.

Second opinion: if the cause of infection only ND so do emergency vaccination within 5 days of decrease of production.

So, in our case: white Babcock layer flock (100,000 birds) aged



The influenza H9 result similar to our baseline in farms in Egypt (we see infection and production decrease by H9N2 when titer reaches 12).

So we took decision with emergency vaccination and we did it after 7 days of beginning of production decrease (unfortunately we delay for regulatory affairs and may this delay cause strong decline of production).

So what happened after lasota spray vaccination?

Production decrease drastically to 83.6% within 12 days (8.5% decrease) then after 12 days it begin to increase to reach 91% in also 12 days then it reach to maximum to 94.2% after 2 weeks later.

Then another ND infection happened for the same flock at age 41 weeks and we took blood samples for ND and AI H9N2 and results were:

So again we have ND here, after discussion we thought the first infection have already antibodies in the flock and we don't want that sever decrease of the production that happened before so we didn't vaccinate.

So what happened?

Slowly decrease in egg production within 6 weeks it reach to 83.3% and begin to increase in the 7th week gradually and it reach its peak production at 88.4% after 5 weeks from beginning of the increase.

Few comments:

1. Emergency vaccination in case where there is only ND is the best choice.
2. ND infection can reoccur in the same flock within 9 weeks.
3. Not to vaccinate decision aid spreading of the infection to other flocks while emergency vaccination accelerate the end of infection.
4. Not to vaccinate decision was based on idea of presence

32 weeks reach 95% production then production begin decrease 3% within 4 days reaching 92% so we took blood samples and the results for ND were.

houses	sera	AI H9N2 (HI titer log -2)							
NO.	NO.	9	10	11	12	13	14	15	16
H1	15		2	5		4			4

houses	sera	AI H9N2 (HI titer log -2)							
NO.	NO.	5	6	7	8	9	10	11	12
H1	15						4	11	

houses	sera	NDV(HI titer log -2)							
NO.	NO.	8	9	10	11	12	13	14	15
H1	10					5	2	2	1

While influenza H9 was as usual titers in the farm:

houses	sera	AI H9N2 (HI titer log -2)							
NO.	NO.	5	6	7	8	9	10	11	12
H1	10					1	5	4	

of antibodies from previous infection, so if there is not infection it would be worse unless the challenge is small.

5. Earlier emergency vaccination is better.

6. In old flocks around 80 weeks or with Mycoplasma or other stress conditions we didn't recommend emergency vaccination.

MYCOTOXICOSIS A BIG THREAT TO POULTRY

Mycotoxin is hidden enemy for poultry farming. Mycotoxin become worldwide problem due to high incidence and level of occurrence in animal feed. Increase in feed cost has just aggravated this problem. Mycotoxin have high potential risk to public health as well. According to the FAO approximately 25% of the world's agricultural products is contaminated with mycotoxins, and this contamination maybe due to saprophytic fungi before harvest of these crops while they are still in the field, during the process of harvest, and even after harvest during the storage of these. The most common poultry feed ingredients contaminated by mycotoxins include - Maize, Wheat and wheat by-products and Soybean meal. Storage condition of grains and environment factors are major factors for development of mycotoxicosis. Aflatoxins (AF), zearalenone (ZEN), ochratoxin A (OTA), fumonisin (FUM), trichothecenes such as deoxynivalenol (DON), and T-2 toxin are some of the mycotoxins that can significantly impact the health and productivity of poultry. In



Dr. Ramdas Kambale
CEO & Board Member
GLOCREST Pharmaceutical Pvt.

general, contaminated feeds usually contain more than one mycotoxin.

Extreme weather conditions, heavy rain and drought lead to plant stress making them more susceptible to fungal infections. Mycotoxins are small and stable metabolites produced by fungi which can contaminate a wide variety of crops. The contamination of food and feed by mycotoxins is a global safety issue due to their adverse effects on human and animal health. In livestock & poultry, mycotoxins lead to important decreases in performance (growth, feed efficiency or reproduction issues) and consequently losses of revenue for farmers. Common effects mycotoxin in poultry are reduced



Dr. Mahesh Rajurkar
Product & Techno-Commercial Manager,
GLOCREST Pharmaceutical Pvt. Ltd.

feed intake, poor weight gain, poor feed efficiency, poor growth performance, immunosuppression and poor hatchability along with increased mortality.

Mycotoxins vary in their chemical structures, which results in vast differences regarding their chemical, physical, and biochemical properties. While considering the great variety of mycotoxin structures there is no single method, which can be used to deactivate mycotoxins in feed. Therefore, different strategies have to be combined in order to specifically target individual mycotoxins without impacting the quality of feed. The best-known method for mycotoxin deactivation is "binding" with the use of binding agents, which are referred to as mycotoxin binders, adsorbents.

Prevention and Control of toxin in feed by :- **TOXK/L**

Being an industry pioneer, GLOCREST & its peers, has more than half a century of combined expertise in the





development and manufacturing of nutrition products - developed broad spectrum economical toxin binder – **TOXX/L**. It counteracts mycotoxins in three ways – By silicate binding, Mycotoxin destruction and by Liver protection.

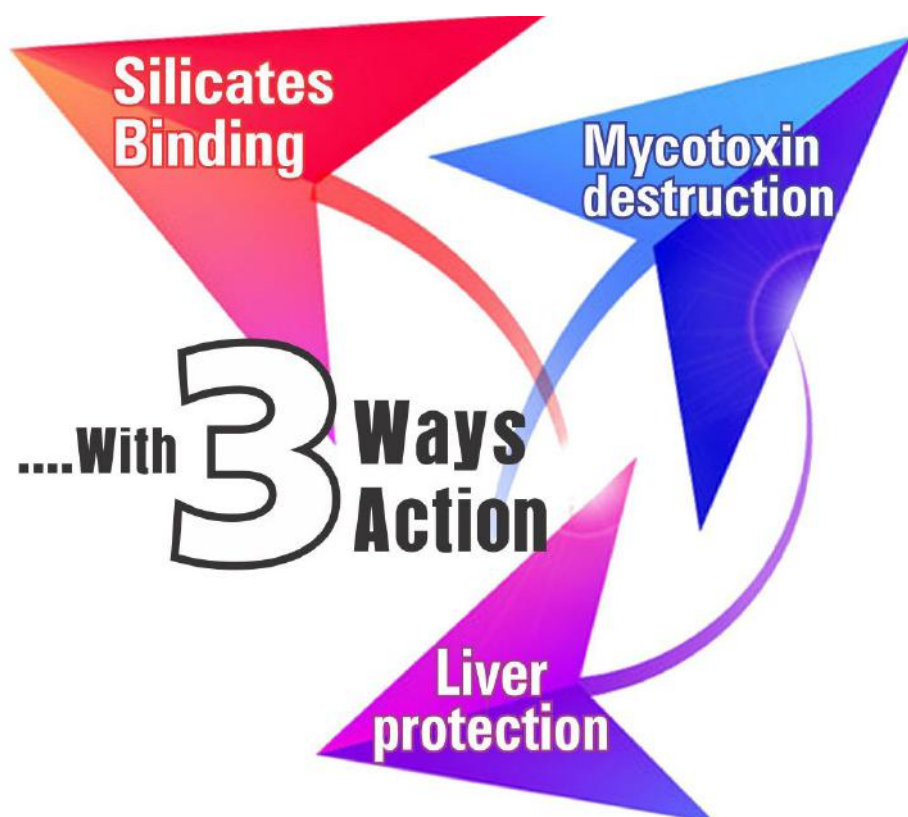
TOXX/L contains – MOS, PVPP, Copper oxime, Choline chloride and Sodium butyrate, Humic acid, Activated charcoal and HSCAS. It binds polar and non-Polar mycotoxins e.g., Aflatoxins, ochratoxins, Ergot poisoning, Deoxynivalenol, zearalenone, T2 toxin, Fumonisin, etc.

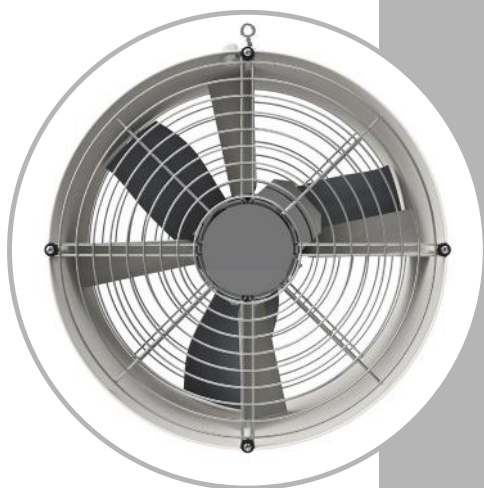
TOXX/L is safe and efficient and economical toxin binder.

Role of Humic Acid in **TOXX/L** – It helps to stabilise the intestinal microflora to help nutrients absorption. It acts as antibiotic like substance as alternative to

growth promotor. It is one of most safe organic acids. It has unique action to bind moulds and fungus outside body as well

as when feed is under storage. It acts as synergistic with other essential nutrients.





FAN IN PLASTIC, IT'S FANTASTIC!

Termotecnica Pericoli presents its latest air circulation fan made of plastic

Termotecnica Pericoli launches its new air-destratifier and looks for new market fragments. ACF21p is in fact the first fan produced by the historic Italian Company made of plastic with a high concentration of fiberglass and it is the ideal product whenever air displacement is required.

It is available in 21" only and the fan body is monobloc with an embedded airflow stabilizer with a sturdy housing and several hanging options.

The propeller, available with 3 or 4 blades, is made of plastic with a special impeller shape design. It is monobloc and its reduced weight ensures high energy efficiency and excellent versatility.

The safety nets are in galvanized steel for maximum corrosion resistance.

Improved loading possibilities

Compared to the classic version of metal ACF, this product has improved loading possibilities:

- +38% in container 20ft
- +36% in container 40ft
- +59% in container 4ft HC and
- +71% on truck.

Better performances

Furthermore, its excellent performances have been improved again (compared to the classic version) with:

- +19% airflow 50hz
- +20% airflow 60hz
- +15% ccfm/W 50hz
- +25% ccfm/W 60hz.

This product is tested BESSlab.

For more information, visit
www.pericoli.com



Signs



Housing & Management



Feeding & Nutrition

Can you **stop heat** from becoming a stress?

Achieving an effective heat stress strategy for your dairy herd requires you to focus on three fundamental areas.

Alltech experts can help evaluate your current heat stress strategy and provide nutritional advice and technologies, such as Optigen®, Yea-Sacc®, Sel-Plex® and Bioplex®, to optimise your dairy herd's rumen function and feed intake, ensuring your animals stay profitable and heat stress-free.

To learn more, contact your local Alltech representative or visit our website:

Alltech.com/AE-EN

ALLTECH MIDDLE EAST
Tel. +971 50 626 8125
info-me@alltech.com



DETECTING BLOOD SPOTS IN WHITE AND BROWN EGGS

Moba egg graders are packed with technology. Some designs are worth further investigation as they represent crucial customer value. By using spectrum analysis, blood spots can be detected in all egg types, even the darkest brown eggshells.

It doesn't happen often, but some eggs can have blood spots. These spots develop during the egg-laying process when tiny blood vessels in the hen's ovaries or oviduct rupture. The spots are hard to detect with the human eye — even impossible in brown eggs. However, there is a way to remove these eggs from the batch as Moba egg graders can be equipped with an optional blood detection system. If

an egg with a blood spot is detected, it can, for example, be sent to a conveyor assigned for off-grade eggs or to the end of the machine.

But how are these eggs detected? When an egg contains blood particles, a chemical substance known as hemoglobin (the chemical that gives blood its red color) penetrates the albumen and yolk of the egg. This results in a diffused presence of hemoglobin in the egg that is not visible to the human eye. This is where Moba's blood detector makes the difference, as a spectrum of LED light is sent through the egg making it possible for blood spots to be detected by the detector's electronics (see image).

The blood detector measures

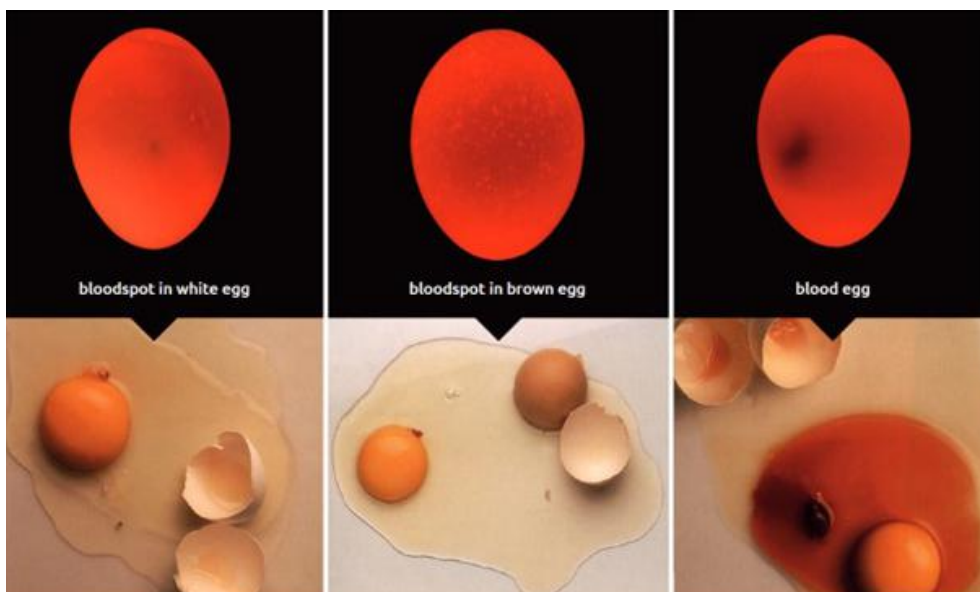
two signals; one is the wavelength of hemoglobin, and one is a reference signal. These two signals are processed through a computer algorithm and will give information about the presence of hemoglobin in the egg.

Moba's blood detector, the BD20, uses the latest narrow-spectrum LED technology. This lighting technology emits narrow bandwidth light at the individually required frequencies in the spectrum. This lighting technology creates two huge advantages:

1. As no light energy is wasted in the unwanted parts of the light spectrum, filtering the hemoglobin frequency and nearby reference signal results in a very accurate measurement.
2. As the LED lighting is fast and very easy to control, the computer of the BD20 can take multiple sample measurements per egg and set the lighting optimally to detect the presence of blood spots in each egg, resulting in the highest level of accuracy.

The use of this optical system and statistical data processing makes Moba's blood detector one of the most sensitive systems on the market. This unique sensitivity will ultimately optimize egg quality, giving you total control.

For more information, visit www.moba.net



ANIMAL FEED PROBIOTICS MARKET TO HIT US\$ 390 MN BY 2030

As per the report by Global Market Insights, Inc. "Worldwide Animal Feed Probiotics (AWG) market was valued USD 200 million in 2021 and will surpass a revenue collection of USD 390 million by 2030 with an annual growth rate of 7% over 2022 to 2030."

The global animal feed probiotic market is projected to propel significantly through 2030 owing to the hike in compound feed production.

Major corporations are increasing their research and development spending in order to introduce cutting-edge animal feed, which is expected to positively impact market expansion. The demand for convenient and ready-to-eat meat products is rising, which is likely to drive industry revenues in the Europe region. Furthermore, the Asia Pacific market is set to experience growth due to an increase in the prevalence of intestinal disorders in cattle.

Based on product, the Bifidobacterium segment is slated to proliferate at more than 6% CAGR from 2022 to 2030 as boilers can use a variety of Bifidobacterium applications to lessen the likelihood of cellulitis-related carcass contamination, which results in the significant need in the animal sector. The others segment is set to showcase steady market expansion over the analysis timeline because of the growing emphasis on daily livestock healthcare and the availability of a wide range of products, including various strains

that may aid in reaching desired outcomes.

With respect to livestock, the poultry segment is estimated to witness sizeable growth over the review period credited to the demand for chicken goods like eggs and meat rising, which is driving up the scale of poultry production and, consequently, the demand for probiotics for animal feed.

Meanwhile, the aquaculture segment is expected to proliferate substantially by 2030 ascribed to the inclination to consume more seafood is increasing the demand for nutrient-rich aquaculture feed to attain high-quality marine livestock. On the other hand, the equine segment is anticipated to register positive valuation through the assessment years driven by the increasing trend of pet parenthood.

In terms of the regional outlook, the Europe is set to experience robust growth rate over the review

timeline attributed to the growing regional demand for seafood. The other factors impacting European revenues are the introduction of new technology and the inclusion of healthy components in animal feed.

In the meantime, the Middle East & Africa animal feed probiotic industry is set to amass significant profits by 2030 since the expansion of other industries has increased demand for fish food while lowering total costs and enhancing global consumer access to seafood. Industry demand has fueled investment growth with a goal of creating better, safer technology.

The Animal Feed Probiotics market consists of Koninklijke DSM N.V., ADM, DuPont, LAND O' LAKES, Evonik Industries, Novus International, Inc., Arm & Hammer Animal Nutrition, OHLY, Provita Eurotech Ltd., Kemin Industries Inc, CHR. HANSEN, and Alltech.



SOLID & SCIENCE-BASED TECHNOLOGY TO OPTIMIZE FEED COSTS

One innovative technology based on the micro-encapsulation of seaweeds and plants extracts, which stimulate digestive functions, can help secure performance, and reduce feed costs, according to recent research program.

The cost of feed continues to be a headache for nutritionists and producers, with the poultry industry being extremely sensitive to feed price volatility, compared to other animal protein segment. Indeed, feed ingredients suppliers globally have had to address incredibly long lead times,

exorbitant shipping costs, labor shortages, and unprecedented demand for packaging components since the pandemic began. Lately, we see as well the rise of energy costs and the grain prices. Consequently, there is a need to identify savings to preserve margins for producers.

One option for nutritionists consists in increasing the feed efficacy of animals to reduce the cost of feed per unit of meat produced and/or to increase digestibility to reformulate feed and reduce feed costs. Looking for savings often has a knock-on effect on the feed additives usage



Dr. Stéphanie Ladirat
R&D Director, NUQO

as people try to pull cost from the diet. Therefore, feed additives suppliers need to demonstrate a clear value to their customers for the technology they offer, based on a true rigorous scientific approach. As an example, using enzymes to optimize feed costs is commonly accepted, while the implementation of so-called matrix values for other categories of feed additives is still limited, thus some room for further improvement.

The new standard for phytogenic feed additives

Recently, a feed additives company developed a new kind of phytogenic solution (NUQO®NEX). It contains a combination of metabolites from plants but also from algae (phytogenic and phycogenic), protected via a unique micro-encapsulation technology. With a high concentration of actives and a high stability, this solution guarantees a precise release in the gut and cost-effective dose, like no other solution currently. This technology has been developed to maximize poultry performance. It can be used as an alternative growth promoter or to optimize feed conversion ratio and performance to ultimately increase return of investment of poultry operations.

While several trials have confirmed the efficacy of this technology to improve performance of broilers in various context and geographies, scientists have worked in parallel to evaluate the specific impact of this technology on feed digestibility in order to give more flexibility to formulators and nutritionists.

Impact of various phytogenic solutions on feed digestibility

A recent trial was performed at the university of Berlin (Germany), to compare the effects of 4 treatments: One negative control, two commercial products based on phytogenics (P1 & P2), and a new technology (NUQO®NEX / NQ). The effects were measured on performance of the birds and apparent ileal digestibility of feed at 21 days of age. Researchers observed that the combined product not only improved digestibility of nutrients (crude

fat, crude protein, and starch) but increased digestibility of minerals (crude ash, calcium, and phosphorus) as compared to the negative control. The other two solutions improved digestibility of some nutrients and minerals but to a lower extend than NQ. Performance results at 21 days are well in line with the observed effects on digestibility. The NQ treatment had the strongest effects on nutrient and mineral digestibility, and had the highest improvement in performance at 21 days, with better gain (+2,2%) and improved FCR (-0,6%) as compared to the control. All in all, the treatment NQ showed an improvement of feed digestibility that resulted in an improved performance, compared to classic products based on phytogenics.

Concrete impact on feed costs with a conservative? matrix value

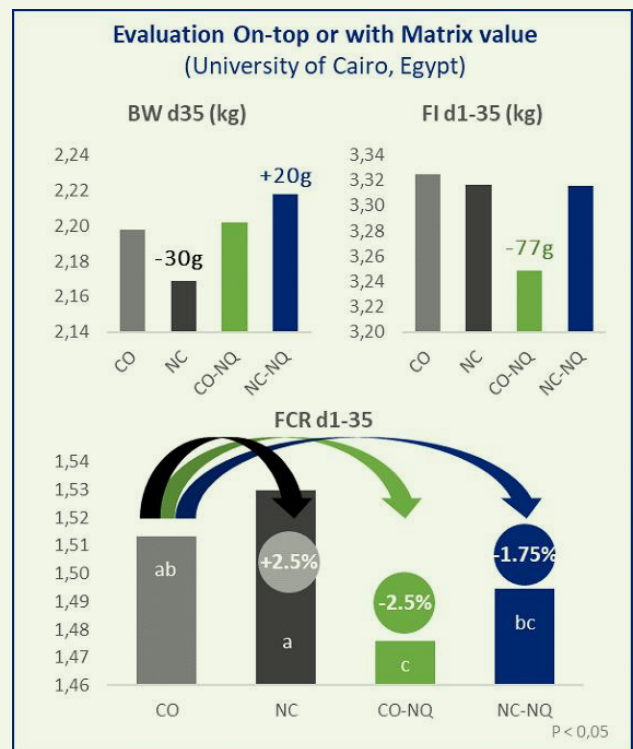
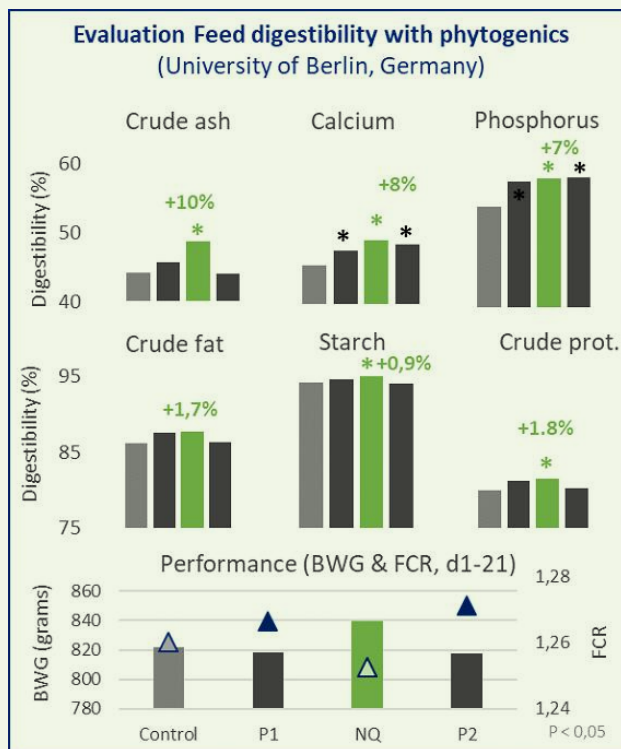
Another trial was conducted on a research farm, in Cairo, Egypt during 35 days in summer 2022. The broilers were fed a 3-phases diet (Starter/Grower/Finisher). The negative control diet was formulated with a matrix value of 30kcal and 0,3% crude protein. All diets contained enzymes (Phytase and NSP) and toxin binders. Starter and grower diets included a coccidiostat but no growth promoters. The Inclusion levels of various feed additives were as prescribed by the respective manufacturers in all diets. A matrix value for the enzymes was also applied



according to the manufacturer's recommendations, meaning that the matrix value of NUQO® NEX was applied on-top of the enzyme matrix. In a nutshell, the 4 treatments were as follows: CO: Control (without antibiotics) / NC: Negative Control (-30kcal/-0,3%CP) / CO-NQ: CO with NQ "on-top" / NC-NQ: NC with NQ and its "matrix" application.

When used "on-top" NQ had a lower feed intake (-2,2%) but a similar final body weight, resulting in a significantly improved feed efficiency (-2,5%; $P < 0,05$). Considering the current local feedstuffs price and the bird performance of this trial, it was calculated that using NQ on-top of the feed brought a return on investment (ROI) of 5 to 1 for the operation.

When used with Matrix: First, at day 35, the broilers fed the negative control diet impaired performance as compared to the birds fed the control diet (-1,3% BW and +1,1% FCR). When used in a diet formulated with a matrix value of 30kcal and 0,3% crude protein, NQ improved feed efficiency as compared to NC ($P < 0,05$) and helped restoring the



bird performance as compared to CO. It even numerically improved BW and FCR beyond the control diet (CO). Therefore, the matrix value of 30kcal/0,3%CP can be considered as conservative. From an economics standpoint, there is a high interest of using NQ technology with a matrix value. It allows to save feed costs and brings even additional performance. Based

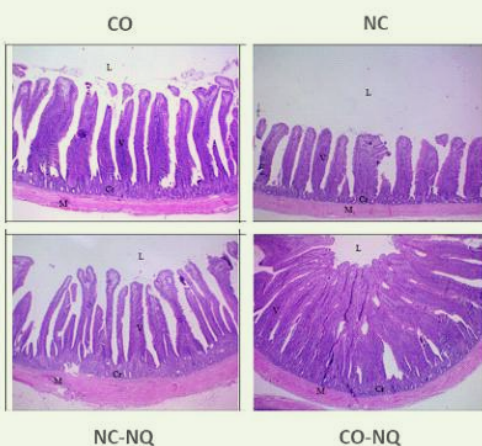
on current local feedstuff price and performance in this trial, it represented a net profit for the producer (0,016€ Profit/kg Live Weight).

Performance improvement upon the addition of NQ treatments was accompanied with an improvement of the gut morphology as compared to CO: longer villi height (P < 0,05) for a similar villi height to crypt depth ratio. These results indicate that the absorption capacity was increased while the cell renewal needed for longer villi height did not come at the costs of energy for growth. Besides, further investigation have shown that NQ technology could reduce the levels of C. Perfringens and Coliforms and improved the level of Lactobacillus in the diets formulated either with or without matrix value (P < 0,05). The caecal pH was also reduced when using NQ technology (P < 0,05), probably due to the higher level of Lactobacillus observed in the caecum, that produced lactic acid.

A safe & science-backed technology to preserve margin and profits

Nowadays, while 70% of poultry production costs are feed related, feed efficiency is obviously a major focus for profitable poultry production. Improving nutrient utilization to optimize performance in poultry is a powerful strategy and meets consumer demands and expectations from the market. A new technology has been developed to specifically boost digestive functions and gut health of birds. Synergistic effects of selected phytochemicals and phytogenics, protected with exclusive micro encapsulation technology, contribute to improvements in feed efficiency and increased performance and livability in all poultry species; thus, reducing the production costs per kg of animal protein produced, with a higher magnitude compared to existing phytochemical products.

Impact on gut morphology
(Impact on Villus height & Crypt depth)





EVONIK MULTIPLIES PRODUCTION CAPACITY FOR PROBIOTICS

Evonik has modernized and expanded probiotics production at its site in León, Spain, laying the foundations for further growth in the Gut Health Solutions business. The capacity for producing Ecobiol®, Fecinor® and GutCare® has been more than doubled. The León site can now produce the equivalent of 6,000 metric tons of blended final probiotic product per year.

With a stronger focus on probiotic-based alternatives to antibiotic growth promoters, Evonik's Animal Nutrition business line aims to provide solutions that ensure the well-being and performance of the animal while protecting human health and supplying a growing world population with high-quality animal protein.

"Providing sustainable solutions for improving animal health and well-being is a matter close to our hearts, and at the same time a strategically important

growth business for Evonik," says Gaetano Blanda, head of Evonik's Animal Nutrition business line. "With this expansion in León comes the ability to meet the growing demand for our probiotics product line. We will continue to demonstrate the impact of our solutions on the microbiome, gut function, and animal performance."

Probiotics are living microorganisms added to animal feed to maintain or restore the microbial balance in the animals' intestines. "As long as there are enough 'good' bacteria to keep potential pathogens at bay, an animal remains healthy," explains Torben Madsen, head of Sustainable Healthy Nutrition at Evonik Animal Nutrition. "A stable gut microbiota also strengthens the animal's immune system, helping to prevent disease."

Evonik Animal Nutrition has developed an innovative portfolio of Gut Health Solutions based

on probiotics for poultry and aquaculture. Its probiotics line – from the fermentation of active microorganisms to the finished feed additive and pre-blends – have been manufactured in León since 2016. The site has been developed and optimized continuously.

In 2022, Evonik has invested in state-of-the-art fermentation capacities, a new cooling circuit system and a new warehouse at the site, which became operational recently.

In addition to boosting production capacity, the new facilities and improved processes bring important sustainability improvements for the company. Energy, fresh water and raw material use per product have been significantly reduced and, since January 2023, the site has been using electricity exclusively from renewable energy sources.

For more information, visit www.evonik.com

There are many factors that can influence the well-being of animals. While the focus generally is on management and husbandry, nutrition also plays an integral role. Since a healthy gut is crucial for improving welfare and reducing antibiotic use in animal production, there is a need for advanced dietary strategies to improve animal welfare and profitability at the same time.

What's going on in the gut?

Did you know that your gut talks with your brain? Numerous studies describe the positive effects of a healthy and balanced gut microbiota and their metabolites on innate and adaptive immunity, metabolism, gut physiology and even behaviour of animals. And only a healthy gut with a balanced microbiota can function as a barrier between the environment and the animal and provide protection from pathogens. Butyric acid in the gut, either supplemented or produced endogenously by the microbiota, is of particular interest in this regard.

Enter PreAcid

PreAcid has been designed to deliver butyric acid to the



ANIMAL WELFARE NEEDS A HEALTHY GUT

lower part of the intestine. By combining butyrate with the prebiotic gluconic acid in the unique GlucoFence complex, PreAcid takes a two-pronged strategy to improve gut health. The strategy is to make gluconic acid — structurally related to the slowly fermentable sugar sorbitol — available to the beneficial microbiota. Specific micro-organisms generate conversion products essential for growth and health of the digestive system by fermenting gluconate in the hindgut. The concept has been proven in several trials, showing for instance an increase in

butyric acid production and improvement of microbiota composition, with an increase in *Lactobacilli* spp. and a decrease of *E. coli* in the caecum of broilers.

This has

practical and economic benefits for broiler producers and animals. The supplementation of PreAcid in broilers (Cobb) challenged with *E. coli* and *S. enteritidis* improved the barrier function of the gut, resulting in less *E. coli* endotoxins reaching the blood circulation. The subsequent improvement in feed efficiency, survival and profitability clearly shows the benefits of delivering the maximum amount of butyric acid in the gut.

It's all in the blend

Using a prebiotic approach with the GlucoFence complex maximises the full effect of butyric acid in the intestinal tract. Optimising the amount of butyric acid in the hind gut has clear benefits for the animal and the producer. Utilising the antibacterial and prebiotic action stimulates digestion and improves gut health, nutrient absorption and animal welfare.

For more information, visit www.dr-eckel.de

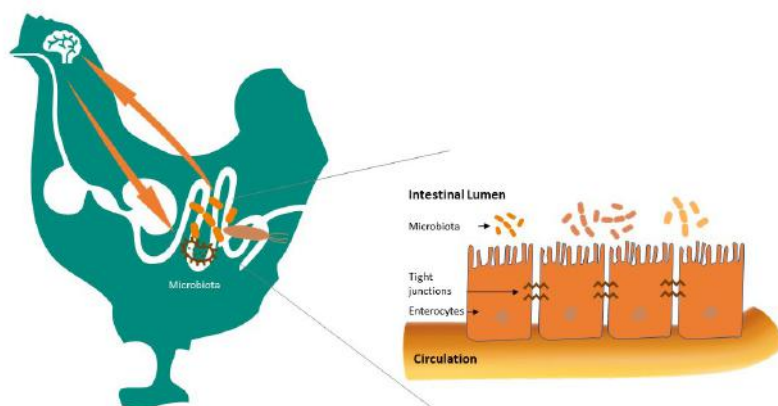


Figure : The gut microbiota and their metabolites communicate with the brain via several pathways, influencing animal health and well-being



DATA AND TECHNOLOGY HELP DAIRIES GO WITH THE FLOW

Thanks to the Nedap SmartFlow Milk Meter, farmers like Austin Webster of Greenleaf, Wisconsin can more closely monitor the pulse of their herd like never before, gaining timely, accurate, actionable insights into individual cow health and performance for improved management decisions.

"We can see right away if a cow deviates in milk production by a certain percentage," notes Webster. "The information has helped us streamline how we care for our cows and it has helped us improve our milking times."

The revolutionary compact wireless design ensures even and unrestricted milk and airflow through the meter. There are no flow obstructions or interruptions which could cause a vacuum drop or fluctuation. As a result, cows are milked more gently and completely than with any other metering technology, improving udder health and milk quality, including reduced free fatty acids.

The Nedap SmartFlow Milk Meter:

- Is durable, easy to install and cost-effective to maintain. Because it is wireless, there are no malfunctions related to faulty wiring.

- Measures and registers the milk yield and flow rate of individual cows during each milking with the highest accuracy, empowering farmers with real-time performance and health insights on individual cows, groups and the herd.

"Because we can monitor cow health and production on a daily basis more carefully, we can keep the most profitable cows in the stalls," Webster adds. "It's one of those systems I feel in this day and age is necessary to be competitive."

The meter is simple, cost-effective and works on any size farm. It also meets the most rigorous accuracy standards in the industry with certification by the International Committee for Animal Recording (ICAR).

"SmartFlow meters offer dairy farms accurate, consistent data to help ensure each cow in their herd is profitable," says Matt Heisner, Nedap dairy product specialist. "Farmers can now know exactly how much milk each cow produces and use this information to improve management decisions. They can depend on the data's precision because the milk meter meets stringent ICAR accuracy specifications."

This real-time, accurate information means farmers can confidently make management decisions for individual animals. Herd data such as milk flow or bimodal milk curves can not only help monitor cow performance, it can also help evaluate parlor work flow and protocol adherence.

This information means farmers can ensure each animal is performing at optimal levels or let farms know when an animal requires an intervention. Or help with parlor personnel training or retraining.

For more information, visit www.nedap-livestockmanagement.com



WHAT YOU SHOULD KNOW BEFORE FEEDING YOUR CATTLE?

Proper nutrition is crucial when raising any livestock, as it affects productivity and, your return on investment. From reproduction to growth and even lactation, several functions depend heavily on the quality of the animals' diet. When raising cattle, you want to make sure that you have nutrient-rich feed that'll help them optimize their performance. Here are a few things you need to know before feeding your cattle:

Hydration is key

Cattle will eat more and therefore put on more weight the more they drink water. The hotter it is outside, the higher their intake will have to be. The same applies in the last trimester of the pregnancy period, and lactating cows have a greater need for water to produce enough milk. Other factors resulting in varying water requirements include age and diet. You can let them drink from natural sources like streams, as long as there isn't a connection to local water supplies downstream.

Supplementation

With enough forage at your

disposal, all you need to add is a supplement containing salt and minerals. Trace minerals may not be enough for your cattle, especially when greater demands are thrust upon them. When cows produce milk, when bulls go through the breeding season, the late calf development phase; these are some of the demanding times to look forward to. Filling in the mineral gaps in their diet is as easy as getting a complete mineral supplement containing all the necessary minerals. The good thing is you have the label to guide you in terms of mineral consumption rate.

Besides minerals, cattle must also get enough protein and vitamins. They can get their protein from plants and vegetables like legumes that have an exceptionally high protein content. Still, there are mineral supplements that contain protein, for farmers that can't or would rather not stock up on legumes. Supplemental vitamins A, D, and E will also be instrumental in maintaining the health of your cows. Vitamin B is naturally produced in the stomach of a cow, but those that have been through

stressful conditions may need supplemental assistance.

You need to be careful about the ingredients included in the supplements that make up your animal feed. The goal is to stick with what's environmentally friendly. After all, cattle farming is already considered bad for the environment, with all the greenhouse gas emissions and soil erosion that takes place. If you're dealing with non-polluting enzymes and direct-fed microbials, then you've made the right choice. Some supplements can even have multiple purposes, like the aquaculture-friendly supplements we produce here at American Biosystems.

Master your Pasture

Grass-fed beef is higher in vitamins, antioxidants, as well as fiber. It's also lower in saturated fat, which is good news for the health conscious. That's why you're better off taking good care of your pasture so you can offer the best.

For more information, visit www.americanbiosystems.com

EARLY RUMEN DEVELOPMENT IN CALVES

Maeve Regan discusses the importance of early rumen development in calves and how to aid the transition from pre-ruminant to ruminant.

Newborn calves are born with undeveloped rumens, yet they will spend more of their lives as fully functioning ruminants. The main objective is to assist the transition from pre-ruminant to ruminant by developing the rumen as much as possible before they are weaned off milk, so that they grow to be cost-effective forage consumers that are efficient at converting

feed to milk or meat.

Rumen development begins within the first few days after birth and is advanced by exposure to healthy bacteria from the environment and the consumption of solid feeds – concentrates and straw (preferable to hay). Concentrates should be introduced from three days of age (an 18% crude protein calf starter ration/nut ideally) alongside free access to fresh clean water and high-quality clean straw ad-libitum (no haylage or silage).

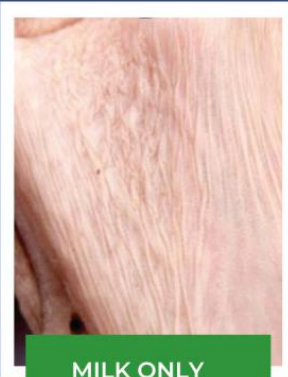
Source: Penn State Extension

Considering Weaning

Weaning on weight basis alone can leave a false sense of security with how ready calves are for the next stage of life/nutrition. The success of the weaning process and the weeks thereafter will hinge on how the rumen has developed over the first weeks of the calf-rearing period. Weaning should never be considered until calves are consuming at least 1.5kg of concentrates/hd/day in grouped pens – signalling that the calves dry matter intake can cope with the transition to a 100% solid feed diet.

Concentrates should be offered ad-lib while on milk but tracked closer to weaning to ensure the group is consuming adequate levels to allow weaning to commence.

For more information, visit www.agritech.ie



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MILK &
ROUGHAGE



MILK, ROUGHAGE
& GRAIN

THE NUTRITIONAL VALUE OF KID MEAT AND LAMB

The nutritional value of kid meat and lamb should not be overlooked, since these meats are an important part of a healthy diet based on high-quality nutrients that are organic and sustainable.

The proteins, minerals and vitamins the body obtains from these red meats help it to function better, preventing a variety of diseases and directly assisting processes such as digestion and sleep.

The benefits of eating kid meat and lamb

As well as its high nutritional value, there are many other benefits of eating kid meat and lamb, especially when it is organic. A sustainable diet that is adapted to our rich natural environment not only helps the body function better but also considerably reduces

the environmental impact generated by producing, transporting and consuming the food we eat. Andalusia's natural wealth is without doubt a key part of the process of producing healthy, sustainable food. We'd like to tell you more about the benefits of eating kid meat and lamb.

High-quality proteins for your body

The proteins that the body gets from kid meat and lamb are vital for our natural development. They are of animal origin but come from organic, sustainable production systems. This boosts the other important nutrients present in these meats, such as vitamins and minerals, which provide everything our body needs to function properly.

Benefits for the nervous system

The nutritional value of goat meat and lamb boosts the amount of B vitamins we consume. This group of vitamins has direct benefits for the brain and nervous system. Vitamin B12 – considered the queen of all the vitamins found in meat – helps the body's metabolism to function properly, helping to produce red blood cells and maintain the central nervous system.

Added protection for the immune system

Kid meat and lamb have nutritional components – such as iron – that provide essential protection for the immune system. A lack of iron can cause anaemia, making it one of the most important vitamins for our bodies. Iron is responsible



for keeping our immune system on high alert and fully functioning.

Nutritional value of kid meat

Kid meat has similar nutritional values as lamb, but has some specific added benefits. The fat content of lamb is just 7%, and a portion of 100g contains 122 calories.

A source of minerals of high nutritional value

Its high quantity of minerals helps the body function optimally. Potassium gives the muscles energy, which is ideal for sportspeople, and magnesium helps maintain muscle mass and protect nerves and bones. Phosphorus is important for bones and teeth, and is vital for a healthy pregnancy, which means that kid meat

can replace other meats that are not recommended during pregnancy. Other minerals such as sodium help maintain healthy blood pressure and aid digestion. Zinc is an antioxidant, and protects skin, hair and nails.

High in vitamin B1

Like lamb, kid meat contains high quantities of B vitamins. As well as vitamin B12 mentioned above, kid meat is high in vitamin B1, which helps convert carbohydrates into energy and makes it ideal for pregnant women, children and sportspeople.

The nutritional value of lamb

The nutritional value of lamb is similar to kid meat, as both animals are medium-sized ruminants. However, there are some differences. The fat

content of lamb is 15%, and 100g contains around 225 calories.

Lamb is easy to digest

The nutritional value of lamb makes it easy to digest thanks to its high amount of threonine, which boosts metabolism – i.e. it helps the body metabolise fats and makes digestion easier for the body.

Preventing illnesses with the nutritional value of lamb

Lamb is high in selenium, which makes it an ideal source of protection against illnesses such as asthma and prostate cancer. Even though selenium is not the only mineral in lamb, it is one of the most important, along with iron.

For more information, visit www.coviher.com

OCEANIA BEEF PROCESSORS POISED TO CAPITALIZE ON BEEF EXPORTS

Oceania's beef export markets are set to boom in 2024 with Australian exports expected to rise to 1.5 million tons according to USDA's Foreign Agricultural Service estimates. The volume of US beef on the international market is predicted to decline sharply due to herd reduction. Australia is seen as the main country with significant beef herd growth needed to fill the market void. This puts Oceania beef producers in the ideal position to take advantage of increased export markets for high-quality beef products.

Beef producers who can process reliably on-spec, safe products will be in the strongest position to profit from the opening of export markets. The SensorX Accuro advanced trim system is ready to ensure processors take advantage of this lucrative period. Using advanced technology that provides accurate detection of hard contaminants, meets quality targets in beef trimmings and supplies full-line product traceability. The SensorX Accuro has the AUS-MEAT stamp of accreditation and is ready to optimize value for processors.

Lean beef will be key in capturing the traditionally premium markets of the US, Korea and Japan. As well as taking advantage of the exponential growth in demand for high-quality, grain-fed beef cuts in China. SensorX Accuro advanced trim system uses sophisticated grading technology to determine the optimal allocation of trim for maximum value add, increasing the number of higher-value

batches. Each batch can be set with precise fat-to-lean ratio (CL) and weight targets, with operators able to create multiple products with different specifications simultaneously. In addition to product flexibility, the system also allows operators to stipulate which cut goes to which batch, easily accommodating tailored product demands of customers. The advanced X-ray scanning technology of the SensorX Accuro not only scans for CL but provides unrivaled accuracy in the detection of hard contaminants such as bone, metal and glass, which can then be removed to ensure consumer safety and minimize the chance of costly recall claims.

Global export and import regulations continue to increase in stringency. Full-line traceability ensures products meet the variants of international regulations and builds brand confidence in customers and consumers. Marel's Innova software is an integral part of the SensorX Accuro, enabling processors to track and trace each product that enters and leaves their facility. Innova's accurate data collection ensures individual end-products can be easily traced at each stage of processing, preventing costly, large-scale recalls and providing product-specific nutritional and source-to-shelf information to meet consumer demand.

Meat production has always focused on the valorization of

raw material. The SensorX Accuro allows processors to take this to the next level, prioritizing high-value cuts, improving yield and minimizing waste to maximize profits. Innova gives processors optimal control with real-time monitoring via an easy-to-read dashboard. With up-to-the-minute data, processors can pinpoint and fix issues immediately. Optimizing the processing line for increased throughput and line efficiency.

For more information, visit www.marel.com



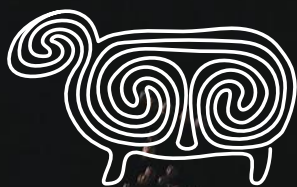
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