

JANUARY - MARCH 2022

LIVESTOCK & POULTRY

MIDDLE EAST & ASIA

**POULTRY
HOUSING**

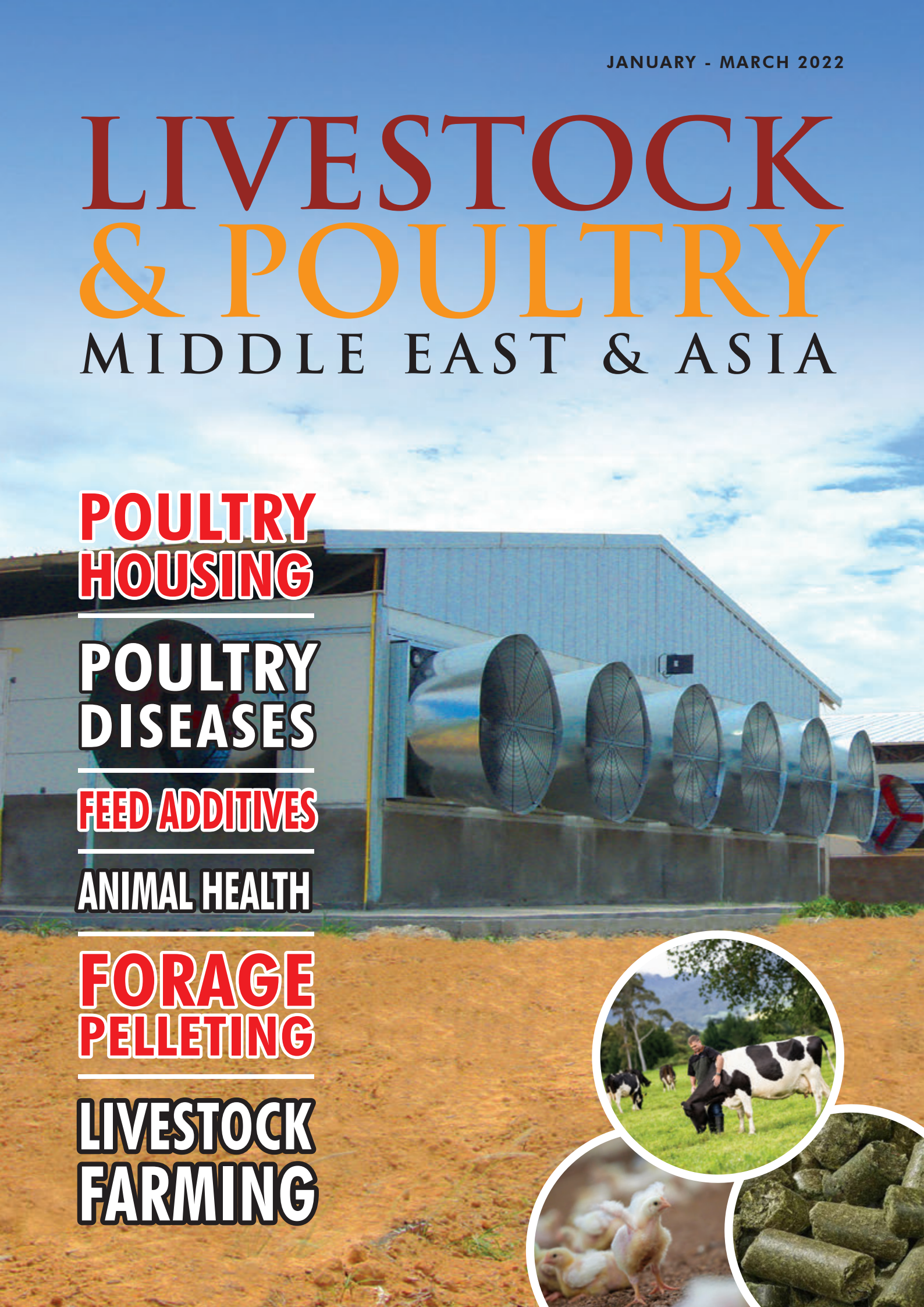
**POULTRY
DISEASES**

FEED ADDITIVES

ANIMAL HEALTH

**FORAGE
PELLETING**

**LIVESTOCK
FARMING**





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MIDDLE EAST & ASIA



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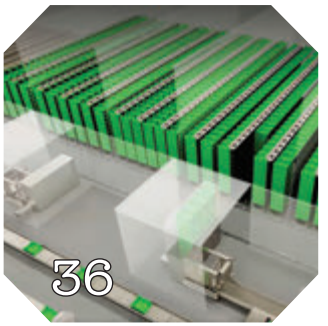
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Livestock & Poultry Middle East & Asia is designed to serve the fast growing livestock and poultry sectors in the Asia and Middle East region by providing the expert information to our readers in our four comprehensive issues in a year. It is circulated throughout Middle East region and worldwide in addition to the extra distribution at various Livestock, Poultry, Aquaculture and Agriculture Shows. The magazine provides editorial coverage on a wide range of topics which are of interest to industry professionals.

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News

NATURAL PREVENTION OF COCCIDIOSIS AND NECROTIC ENTERITIS IN BROILERS

On January 25, 2022 Dr. David Díez, veterinarian at Biovet S.A., participated in the International Poultry Scientific Forum (IPSF) with a conference entitled 'Natural prevention of coccidiosis and necrotic enteritis in broiler experimentally infected'.

Coccidiosis and necrotic enteritis are two diseases caused by *Eimeria* and *Clostridium perfringens*, respectively, of great importance in poultry farming due to their negative effects on the production and development of birds.

The conference presented the results of a field trial that evaluated the efficacy of intestinal conditioner and optimizer pronutrients, which can be found in the product

Alquernat Coneb, to minimize the consequences of a mixed infection by coccidiosis and necrotic enteritis.

On the other hand, the trial also detailed the combined effect of using Alquernat Coneb and Alquermold Natural, natural preservative with microbicide effect, to prevent mixed infections of the aftermentioned diseases.

Alquernat Coneb is a product made up of intestinal conditioner and optimizer pronutrients. These molecules from botanical origin, on the one hand, improve digestive processes and nutrient absorption. On the other hand, they stimulate the local immune system of the intestine so that the animals are capable to break the cycle of

coccidia by themselves.

Alquermold Natural is a natural preservative for feed with a broad spectrum of action. Its microbiocidal properties make it also effective against pathogenic bacteria and fungi that can be found in the digestive tract. So, the products is effective in eliminating microorganisms such as *E. Coli*, *Salmonella* and *Clostridium* and promotes the balance of the intestinal microbiota.

Both products have been developed by Biovet S.A. and are natural solutions of botanical origin that do not generate resistances nor residues in the animals. So that, its use is completely safe and do not require withdrawal period.

“EUROTIER MIDDLE EAST” TRADE FAIR TO BE POSTPONED

DLG (German Agricultural Society) has postponed the EuroTier Middle East trade fair, which was scheduled to take place March 21-23, 2022, at the National Exhibition Center in Abu Dhabi, United Arab Emirates. In view of the continuing uncertain overall international situation related to the pandemic, DLG as the organizer considers it unfeasible to hold EuroTier Middle East, the region's leading animal husbandry trade fair, in a form that is appropriate for exhibitors and visitors. The new trade fair date will be announced in due course.

The decision to postpone EuroTier Middle East was made in close consultation with the exhibition's

partners and exhibitors. "As the venue for professional animal husbandry in the MENA region, EuroTier Middle East thrives on the international spirit among exhibitors and visitors. In view of the continuing uncertainty surrounding the pandemic and the resulting challenging travel conditions, there is insufficient planning certainty which is a requirement for a successful trade fair," said Ines Rathke, Project Manager EuroTier. "With the postponement of the trade fair to a later date, we will once again be in a position to offer this planning certainty to our exhibitors and visitors," added Rathke.

The EuroTier Middle East trade fair is one of the leading trade fairs for technologies for future-oriented animal husbandry in the Middle East. The exhibition along with its professional offerings focus on the challenges and strategies in the MENA region. Benefiting from the international expertise of "EuroTier", the world's leading trade fair for animal farming held in Germany, exhibitors and visitors use the trade fair to develop strategies adapted to the region and to reach new trading platforms thereby successfully shaping regional livestock farming in globalized markets.



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We are now expanding into the Gulf and Northern Africa regions and have set up a Distributor in the Kingdom of Saudi Arabia. We have additional territories available for qualified professionals to join our successful team of Distributors. We offer complete training, support and resources to ensure a successful operation.

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FOOD GATE SIGNS MAJOR ORDER AND GCC AGENCY AGREEMENT WITH EMTECH HATCHERY SYSTEMS

After long and constructive discussions since March 2021, Food Gate Poultry and EmTech Hatchery Systems have reached an agreement for a major new hatchery project in the Kingdom of Saudi Arabia and the Agency to represent EmTech in the Gulf Cooperation Council (GCC) group of countries.

This will be the very first hatchery to be constructed within the Riyadh area and will incorporate the latest EmTech, PrimoTech MAX 94, systems that combine the ultimate in high density setting with the latest technology to provide the highest quality performance and chicks. Setting 44 million eggs per year in a combination of 24 and 18 trolley high-density setters will provide a significant reduction in the overall hatchery footprint over most competitors systems for maximum capacity and the most cost-effective hatchery construction.

Recognising the superior quality products and hatchery solutions that EmTech has to

offer, Food Gate has also agreed to represent EmTech in the KSA and the wider GCC group of countries to promote EmTech's extensive range of hatchery and ventilation products.

Ken Baker, EmTech's Managing Director said, "This is a significant development for EmTech and further demonstrates the strength and quality of the company, its products and services. This is the beginning of an exciting and prestigious partnership, and a milestone for the development and growth of the EmTech business and for the continued development of hatchery facilities in KSA. Many thanks must go to Mohamed El-Ashram, our Global Hatchery Support Director, who has been instrumental at every stage of our negotiations with Food Gate."



Front right – Mr Saleh Al Khudair, Owner and Co-Founder of Food Gate Poultry, front left – Ken Baker, EmTech Hatchery Systems Managing Director, back – Dr. Khawaja Abdul Waheed, Food Gate Poultry Chief Development Officer

Food Gate Poultry couples the investment required, along with the market needs of the KSA Poultry Industry, for the provision of high-end quality infrastructure, improved biosecurity, and advanced scientific techniques for the expansion of poultry production. They also plan to cater for all local producers by providing breeder, broiler, and slaughterhouses on a lease-based arrangement.

HAARSLEV PARTNERS WITH TESSENDERLO GROUP TO BRING HIGH-QUALITY FEATHER AND BLOOD MEAL TO THE RENDERING MARKET

Haarslev announced that it is partnering with Tessengerlo Group to combine their experience in the field of the production of highly digestible feather meals and blood meals via gentle drying technologies, promoted under the brands IDX for flash drying and VDX for vacuum drying.

Haarslev will now offer Tessengerlo Group's patented know-how to its customers buying specific gentle

drying equipment. This will give renderers worldwide access to these patented technologies to produce and market products of higher added value for applications in pet food, aquafeed, and animal feed delivering higher digestibility levels. By achieving a higher quality of the end-product, one not only achieves a higher value product but also enables improved and optimized

formulations in the production of animal feed, aquafeed and pet food.

Han Defauwes, CEO of Haarslev, said: "We have for a number of years discussed these patents with Tessengerlo Group. The outcome is that we have now turned those discussions into a partnership model, and we look forward to developing new products and processes together in the future."

NATURAL ABSORB PLUS, CALF-RESCUE MAY MINIMIZE SCOURS IN SPRING CALVES

The time of greatest risk for spring calves to develop scours, or diarrhea, is right after birth. Caused by exposure to E. Coli, Salmonella and coccidia found in manure, scours is the leading cause of death in calves under the age of one month.

Tim Nelson, Brookside Agra Vice President – Animal Health & Nutrition Sales, says producers who maintain healthy calf environments and provide calves with a natural nutritional supplement at birth may help to minimize scours infections in their spring calf crop.

The gut of a newborn calf is nearly sterile, making it vulnerable

to harmful bacteria and viruses found in its environment. Plus, weaning newborn calves from their mothers, particularly in the case of dairy calves, can be extremely stressful, causing their appetites to decrease while increasing the nutritional demand on their bodies.

Nelson recommends feeding newborn calves oral nutritional supplement Calf-Rescue by Brookside Agra to naturally boost their digestion and immune systems to help protect against scours.

Calf-Rescue, available in an easy-to-use oral applicator, promotes healthy microbial

counts in calf rumens to increase feed intake and improve digestive function. Calf-Rescue also provides Vitamins A and E, Thiamine HCL, Pyridoxide HCL and Vitamin B12 – critical for normal calf growth and development – as well as a healthy dose of microorganisms including Lactobacillus acidophilus, Enterococcus faecium and Bacillus subtilis to promote healthy ruminant function.

“Giving calves the nutrients they need at birth when they are weak and vulnerable will actually keep them healthier, therefore reducing the need for expensive shots and costly medical treatments to treat illnesses such as scours,” said Nelson.



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THE MOST INNOVATIVE & DURABLE HATCHERY & LABORATORY AUTOMATION



Upside down eggs & cracks detection with no shell contact



INOVAC with V.I.S.A technology
Automated Egg Vaccination Line



Highly Accurate Laser Chick Counting

- Full Hatchery Automation Equipment
- Candling, INOVO and Vaccination Technology
- Solutions for Large, Medium, Small Hatchery sizes
- Reliable, heavy duty stainless steel built
- New technologies prevent cracks, contamination and improve hatchability

INNOVATIVE AND ADVANCED TECHNOLOGIES
Reduce contamination and improve hatchability

- NECTRA LIFE CANDLING: Detect Live embryo and rotten egg.
- UPSIDE DOWN DETECTION: with no shell contact & no egg rolling.
- Automated refilling of hatching eggs directly on incubation trays. Eliminate shell cracks and belt contamination (SMART)



CANDLING NECTRASCAN
& NECTRALIFE

Highly accurate, identify live embryo, black & rotten eggs without contact.



Chick-Shell Separator



Setter Tray Destacker-Restacker



Industrial Washers

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CARGILL EXPANDS PORTFOLIO OF ARTIFICIAL INTELLIGENCE-POWERED INNOVATIONS TO GIVE POULTRY PRODUCERS ACTIONABLE INSIGHTS

Poultry producers are always looking for ways to improve the efficiency and health of their flocks. Advancements in technology, like artificial intelligence, can help accelerate these improvements, identify previously unknown problems and anticipate outcomes. Cargill is assembling a portfolio of AI-driven innovations through proprietary development and strategic partnerships to go beyond nutrition and help customers optimize their operations with actionable insights.

Galleon Microbiome Analysis – a comprehensive broiler microbiome health assessment tool.

There is an interdependency between the condition of the gut microbiome and the flock's health. Therefore, understanding the gut microbiome allows producers to optimize animal health and performance. Cargill's patent-pending Galleon tool enables broiler producers to decide how changes such as in raw materials, diet,



additives, vaccine programs, and farm management practices influence the microbiome of their flock.

Using a simple swab from a live bird, Cargill scientists analyze a customer's flock health using Galleon's robust database of poultry microbiome, developed over a decade using a global data set and nearly 100 trial studies. The analysis is further augmented using statistical analysis, machine learning and artificial intelligence capabilities to provide producers with a comprehensive report and recommended interventions to address issues. In addition, results are

unbiased towards a specific product.

Birdoo – for real-time, hands-free measurement of broiler weight performance through advanced imaging and predictive analysis.

Feed is the highest cost input for poultry producers and the primary contributor to their birds' health. At the same time, obtaining accurate animal weight is a time-consuming and labor-intensive flock management effort.

To help producers better track broiler performance, Cargill has teamed up with digital technology enablement firm, Knex, to develop "Birdoo," a first-of-its-kind technology that leverages proprietary computer visioning and artificial intelligence that combines hands-free, real-time flock insights with predictive modeling data. This helps producers make informed decisions quicker while supporting their bottom lines through better animal health and well-being, increased uniformity and improved performance of their flocks.

BREEDERS POULTRY BELTS NOW OFFERING UNIQUE HYPOCHLOROUS (HOCL) CLEANSMART DISINFECTANT WITH LONG SHELF LIFE FOR USE IN POULTRY INDUSTRY

All CleanSmart products are made with Hypochlorous (HOCL), a substance the human body produces to kill germs, protect and heal itself. It causes no harm, neither tissue damage nor skin irritation. Hypochlorous chemistry is approved for use both by the EPA and FDA.

HOCL has been used in the medical field for more than 100 years, and is a naturally occurring chemical produced by our white blood cells to fight bacteria and inflammation after an infection or trauma. Lethal to almost all known dangerous bacteria and viruses.

Unlike liquid bleach (sodium hypochlorite), it is safe to use around humans and animals, free of harsh, harmful or heavy chemicals, non-toxic and all-natural. Yet, it is 80-100 times more efficient at killing microbial pathogens. HOCL is used in many industries including cleanrooms, food, beverage and dairy, agriculture, water treatment, medical and dental facilities.

The process to produce HOCL is based on electrolyzing salt water. One of the key innovations of the CleanSmart product is that it has a long

12-month shelf life vs. days for the typical process to produce.

Other benefits include:

- EPA-registered (#89896-2) to kill 99.99% of germs including E. coli, Salmonella, Listeria and many more.
- Safe to use around food and animals with no harsh fumes, harmful chemicals, no PPE or first aid warnings.
- No rinsing required, no residue and dissolves to saline solution.
- Designed for electrostatic sprayers and foggers.
- 12-month shelf life.

SEARUP®, BASED ON MACROALGAE EXTRACTS (MSP®IMMUNITY) ACTIVATES BROILER'S IMMUNE CELLS (HETEROPHILS AND MONOCYTES), IMPROVING THEIR RESISTANCE TO CHALLENGES

In the continuity of the Olmix Group- Brest University – Brest Medical school partnership, the *in vivo* effects of Searup® on poultry immune response have been examined. The results have been published in the Journal of Veterinary Science & Research.

A single administration of Searup® at 1 ml/l of drinking water, the dose recommended for the use in the farm, activates two innate immune avian cell types, heterophils and monocytes, via the activation of the TLR2 and TLR4 receptors.

Heterophils and monocytes play a crucial role in defending animals against invasive pathogens via both direct action (innate immune response) and by inducing the appropriate acquired immune responses. Monocytes can differentiate into dendritic cells and macrophages, and thus play an important role in the development of innate and adaptive immune response by phagocytic and antigen-presenting activities respectively. The heterophils are the avian neutrophils, when they are activated, they can produce immune mediators as well as antiviral enzymes.

Activation of Heterophils has been demonstrated by the increased glucuronidase release and oxidative burst (contributing to the protection in case of microbial challenge) while monocytes activation has been proven by evaluating nitric oxide release (having important antimicrobial properties).

Additionally, different cytokines involved in innate and adaptive immunity were transiently

upregulated in response to Searup®, such as interferon- α , interferon- γ , IL1 β and OAS (Oligoadenylate synthase) for heterophils and interferon- γ , IL1 β and OAS for monocytes. These cytokines participate in several activities of the immune response as IL1 β acts on the proliferation and the differentiation of immune cells,

interferon- γ activates macrophages and antibodies production by B cells while interferon- α and OAS protect against virus. This is in adequation with previous similar study with MSP®IMMUNITY (a macroalgae extract rich in sulfated polysaccharides), a key ingredient of Searup® where the expression of the above cytokines was also upregulated (Guriec et al, 2018).

For over half a century we have been taking care of your livestock production. Everywhere in the world.

TERMOTECNICA®
PERICOLI

pericoli.com

STRONG INTEREST IN SUSTAINABILITY SOLUTIONS AT NZMP'S STAND AT GULFOOD 2022

NZMP, Fonterra's global dairy ingredient brand, has returned to Gulfood 2022 in Dubai bringing its world-class innovations and technical expertise to the world's largest F&B sourcing event with visitors showing high interest in the sustainable products on display.

Organic Butter carbonzero™ certified, won the 'Most Innovative Dairy Product' at

Gulfood Innovation Awards 2022 underscoring Fonterra and NZMP's pioneering efforts in providing best in class products and solutions.

Fonterra's unique low carbon pasture-based farming system was on display at the Dubai World Trade Centre (DWTC) with interactive digital activation, capturing the attention of visitors looking for sustainable products.

The growing demand for sustainable products is significant, a recent study by Mastercard indicated that post-pandemic 80% of Middle Eastern adults have become more concerned about their environmental impact - much higher than the global average of 3 in 5 individuals. According to Boston Consulting Group study nearly three-quarters of adults in the Middle East (72%) acknowledge that businesses are moving towards more sustainable and environmentally friendly practices.

The NZMP stand featured a variety of engaging animations, videos, and articles that explain why New Zealand grass-fed dairying is a better sustainability choice: for the animals, soil health, the planet, and how Fonterra New Zealand's low on-farm carbon footprint provides customers with a competitive advantage and greater consumer transparency.



A VIRTUAL REALITY EXPERIENCE WITH CHR. HANSEN'S UNIQUE TRIPLE STRAIN PROBIOTIC FOR POULTRY: GALLIPRO® FIT

The poultry business is tough. Driven by the regulation of growth promoting antibiotics and the increased focus on food safety, poultry farmers face growing challenges when looking for new effective tools that can keep their flocks normal and healthy. GalliPro® Fit is an easy-to-use, natural solution that helps poultry farmers overcome these challenges.

GalliPro® Fit is Chr. Hansen's first probiotic to combine three

unique strains in one product to address some of the key challenges faced by poultry producers today. Together, the selected strains in GalliPro® Fit have been proven to effectively boost prevention programs, contribute to food safety, and modulate the immune system in broilers, layers, and turkeys.

With the launch of GalliPro Fit in the US, we have built even further upon our field trials and data to be able to document the efficacy of GalliPro Fit. The uptake of the

product among our customers has been extremely positive.

With feed representing 68% of the cost of broiler production, production profitability is important, and margins are under pressure.

GalliPro® Fit has been proven to be effective in the following key areas:

- Boosts prevention programs.
- Contributes to Food Safety.
- Consumer acceptance - Natural and Safe.
- Easy to use.

Agri Green

Maximizer Hay Dryer Ent.

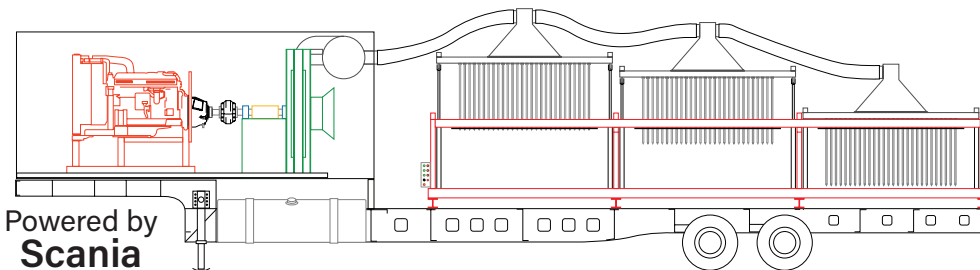
Adding
VALUE & CERTAINTY
to your operation
agrigreen.ca



Units have been sold in Poland, UK, South Africa, Canada and USA.

The Hay Dryer specializes in maximizing value to any hay producer's operation.

AG Maximizer Hay Dryer



The AG Maximizer has been created to dry hay that has been baled into large square bales that has up to 30% moisture content.

HAY DRYING PROCESS

1. Park AG Maximizer in field where hay is baled or near where hay will be stored.
2. Bales are fed into the AG Maximizer by tractor/loader.
3. 10-20 minutes dry cycle. Air flow is directed into the hay using 84 spikes in each bale. The spikes are hydraulically lowered, and the fan blows heated air through slots in each spike to evenly dry each bale.
4. After the bale has been in the dryer for the allotted time, the spikes are raised up and new bales are fed in, pushing finished bales down the ramps.

The natural 'sweat' that baling creates has been accelerated and bales will cool down to ambient temperature within 24-48 hours.

BENEFITS

The AG Maximizer will dry 6 large square bales (3'x4') simultaneously from moisture levels up to 20% to a moisture level of 12% in approximately 15 minutes.

1. Improves Hay Quality
 - preserves leafage
 - maximizes protein/food value
 - retains colour
 - allows a producer to bale when hay has high moisture minimizing losses in field

2. Reduces reliance on weather to sun-cure the hay
3. Extends the harvest season and assures your first and last cut

It is easy to make something complicated, however through constant reassessment, redesign and high standards for consistent and efficient drying, that is easy to operate, the AG Maximizer was created.

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DSM-NOVOZYMES ALLIANCE LAUNCHES ITS NEW GENERATION PHYTASE, HIPHORIOUS™

HiPhorius™ is a complete phytase solution designed to help poultry producers achieve sustainable and profitable protein production. Its commercial release will improve the market standard for phytase technology and enable access to high potency phytase, giving producers more flexibility in diet optimization.

HiPhorius™ raises the market standard for phytase technology, delivering consistent improvements in animal performance through efficient phosphorous utilization. It is a complete phytase solution for poultry, animal and aquaculture species and designed to help farmers achieve sustainable and profitable animal protein production.

HiPhorius™ enables producers to expect increased efficiency, improved thermostability and access to digital services, giving producers opportunities to reduce feed costs. The superior phytase-degrading properties of HiPhorius™ enable precision nutrition with the use of digestible calcium for optimum broiler performance. Using end-to-end digital services for intelligent phytase nutrition, HiPhorius™ offers more out of less feed.

For decades, animal protein producers have relied on phytases as an alternative to inorganic phosphate for both economic and sustainability reasons. Rock phosphate is a non-renewable resource that needs to be managed

efficiently. As prices of this important source of phosphorus have increased over recent years and pressure for more sustainable animal protein production grows, more attention has been given to phytases to deliver greater efficiency. With its enhanced potency, HiPhorius™ fills the gap, allowing a significant reduction of phosphorous in monogastric diets. The addition of HiPhorius™ directly contributes to a significant decrease of phosphorus emissions from poultry, animal and fish farming. This not only optimizes value for the farmer but also reduces the environmental footprint of animal production. All these aspects are reflected in the HiPhorius™ slogan, "Adding a little, wins a lot".

THE MOBA MR50 ROBOT FOR WORRY-FREE AUTOMATIC DEPALLETTIZING OF EGG PALLET SYSTEMS

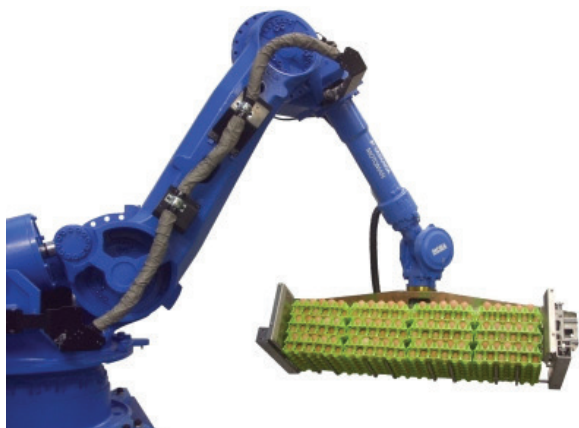
The MR50 is part of MR robotics series and offers a helping hand in the tray depalletizing process.

Transferring eggs to a loader involves moving heavy loads from a pallet onto the grader's transport belt. For example, with a daily production of 500,000 eggs, the total weight can reach

up to 30,000 kilograms! The Moba MR50 depalletizing robot can be added to your egg grader, relieving your staff of this heavy and intensive work. The MR50 is suitable for Moba equipment with capacities ranging from 60,000 (170 cph) to 190,000 (530 cph) eggs per hour.

If you are looking for ways to increase the efficiency of your packing station, the MR50 robot is the ideal solution for worry-free, automatic depalletizing of various brands of plastic egg pallet systems.

Flexibility and ease of use are the key features of this robot. In addition, the programming of the robot arm means that every movement is spot on. The MR50 is also very precise when loading the stacks onto the loader. Stacks are picked up in such a way that the travel time between the pallet and pre-loader belt is kept to an absolute minimum. As a result, the MR50's overall performance is so well balanced that the robot can easily keep up with capacities of up to 190,000 eggs per hour (530 cph), even when pallets are only four layers high! Combined with the flexibility of the pre-loader conveyors, almost every possible layout can be created to ensure that the MR50 fits perfectly into your operation.



EASY WAY TO FEED P FOR PROFIT

Cattle feeding on the bulk phosphorus put on prior to the wet season as part of the Easy P strategy currently being trialled at 'Kidman Springs'.

A method of phosphorus (P) supplementation that removes the need to deliver P to stock during the wet season is proving just as effective as traditional methods of supplementation.

An MLA-funded project is assessing the 'Easy P' strategy, which aims to provide a method of supplementation suitable for areas that are difficult to access during the wet season by including P.1.

This method provides enough P for stock until the next dry season – removing the time, effort and labour required to supplement stock with P during the wet season, especially in areas which are difficult to access.



The Easy P strategy is being compared against traditional wet season P supplementation strategies through a research trial and several Producer Demonstration Sites (PDS) currently underway across WA, Queensland and the NT.

One trial being conducted on NT research station 'Kidman Springs' by the Northern Territory Department of Industry, Tourism and Trade is already returning promising results, according to the

department's Principal Livestock Research Officer, Tim Schatz.

"What the data is telling us is that the Easy P treatment is performing the same as traditional wet season supplementation," Tim said.

"That's really pleasing to see because even if it was only 70–80% as effective as traditional programs, the benefits you get from P supplementation in deficient country would still make it worthwhile.

KEMIN INDUSTRIES LAUNCHES TOXFIN® CARE ALL-IN-ONE PROTECTION AGAINST MYCOTOXINS IN FEED

Kemin Industries, a global ingredient manufacturer that strives to sustainably transform the quality of life every day for 80 percent of the world with its products and services, has launched a new solution in Europe, TOXFIN® CARE, focused on preventing loss in performance and productivity by safeguarding animal organs and tissue from potential damage caused by mycotoxins.

Mycotoxin management is a crucial element in every livestock diet, as contaminated feed is a major challenge within the animal nutrition and health industry. Kemin aims to reinforce the immune system, protecting poultry and ruminants from the

not-always-visible, negative effects of mycotoxins.

"The direct effects of mycotoxins, or clinical mycotoxicosis, are not always evident; we mostly see the indirect effects of contamination, such as a weakened immune system, which lead to a higher prevalence of diseases," said Valentine Van Hamme, Business Manager – Health, Kemin Animal Nutrition and Health – EMENA (Europe, Middle East, North Africa). "Contaminated feed is a major challenge across the entire feed industry, but we know that every situation is different and requires a unique solution. That's why Kemin offers a complete TOXFIN® range to

ensure the right solution tailored to our customers' mycotoxin challenges."

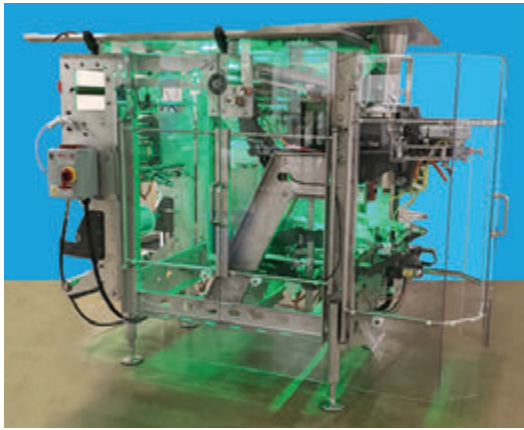
Mycotoxin management is crucial, so Kemin Animal Nutrition and Health – EMENA offers an extensive portfolio of mycotoxin management solutions for its customers, with each product answering specific customer needs.

Along with a complete TOXFIN range, Kemin Animal Nutrition and Health – EMENA offers the Mycotoxin Management Toolbox, which allows for correct assessment and offers a solution to address the root of the problem – resulting in solutions for feed safety and overall protection of the animal.

HAYSSEN ISB BRINGS TOP HYGIENIC PERFORMANCE TO PROTEIN

BW Flexible Systems' Hayssen ISB (intelligent sanitary bagger) has been turning heads since its launch due to its updated sanitary design, modern industrial machine intelligence, and intuitive operation in vertical form fill seal packaging. Now the company will offer the Hayssen ISB as a premier VFFS bagger for the fresh and frozen protein industry—including raw poultry packaging.

Developed from the ground up using extensive voice of customer



interviews, including Frozen/IQF industry insiders, the Hayssen ISB's sanitary design offers powerful, innovative features and hygienic operation.

"When you look at its sanitary design, this machine is top notch," said Jim Kolmus, BW Flexible Systems' Director of Global Innovation. "We've incorporated wire looms throughout the machine. Air lines and cables are all separated to make them easier to clean. The frame design is all open channel with sloped sides to make sure it drains properly."

The entire machine is IP66 high-pressure washdown-capable including its human machine interface (HMI), which on other machines typically requires protection due to its sensitive components.

The ISB's control cabinet has earned an OSHA Arc Flash Compliant NEMA 4X rating.

Built to excel in even the most demanding packaging environments, the sanitary features of the Hayssen ISB go much further. The open-channel frame implements sloped surfaces with no more than one square-inch of surface-to-surface contact between its components. Even vacuum belts, a potential source for contamination and pathogen growth, have been eliminated in favor of friction belts since the ISB utilizes the MFP measuring roller system for precise film measuring.

Beyond its extraordinary sanitary performance, the Hayssen ISB also includes convenient operational enhancements, such as passthrough film threading, a laser measuring system that manages film tension, and toolless changeovers except for the sealing jaws.

UAE MINISTRY OF CLIMATE CHANGE AND ENVIRONMENT TO COOPERATE WITH DEPARTMENT OF AGRICULTURE, FOOD AND THE MARINE OF IRELAND ON FOOD SECURITY

The UAE Ministry of Climate Change and Environment (MOCCAEE) has signed a memorandum of understanding (MoU) with the Department of Agriculture, Food and the Marine of Ireland to enhance cooperation in the field of food security.

The agreement was signed by Her Excellency Mariam bint Mohammed Almheiri, UAE Minister of Climate Change and Environment, and His Excellency Charlie McConalogue T.D., Minister for Agriculture, Food and the Marine of Ireland.

Under the terms of the MoU, the two parties will collaborate in leveraging the latest technologies to optimize food and water management, promoting foreign direct investments in sustainable agriculture, facilitating trade in food and agricultural products, and sharing knowledge of national governance frameworks that seek to address the critical water, food, and energy nexus.

Speaking on the new partnership, Her Excellency Mariam bint Mohammed Almheiri said: "Strengthening

national food security is a strategic priority for the UAE. Therefore, the Ministry is keen to step up collaboration with relevant entities in other countries to boost food trade, ensure the continuity of supply chains, and drive the adoption of innovative solutions in this field. The agreement with the Department of Agriculture, Food and the Marine of Ireland will spur the exchange of successful innovation- and technology-based experiences in all aspects of food security and sustainability."

PROBLEM

Shifting from Traditional to Battery Cages will be challenging in manure management



Low moisture content
Manure are collected by batch
Due to low moisture content, handling and processing will be easy



High moisture content
Must take out manure everyday
Improper management can generate flies and cause serious odor problems.

KOHSHIN IS THE KEY!

We can solve your problems on manure management .



COMPOSTER

Material to be processed: Any kind of animal and biodegradable wastes
Capacity: 4.4 tons (5.9 m³) ~ 70 tons (93 m³) / Daily
Process Duration: 24 to 30 days
Process Procedure: Daily Input or Batch Production

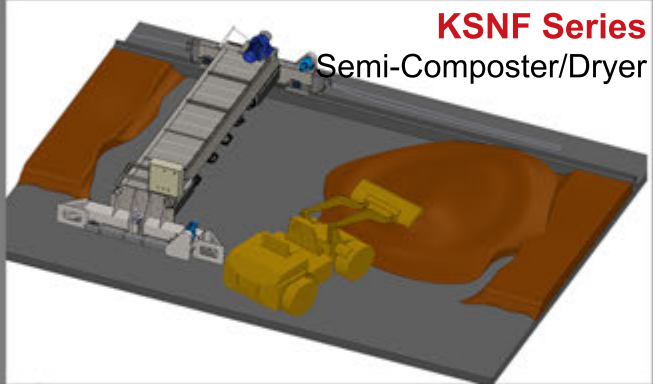
Advantages of Kohshin products



Pre-Composting
Temperature of manure can reach up to 80°C which helps reduce bad odor



Final Product
Pelletized and uniform size



KSNF Series
Semi-Composter/Dryer



Aeration System
Helps activate aerobic bacteria for better decomposition



Scrubber
Optional item to reduce ammonia and other gas emissions

- ✓ Easy to use
- ✓ Affordable price
- ✓ One sided rail (No barrier in putting and removing raw materials)
- ✓ Drying time ranging from 5 -12 days depending on weather condition



1-1 Tsujikiri, Tokuzane, Shippo-Cho, Ama City, Aichi Pref., JAPAN 497-0016
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Email: info@kohshin-s.jp URL: http://www.kohshin-s.jp



SUSTAINABILITY IN THE MEAT INDUSTRY: A TOP THEME AT IFFA 2022



From May 14 to 19, 2022, IFFA, the Leading International Trade Fair - Technology for Meat and Alternative Proteins, will open its doors in Frankfurt am Main. Internationally renowned companies will present

their latest technologies and provide information on the most important trends and developments in the meat and protein processing industry.

One of the top topics at IFFA is sustainability: the EU wants to become climate-neutral by 2050, which also poses major challenges for the meat and protein processing industry as well as the packaging industry. They must

improve their energy efficiency and produce in a way that contributes to the conservation of the world's natural resources.

Sustainability is a catalyst for change and innovation in the meat industry. Political requirements and nutrition-conscious consumers are driving producers and manufacturers to act. Additional pressure is being generated by the global debate on climate protection and resource conservation. The meat processing industry is responding to this with technological innovations, but also with fundamental corporate commitments to sustainable solutions.

NEW CRITERIA FOR THE SUSCEPTIBILITY TESTING OF UBROLEXIN® WHEN TREATING MASTITIS IN DAIRY COWS

Boehringer Ingelheim, a global leader in animal health, announces that Clinical and Laboratory Standards Institute (CLSI) approved revised interpretive criteria for the susceptibility testing of Ubrolexin®.

According to the Federation of Veterinarians of Europe, wherever possible, susceptibility testing should be done to determine which antimicrobial will be most successful in treating a particular condition. Being able to test the susceptibility of an antibiotic combination that is dedicated to mastitis allows vet practitioners to appropriately select their treatment and prevent antibiotic resistance.

Ubrolexin®, a combination of kanamycin and cefalexin, has been marketed for the

intramammary treatment of clinical mastitis in lactating dairy cows in 27 countries by Boehringer Ingelheim since 2008. This combination broadens the spectrum of activity attributed to either agent alone, and synergy between the two agents has been demonstrated against target mastitis pathogens.

Methods for testing the susceptibility of mastitis pathogens to the kanamycin and cefalexin combination, including recommendations for interpretive criteria and quality control ranges for broth microdilution and disk diffusion susceptibility testing, were the subject of prior peer-reviewed publications.

Revised interpretive criteria for the combination for

broth microdilution and disk diffusion susceptibility testing were recently approved by the CLSI Veterinary Antimicrobial Susceptibility Testing (VAST) Subcommittee.

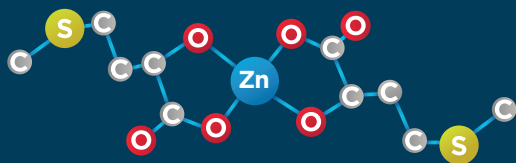
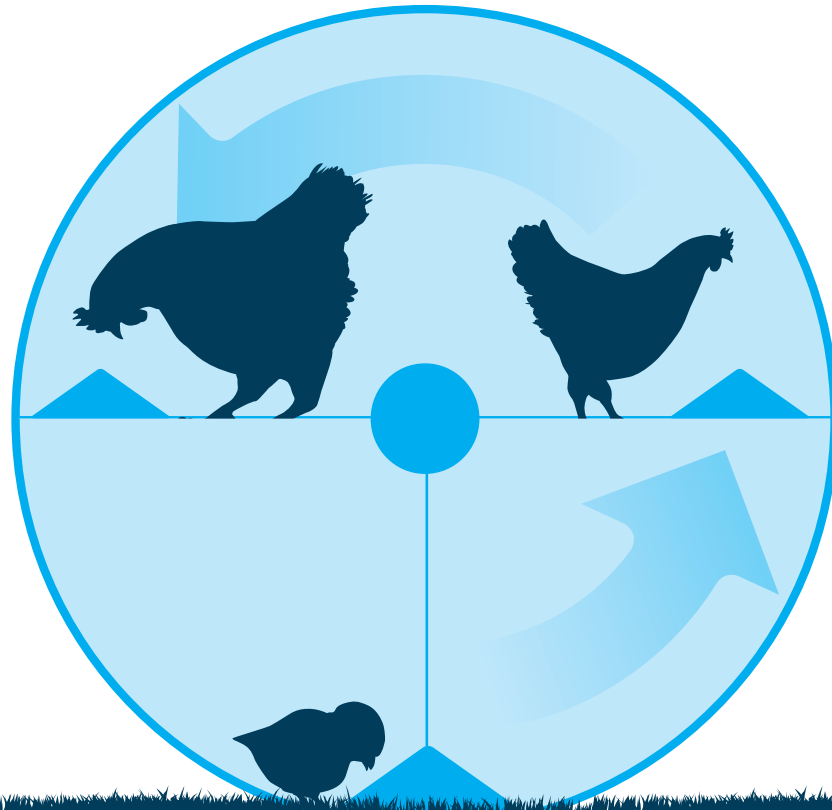
"The revised recommendations take into consideration additional susceptibility data collected on recent bovine clinical mastitis field isolates and should be used for testing kanamycin in combination with cefalexin against bovine mastitis pathogens going forward," shared Dr Laurent Goby, Global Technical Director Ruminants, Boehringer Ingelheim.

Disk diffusion criteria were adjusted accordingly based on the approved broth criteria and resulting error-rate bounding analysis in line with CLSI M23 guidelines⁵ and were also approved by VAST.

Did you know that

MINTREX[®] benefits

**your entire Boiler Production Cycle,
improving the performance efficiency
and carcass condemnation?**



MINTREX[®]
The expert's choice

MINTREX[®] bis-chelated minerals are a **unique, highly bio-available** and **most efficient source** of Zn, Cu and Mn, in comparison to inorganic and other organic trace elements.

Broiler diets with **MINTREX[®] Reduce & Replace** strategy promotes **higher performance at farm level** as well as **better meat and carcass quality**, while promoting **animal welfare**.

For further information contact us at info.europe@novusint.com

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NOVUS[®]
SOLUTIONS SERVICE SUSTAINABILITY™

RUMINANT SECTOR CAN AND MUST DO BETTER ON NITROGEN EMISSIONS

Adisseo's core business of providing amino acid balancing solutions to the ruminant sector gives it a unique insight into the challenges faced in delivering sustainable solutions to feed the planet.

According to Uwizeye et al. (2020), the livestock sector emits 65 Tg of nitrogen each year. That equals one third of the current human-induced nitrogen emissions and mainly results from the application of nitrogen fertilizers and manure on the soil. Although this is

less than 6% of total global greenhouse gas emissions, according to Our World in Data, the industry still needs to focus on reducing greenhouse gas to be sustainable.

Ruminants use only a part of the nutrients and nitrogen present in their feed. Only 5-45% of the total quantity of nitrogen ingested is transformed into animal products (Oenema et al. 2008). The remaining part is excreted through the feces and urine and is then released into the

environment. The various forms of nitrogen emissions can negatively impact land and water. Acidification changes the chemical composition of surface water and soil, making it more difficult for plants to assimilate nutrients. This results in decreased plant growth. Ammonia and NO_x emissions not only contribute to climate change, but also lower air quality and disrupt freshwater aquatic ecosystems by contributing to a loss of biodiversity and eutrophication.

REPRODUCTIVE PERFORMANCE OF DAIRY COWS SUPPLEMENTED WITH A LOW DOSE OF OMEGA-3 FATTY ACIDS

In recent decades, supplementation of dairy cows with different sources of omega-3 fatty acids (FA) has increased with the aim of improving reproductive performance. These results have been reported by several authors (Royo et al. 2021, Gulliver et al. 2012, Santos et al. 2008; Ambrose et al 2006). However, due to the increasing costs of raw materials used in animal feed, we believe it is important to know if the beneficial effect on reproductive performance is maintained using a low dose (250 g HI-FLAX[®] per cow per day).

In order to evaluate the effect of TMR supplementation with omega-3

bypass FA (Norel HI-FLAX[®]) at low dose on reproductive parameters of a dairy herd, 91 adult Holstein cows were enrolled in the study for 8 weeks. The TMR for the cows was supplemented with 250 g/cow/day of HI-FLAX[®] (FAO3), which corresponds to 35 g of omega-3 FA. Cows consumed this TMR for at least 2 weeks prior to artificial insemination (AI). The cows that did not consume omega-3 FA prior to artificial insemination were considered as the CONTROL group (CTRL).

The pregnancy percentage of the farm was 30% at each insemination. However, when we analyzed the pregnancy percentage in each experimental group, we observed significant differences ($P = 0.004$) between them. CTRL cows, those that did not consume omega-3 fatty acids prior to insemination, had a pregnancy rate of 27%, while cows that were supplemented with omega-3 fatty acids (FAO3) prior to insemination obtained a pregnancy rate of 50%.

Regarding the total number of AI required to achieve a pregnancy, significant differences ($P = 0.003$) were also observed between the two groups. Cows that were not supplemented with omega-3 FA (CTRL) required an average of 3.2 AIs to achieve a pregnancy, while cows that consumed HI-FLAX[®] required only 1.5 AIs. Open days are defined as the time between the last calving and the fertilizing AI. This time had a tendency ($P = 0.1$) to be different between the two groups. In the case of cows supplemented with omega-3 FA (FAO3) this time was on average 100 days, however, in the non-supplemented cows (CTRL) this time lasted on average 169 days.

With this trial it was concluded that supplementation with omega-3 fatty acids (HI-FLAX[®]) at a dose of 250 g/cow per day, significantly increased the pregnancy rate. This meant that these cows became pregnant earlier, requiring fewer inseminations, and having fewer days open than cows that did not receive these fatty acids.



ECS® TRAY INSPECTOR TO SEPARATE AND REMOVE THE BROKEN TRAYS

GI OVO introduces the Tray Inspector, a machine that can identify, separate and remove the broken trays from your production line.

For more than 20 years our EggsCargoSystem® sets the standard for egg handling worldwide. A vital part of this egg handling infrastructure consists of our durable egg trays. The trays are built to last, but they are often used for a long period of time. They can eventually develop small cracks or other deficiencies. Broken trays may cause broken eggs, a disrupted production process or even severe damage to your machines. That is why we created the ECS® Tray Inspector that identifies and separates the

broken trays.

The Tray Inspector is controlled by a PLC (Programmable Logic Controller). This PLC is connected to a computer that runs specially designed software. The software analyses every tray and sees any sort of crack or malfunction. The PLC then decides to which stack the tray is transported: broken trays or correct trays.

The ECS® Tray Inspector is modular and can be upgraded with several convenient additions to match your specific needs. Its basis consists of a conveyor line, a re-packer, an unpacker, a pusher - that pushes the sorted trays - and especially designed vision technology which detects the broken trays. Our machine



can be expanded with various additions, such as several stacking devices, a camera that reads the age of the trays and the possibility to connect to other machines.

DRIVING THE FUTURE OF INNOVATION – INTRODUCING SKRETTING AQUACULTURE INNOVATION

Skretting Aquaculture Research Centre (ARC) has been renamed and restructured into a complete and multi-functional unit incorporating the global marketing, sustainability and digital teams into its midst. The new unit is called Skretting Aquaculture Innovation (AI) and integrates all aspects of innovation from basic to applied research, to product development to digital innovation and sustainability.

“What we have created is a completely dynamic approach towards innovation, where we don’t focus only on one aspect of innovation, for example ingredients, health, digital or only sustainability,” says Alex Obach, Skretting Innovation Director. “We have put all of

this together into an integrated and agile value centre, with our clients’ current and future needs at the core.”

“We operate in a specific area of the aquaculture value chain, with great diversity in our clients, the species farmed and the ingredients available. However, there are innovation areas that add value across the board, including sustainability, life start, health, ingredients and more,” continues Obach.

The new unit remains headquartered in Stavanger, Norway, and comprises more than 150 experts across the functional areas, closely collaborating with colleagues around the world. With novel technologies in the Skretting Bubble combined with future

solutions from Nutreco Exploration (NutEx) set to deliver exclusive ingredients through phytotechnology, biotechnologies and physical chemistry, combined with increasing opportunities through Nutreco’s breakthrough investment arm NuFrontiers, Skretting AI is at the forefront of cutting-edge innovation.

The innovation areas of Skretting AI are tightly matched with the global rise in seafood consumption, combined with the rise in conscious consumers. The pandemic has highlighted the need for sustainable, healthy and local food and there is an expectation that companies will operate in a conscious, transparent and ethical way.



THE VARIOUS VENTILATION OPTIONS FOR POULTRY HOUSES

Basically, you have the choice between two ventilation principles in poultry farming: natural and mechanical.

Natural ventilation

One advantage of natural ventilation is the low investment due to the use of natural resources and simple installation. Natural ventilation is based on the chimney effect. Warm air rises and disappears through an opening in the roof ("chimney"). This creates a slight negative

pressure in the stable and fresh air is sucked in through inlet openings on the side (those with flaps or curtains opened or closed). Systems based on natural ventilation have, however, become less popular due to the disadvantages of manual control and limited capacity.

Mechanical ventilation

The required air exchange or temperature change is not always sufficient with natural ventilation. This can be regulated

much more accurately and easily with the help of mechanical ventilation. Fans provide much more certainty about the amount of displaced air.

With mechanical ventilation, the air can be extracted by fans, blown in, or a combination of both. In those cases, we speak of ventilation on negative pressure, positive pressure or equal pressure.

Ventilation based on negative pressure is by far the most common. But with all sorts of alternative housing systems, in



of these systems are also possible, such as length and ridge ventilation, or length and tunnel ventilation.

Ridge ventilation

With ridge ventilation, the fans are mounted in ducts that are placed in the ridge of the roof. The air inlets are then incorporated in the side walls. Ridge ventilation is generally only used for minimum ventilation.

Length ventilation

With length ventilation, the fans are in the end wall and the air inlets in the side walls. By further increasing or decreasing the speed of fans and opening or closing the air inlets, a wide range of air exchange is possible.

Tunnel ventilation

For maximum ventilation, tunnel ventilation is often used where the inlets are mounted in the end façade and the fans in the opposite end façade. This makes it possible to blow the air through the house at high speed during very hot days. The high speed provides a wind chill effect, which gives the chickens a pleasant-feeling temperature.

which the chickens regularly have to go outside, the demand for other ventilation systems is also increasing, in particular the demand for equal pressure ventilation. With this system, direct flow over the animals through the hatches is prevented.

Mechanical ventilation for poultry barns is available in a variety of forms. Below is a brief description of some common systems: ridge ventilation, length ventilation, tunnel ventilation and cross ventilation. Combinations

Cross ventilation

For cross ventilation, the fans are placed in a side wall. The inlets are positioned in the opposite side wall. Because the distance from inlet to fan is short, it becomes possible to exchange the air in

a house at a very low speed. This system is suitable for moving both a little and a lot of air.

Fans

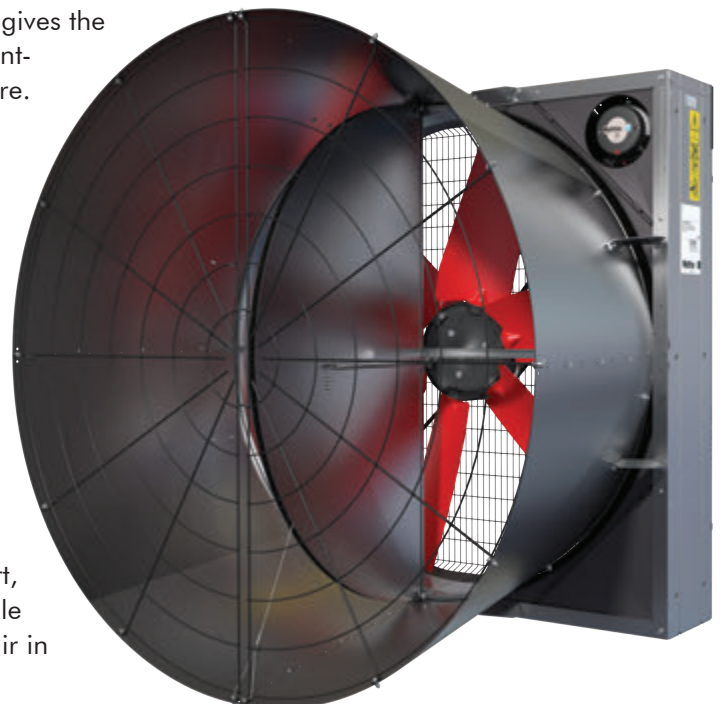
When choosing the type of fans used in poultry houses, i.e. the 'hardware' of the ventilation system, it is important to consider the following:

- the durability and reliability of the fans
- the suitability for intensive use
- the controllability
- the resistance to aggressive conditions

Multifan Galvanized Box Fans are highly reliable and thanks to their aerodynamic design, these fans combine high air output with low energy consumption. The box of the fan makes it easy to position the fan in a wall, and to equip your fan with add-ons such as a shutter. In addition, the Galvanized Box Fan can also be combined with light traps or air filters.

All Multifan fans are developed and made in-house in the Netherlands.

For more information, visit www.vostermansventilation.com



POULTRY TRANSPORT BY GIORDANO POULTRY PLAST

Since 1962, Giordano Poultry Plast has always shared and often anticipated the search for effective solutions for the entire poultry production chain: from hatching to breeding, all the way down to slaughtering and transport always with innovative solutions, obtained from continuous interaction with the production world and with technological partners who are leaders in the above-mentioned sectors.

From creation to design, development and final production, the company is always on the lookout for innovative, high-performance products and solutions that combine efficiency, economy, and durability and above all guarantee animal welfare.

The coops as a point product of the GPP line are a perfect

example of design, created to guarantee the best conditions for transporting animals, drastically reducing the risk during loading and unloading operations.

All the coops and boxes of Poultry Plast are strong and durable, hygienic and easy to clean. The animal welfare is guaranteed thanks to excellent ventilation, the easy stacking and also smooth and round surfaces minimize bruises and broken wings, preventing injuries during the coop handling.

The products of the range are made with HD polyethylene and UV stabilized that reduces ageing due to solar rays.

ALL THE COOPS AND BOXES OF POULTRY PLAST ARE STRONG AND DURABLE, HYGIENIC AND EASY TO CLEAN.



The Piedmont coop line is also very simple to assemble: push fit-self-locking. No equipment is needed but a simple pressure assures the complete assembly of the coop.

The technical evolution of GPP products underlines the ability to prevent and meet the growing expectations and needs of end users, as well as public opinion and international legislative bodies that animals are always treated properly, humanely and responsibly.

For more information, visit www.poultryplast.com



GALLOX, FEED PAN SPECIALLY DEVELOPED FOR MALES



VDL Agrotech has developed the Gallox, a new feed pan for feeding 8-10 males per pan in broiler breeder houses.

- The Gallox is equipped with “cups” and extra ridge, so the dosed feed will not spread further into the bottom pan while dosing the feed.
- Males have to peck the feed out of the small “cups” in a specific way, therefore it takes them longer to eat the feed.
- More quietness in the house during feeding.
- The grill-less design ensures that the cocks combs are not damaged and the males have optimal access to the feed.

There are 2 different dosing methods:

Method 1: Dosing of feed simultaneous with the feeding

The feed line remains suspended at feeding height and is fitted with extra triangular dosing plates which ensure that the feed is transported faster to the last feed pans. The reduction tube, a low dosage setting and a high auger speed ensures an optimal distribution of the feed over the feed pans, even when the males are already eating from them.

Method 2: Dosing of feed prior to feeding

The feed line has to be winched up manually or automatically

after feeding.

The feed pans are set in a dosage position where the daily supply in the hopper can be equally divided over all the feed pans in one time. The Gallox feed pan has 6 dosing positions and 12 different dosing volumes by using or not using a reduction tube. During the feeding, the feed line is winched down to feeding height. For a single dosage, the amount of feed in the transport tube of 400 g/meter should be added to the contents of the Gallox feeding pan.

Gallox has been extensively tested in practice.

For more information, visit www.vdlagrotech.nl

Bottom with small “cups” and ridge in which the feed portions are dosed.



SIGNIFY UNVEILS FIRST DYNAMIC LIGHTING SYSTEM TO IMPROVE WELL-BEING AND PRODUCTION OF POULTRY; ONCE NATUREDYNAMICS



The world leader in lighting, introduces the first dynamic lighting system to improve the well-being of poultry. Gradual shifts in light color and intensity throughout the day optimize the chickens' circadian rhythm and reduce stress in chickens, improving their health and farmers' yields. The new lighting systems are brought to market under the name ONCE, Signify's animal lighting specialty brand. ONCE NatureDynamics helps farmers to adjust intensity, photoperiod, and spectrum in response to birds' needs, bringing nature's power to your growing facility.

Never thought lighting would have such an impact on production

"We have now implemented

NatureDynamics in our barn, and the results are amazing, we never thought lighting would have such an impact on broilers," said Claus Wöste, one of the first farmers from Germany that started to use ONCE

NatureDynamics. "Already after one flock of birds we can conclude that the distribution of chickens in the barn has improved, and because of that also our chicken quality. The mortality and rejects in the NatureDynamics barn have



been half of what we normally see on our farm, which shows that we have significantly improved the health of our animals.”

Wireless app-based control makes NatureDynamics easy to use

NatureDynamics is the first dynamic lighting system for poultry that can be wirelessly controlled, letting farmers deploy effective lighting recipes at the touch of an app. Based on research, these recipes provide the light levels, spectra, and timing parameters necessary for top-quality poultry production. They provide flawless daytime lighting and ramp-up and ramp-down periods that mimic dawn and dusk. Growers profit from perfectly calibrated lighting, hassle free.

In addition, the app makes it possible to control the bird's movement by changing light groups and even apply different settings in certain parts of the barn. A temporary override function lets farmers change settings in a light group for a certain period,



such as during inspections or harvests.

A solution that works in multiple environments

The first luminaire that is released to work with the NatureDynamics system is the NatureDynamics Dome. With its wide beam angle, NatureDynamics Dome creates a highly uniform lighting grid, which makes this luminaire perfectly suitable for general lighting purposes. The wide beam angle ensures that birds naturally spread across a facility, preventing crowding. The system's base units are

NATUREDYNAMICS IS THE FIRST DYNAMIC LIGHTING SYSTEM FOR POULTRY THAT CAN BE WIRELESSLY CONTROLLED, LETTING FARMERS DEPLOY EFFECTIVE LIGHTING RECIPES AT THE TOUCH OF AN APP.

designed to facilitate multiple types of luminaire mounting – surface mounting, wire mounting or suspension from wires. Such versatility makes this solution ideal for a wide range of applications, in a wide range of environments.

For more information, visit www.once.lighting



ZOONOSES ASSOCIATED WITH POULTRY FARMING



By Dr. Rajani Rajesh,
BVSc & AH

Farm animals and poultry can carry a range of diseases, some of which can be passed onto humans. These diseases are known as 'zoonoses'. Transmission may result from direct contact with diseased birds, contaminated faeces, or through consumption of contaminated farm produce. Therefore, the consistent practice of proper animal care, good farmer hygiene and sanitation will minimize the occurrence of transmission of diseases from the animals to humans. Some diseases that might be transmitted from poultry to human are:

Avian influenza (AI)

Avian influenza viruses are very contagious among birds and some of these viruses can sicken

and even kill certain domesticated bird species including chickens, ducks, and turkeys. Infected birds can shed avian influenza A viruses in their saliva, nasal secretions, and faeces. The primary risk factor for human infection has been direct contact with live or dead infected poultry, but a few cases have resulted from consumption of uncooked poultry products. The signs and symptoms in humans have ranged from conjunctivitis to influenza-like illness to lower respiratory disease.

A potential future threat to public safety comes from the ability of AI viruses to exchange genetic material with human or other animal influenza viruses. This could create a new virus that humans have little or no immunity to that can spread easily between people. Good farming practices

TRANSMISSION MAY RESULT FROM DIRECT CONTACT WITH DISEASED BIRDS, CONTAMINATED FEACES, OR THROUGH CONSUMPTION OF CONTAMINATED FARM PRODUCE. THEREFORE, THE CONSISTENT PRACTICE OF PROPER ANIMAL CARE, GOOD FARMER HYGIENE AND SANITATION WILL MINIMIZE THE OCCURRENCE OF TRANSMISSION OF DISEASES FROM THE ANIMALS TO HUMANS.



are essential to reduce the risk of illness and to prevent them spreading during an outbreak.

Salmonella

Salmonellae bacteria are capable of causing enteritis and septicaemia in birds. Infected animals may produce meat, milk or eggs containing Salmonella. Feed contamination with Salmonella is known to be a source of infection for poultry. Therefore, it is recommended to monitor the Salmonella status of



poultry feed, and if found positive to take corrective measures. The use of heat-treated feeds or feeds subjected to other bacteriostatic or bactericidal treatment is recommended (e.g. organic acids). Vaccination can be used as part of an overall Salmonella control programme.

Salmonellosis in humans is caused by the ingestion of food contaminated with *Salmonella typhimurium* in poultry meat and *Salmonella enteritidis* in eggs. It is one of the most significant

causes of food poisoning in humans. Proper cooking kills *Salmonella* bacteria in meat and eggs.

Campylobacter

Campylobacter bacteria tend to multiply in large numbers in the hindgut of chickens, mainly in the ceca. Insects and rodents promote transfer of the *Campylobacter* infection from the general environment into the poultry buildings. The antibiotic treatment, phage therapy,

competitive exclusion and vaccination have been adapted at the farm level to reduce colonization of *Campylobacter* in poultry gut. It is a main cause of enteritis in humans. Effective sanitation of drinking water, sourcing of water from high quality supplies, avoidance of contact with pets and other species, good hygienic practices by poultry handlers. All poultry should be cooked to reach a minimum internal temperature of 165°F to prevent infection



through infected meat.

Escherichia coli

E-coli is present in a wide range of animals, from poultry to cattle. E. coli is an opportunistic pathogen that can produce a variety of symptoms in commercial poultry. E. coli is present in the birds and the poultry house environment and infects birds. However, if growers provide birds with proper house environment, ensure that they have easy access to feed and water as well as limit exposure to pathogens, E. coli infections can be limited or eliminated. Infection to humans is caused by eating contaminated food or contact with faeces. Good personal hygiene is essential in prevention of the disease.

Mycobacterium avium

It is closely related to the human and bovine tuberculosis bacteria.

In humans, *M. avium* infections can cause local wound infections with swelling of regional lymph nodes. Transmission occurs primarily through aerosolization and inhalation of the agent in dried bird droppings and contaminated soil. The infection is most severe in immunocompromised individuals. The generally accepted methods for controlling avian tuberculosis in poultry include identification and eradication of infected birds using intradermal tuberculin testing, replacement of contaminated housing and equipment, and isolation of new stock from the contaminated environment by rearing and maintaining new stock on wire or concrete floors. Avoiding overcrowding and other stressors, and ensuring that the birds are fed a nutritionally complete and balanced diet are also important in minimising the incidence and impact of this disease.

Newcastle disease

Caused by avian paramyxovirus. The best protection against the disease in birds is vaccination. Clinical signs in humans include conjunctivitis and possibly mild flu like symptoms. Infections are usually self-limiting with supportive care.

Here is a checklist to decrease human health risks:

- Wear respiratory protection when appropriate.
- Wear gloves when handling birds, animal tissues, body fluids and waste and wash hands after contact.
- Wear dedicated protective clothing such as a lab coat or coveralls when handling birds. Launder the soiled clothing separate from your personal clothes and preferably at the animal facility.
- Keep animal areas clean and disinfect equipment after using it on animals or in animal areas.

Ross 308 – The Broiler of Choice in Sub-Saharan Africa

Bulent Tanyildizi, International Commercial Manager, MEA discusses why the Ross 308 is the broiler of choice in this continuously growing and dynamic region.

In your opinion, why should customers in the SSA region choose to buy Ross?

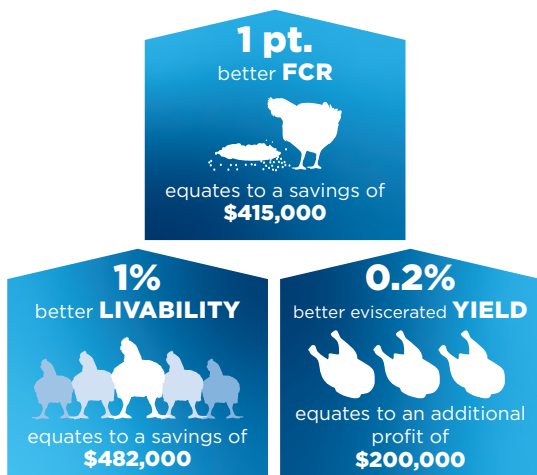
The Ross® 308 satisfies the demands of customers who require a bird that performs consistently well and has the versatility, robustness and cardiovascular strength to meet a broad range of end-product requirements and environments. The Ross 308 is the leading broiler worldwide, with its unparalleled and renowned performance in both open and closed-housing environments. Our customers across the SSA region choose Ross because it meets the requirements they are looking for in a bird, specifically in FCR and yield, which in turn maximizes their profit, making Ross the breed of choice in the region, in turn, providing the customer with the best return on their investment.

Can you tell us a little more about the advantages of the Ross breed?

Across the SSA region, the Ross 308 has advantages in both breeder and broiler performance. For example, the Ross 308 breeder is performing exceptionally well, steady gains in hatching egg (HE) output, and hatchability have delivered on average an additional **15–20 chicks** over the competitor and in some cases the difference is even greater. What does this mean?...well for a customer processing **1 million broilers** a week this means **35,000 less parent stock** are required to produce the same number of broilers, which is a big saving in itself. This also means that less breeder feed is required, which is another extra saving, especially since feed costs are high nowadays. If we check the numbers, it would mean **2,000 tonnes less breeder feed** equates to a saving of approximately **\$900,000** on feed alone.

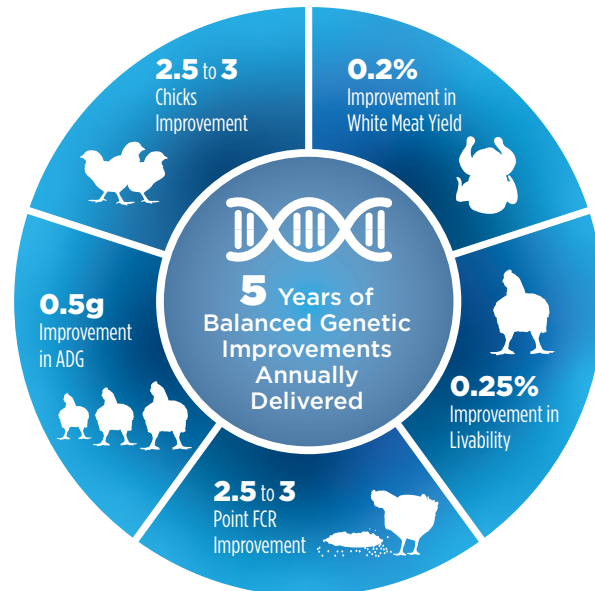


Faster growth rate, better livability and carcass yield deliver the most meat per kg at the lowest cost of production. Recent regional field and trial results demonstrate well this performance and the advantages over our competitors. Based on TMEA field results, the Ross 308 broiler performance shows a minimum of:



Figures above are annual and based on 1 million broilers per week at a kill weight of 1.8 kg

It is also worth mentioning the year on year continuous improvements being delivered through the genetics pipeline – the last 5 years have delivered:



How do you and your team support your customers across the region?

We have a very talented multi-cultural customer support team who live and work in the region, and also speak the local language, so we have a good understanding of the challenges our customers face. We also have the support of International Specialists and the Aviagen R&D department so our customers can have confidence in the Ross brand. We share our experience and keep our distributors up-to-date on the latest information and technologies at local seminars and workshops.

Ross also provides the best literature portfolio which includes parent stock and broiler management and training handbooks, performance objectives and nutrition specifications. Specific advice is also provided through the 'How To' series, Best Practices, and Hatchery Tip publications, and all information is available on the Aviagen website. Aviagen also recently released its global flock management app for Ross customers. The app offers quick and easy access to PS and broiler data, along with useful reference and monitoring tools, such as a date finder, EPEF calculator and a scoring tool. In addition to this, we have also recently launched our podcast series "The Eggspert View", which provides information on our key technical topics and key information from around the region. Subscribe now to our podcast on Spotify.



Scan the QR code above to download our Ross app



TRANSPARENT & SUSTAINABLE TECHNOLOGIES: A NEW GENERATION OF FEED ADDITIVES



Author

Dr. Stephanie Ladirat
R&D Director at Nuqo Feed Additives

The market of plant extracts or so-called phytogenics emerged in the late 80's and experienced a boom during the last decade, with the demand from

consumers for more sustainable ingredients. It corresponds as well to the end of 'black box' solutions and the development of more transparent, advanced and innovative technologies.

Innovative AND transparent

With the ban of antibiotics used as growth promoters (AGP) in several regions worldwide, nutritionists have tried to use additives based on plant extracts to improve performance of broilers to the same level as AGP. If the initial intention was to use plants extracts for their antimicrobial activity, research has now shown that they have a broader range of effects on gut functions (digestion, immunity, gut structure, gut microbiota ...) in the animals that can explain the

observed improved performance. As of today, one can summarize the main effect of phytogenics as such:

- **Modulation of microbiota composition and activity:** depending on dosage, certain plant extracts can limit the growth or virulence of certain pathogens while have limited effect on 'good' bacteria.
- **Stimulation of digestive functions:** several plant extracts can increase the activity of endogenous digestive enzymes and/or influence uptake and transepithelial transport, and therefore improve nutrients digestion and absorption.
- **Modulation of immune response:** Specific molecules can contribute to lower gut

inflammation through their antioxidant activity. Other molecules can modulate cytokines production from macrophages and/or down regulate the expression genes coding for cytokine production to also keep inflammation under control or to support development of acquired immunity.

• **Improvement of gut integrity:** Some molecules or natural ingredients stimulate mucous production and epithelial cell proliferation and therefore contribute to the maturation and integrity of the gut structure.

The group of phytonics covers a very wide group of bioactive molecules 'inspired' from Nature. If these molecules all come from a "plant", they may come from different parts of the plant (leafy part, bark, seeds, roots, etc.). They may also be extracted using different methods ranging from simple milling and mixing to more elaborated water distillation (essential oils), alcohol extraction (tinctures) or chemically synthesized (nature-like compounds) to name few. These ingredients can have very different properties, different effects on animals, and also different purity or stability, especially for the volatile compounds. Historically, many products on the market correspond to simple mixes of ingredients, with little transparency on formulation and no protective technology to reduce volatility, denaturation or oxidation of active ingredients.

With the evolution of the market, the better understanding of animal physiology, nutritionists and formulators are now expecting a new generation of solutions: Transparency is now a must-have to exactly understand and predict efficacy in animals. Manufacturing technology must guarantee the

stability and consistent efficacy of products. Finally, formulations should include innovative and exclusive ingredients, from land or marine plants.

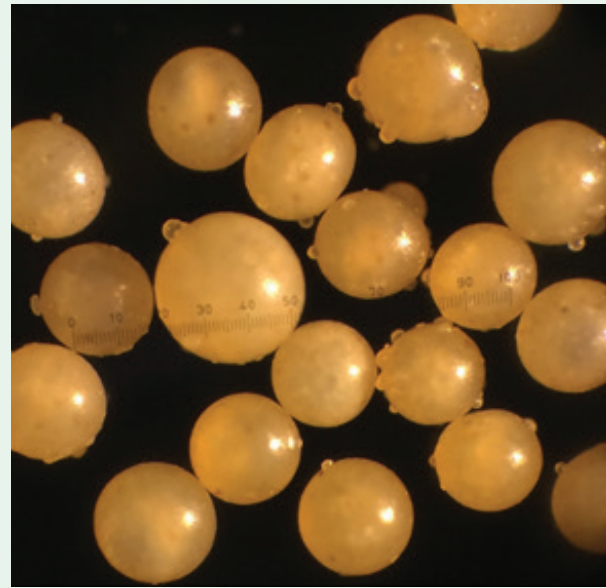
PhyTogenics & PhyCogenics, the full power of Nature

Phytonics are of great importance in animal nutrition, and marine macroalgae can be considered as supplements to positively influence animal performance and health parameters. Seaweeds represent a large and heterogeneous group, including brown algae (Phaeophyceae), red algae (Rhodophyceae) and green algae (Chlorophyceae). While algae are frequently studied as a source of nutrients, seaweeds possess several bioactive molecules, so called 'phyCogenics' (from Greek Phycos = Algae), that are studied for their prebiotic, anti-microbial, antioxidant, anti-inflammatory and immunomodulatory effects. Few examples of molecules exclusively found in marine algae are sulfated polysaccharides, phlorotannins, laminarins.

Research has shown the effects of several compounds and metabolites of interest, and their specific impact of physiology. Here is a short list of molecules or groups of molecules that have been specifically studied:

- Natural polyphenols such as phlorotannin, tocopherol, bromophenol (antioxidant activity)
- Sulfated polysaccharides or fucoidans (Immune enhancer)
- Natural pigment (to improve egg/meat colour)
- Specific complex polysaccharides (Prebiotic affect)

In a nutshell, phyCogenics are not meant to replace phytonics. They, however, represent a fantastic opportunity to explore and discover new molecules with potential



benefits on health of humans and animals, by leveraging the full potential of nature.

Protective technology, simply a "must-have"

First generations of phytonics were often based on a simple mix of herbs or essential oils. This type of solutions, however, do not fit well with the constraints of modern feed production. The known variability of composition due to environmental factors and high loss of volatile molecules during transport, storage, feed production, etc. result in poor or at least very inconsistent effects on performance and health in animals.

'Protective technologies' have become a golden standard for solutions based on plant extracts or phytonics. Different variant of coating, encapsulation or micro-encapsulation have been developed to guarantee the efficacy of products in the animal. They prevent the loss of active ingredients, also during the feed processing, and they also enable the release of active molecules exactly on spot in the digestive tract.

Recently, a company developed a new concept, based on

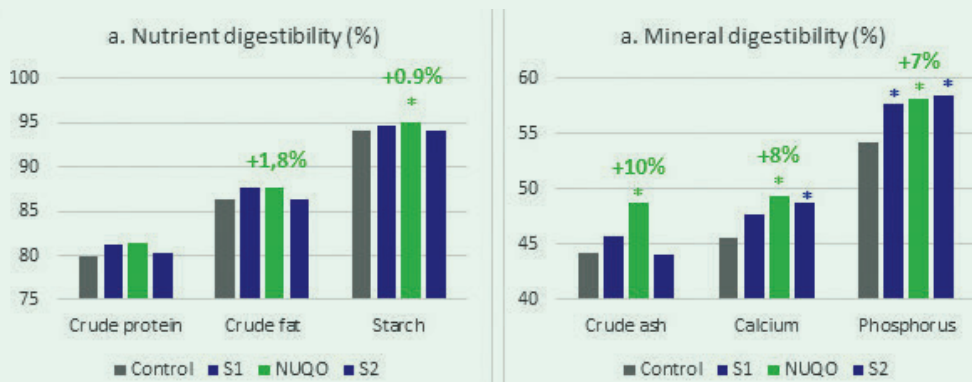


Figure 1: The effects of various solutions on apparent ileal digestibility of nutrients (a) and minerals (b) in broilers of 21 days of age. * p<0.05

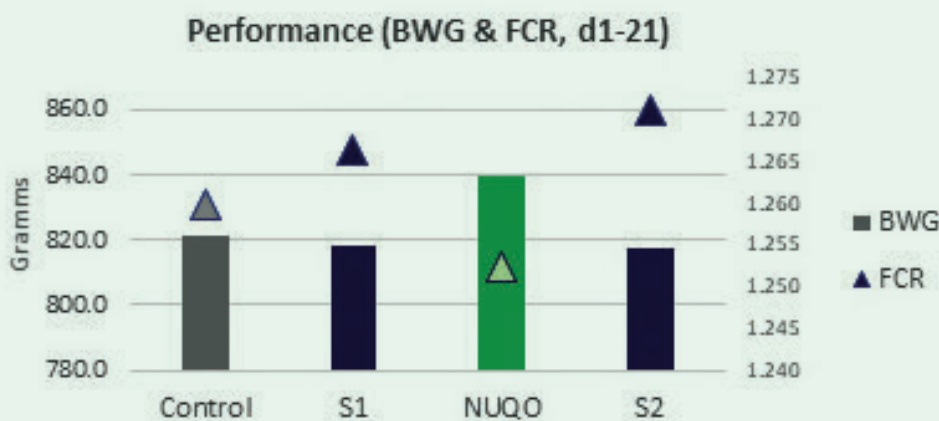


Figure 2: The effects of various solutions on performance (BWG, FCR) in broilers of 21 days of age.

the micro-encapsulation of phytonutrients + phycogenics. This innovative solution offers a very high concentration and, as well as a very good stability. Every particle contains the very same amount of active ingredients for optimal dispersion in feed and very consistent efficacy in animals.

The new generation of phytonutrients: better health & efficacy

Several trials were set to compare and validate the interest of this 'new generation of phytonutrients', based on a transparent formulation of phytonutrients and phycogenics, protected with a micro encapsulation. One of

these trials was performed at the University of Berlin, and compared the effects of 2 well-known solutions found on the market, based on encapsulated phytonutrients, and a new concept based on the microencapsulation of phytonutrients + phycogenic. The effects were measured on performance of the birds and apparent ileal digestibility of feed at 21 days of age.

Researchers have observed that the new concept not only improved digestibility of nutrients (crude fat, crude protein and starch) but also increased digestibility of minerals (crude ash, calcium and phosphorus) as compared to the negative control (Figure 1).

The other two solutions (S1 & S2) improved digestibility of some of the nutrients and/or minerals but not all and to a lower extent than the new concept.

Performance results at 21 days are well in line with the observed effects on digestibility (Figure 2). The new concept, which had the strongest effects on nutrient and mineral digestibility, also 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 new generation solution with a high concentration of protected actives had clear effects in the animals, with an improvement of feed digestibility that resulted in an improved performance.

Welcome the new generation of plant-based additives

Since the market of plant extracts emerged 30 years ago, there is now enough evidence and knowledge to understand the effects of these products, as well as the parameters that guarantee the optimal efficacy and best impact on gut health. Nutritionists can now expect solutions based on transparent formulation, that includes well-known but also innovative molecules, from land or marine plants, protected by advanced technology for stable and consistent effect. This 2nd generation of plant-based additives, based on new standard, will now replace the old generation; it represents a great opportunity for formulators and nutritionists to further invest in sustainable technologies, to better address challenges related to gut health and create more value for their customers.

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THE EFFECTS OF ESSENTIAL OILS ON COCCIDIA

CAPSULE	BOLUS	ANALYTICAL CONSTITUENTS
COMPOSITION Gelatine	COMPOSITION Magnesium oxide, vegetable fat from rapeseed, calcium stearate	Calcium 3.2%
ADDITIVES Mixture of sensory additives	ADDITIVES Mixture of sensory additives	Magnesium 33.4%
		Phosphorus 0.0%
		Sodium 0.0%

Calf coccidiosis is a common health issue in calves from around 3 weeks old until 1 year of age. The disease is caused by protozoan parasites of the *Eimeria* genus and is transmitted through oocysts that are found in the feces of the animals. The disease mainly occurs where animals come together or are crowded and where feces are more concentrated in the environment. Coccidiosis outbreaks are also occasionally seen when young and older calves are grouped together. Calves suffering from subclinical coccidiosis show no typical symptoms. They can lack appetite and have a decreased feed efficiency because of damaged intestines. All of this can lead to poor growth rates and weight gains. Clinical symptoms

of coccidiosis can be anorexia, depression, abdominal pain, dehydration, acute weight loss, weakness, and diarrhea, of which diarrhea is the most common symptom.

Natural alternatives

Essential oils and plant extracts are becoming more popular as alternatives in animal production. In the first place because the general public is demanding a greener supply chain, but also because of the limitations of traditional solutions such as bacterial resistance. Essential oils are very complex structures

(in comparison to the usual single synthetic compounds) and it is this complexity that makes resistance to be less likely.

In line with the growing

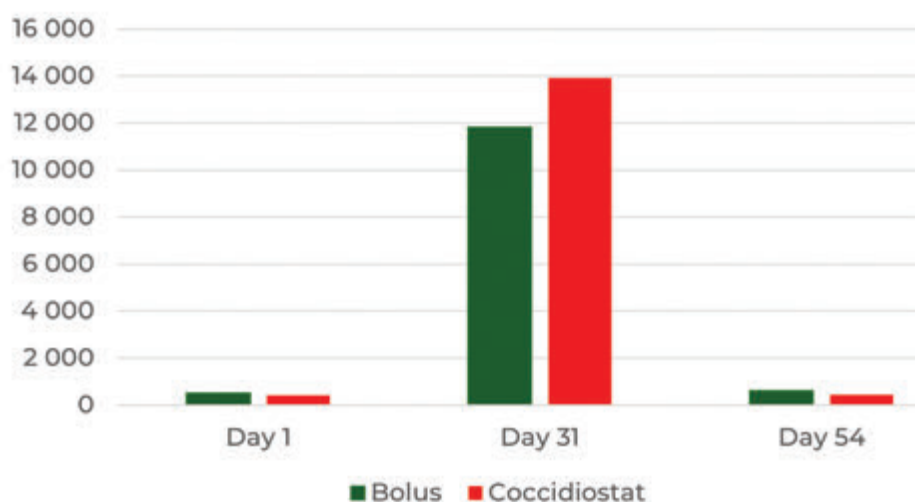
attention for safe and efficient alternatives, Resco is creating a range of phytotherapeutic boluses. Coxicryptop contains (amongst others) essential oils from clove, cinnamon, and eucalyptus and extracts from garlic.

Coxicryptop study

A study was done on 18 calves to check the effect of Coxicryptop on the amounts of oocysts in feces, in comparison to the effect of two known coccidiostats. 9 calves received Coxicryptop and 9 calves received the two coccidiostats. Results show that the calves that received the boluses have comparable numbers of oocyst per gram as the calves that received the traditional coccidiostats. Furthermore, the group of calves that received Coxicryptop gained on average 30 grams per day more than the control group. It is concluded that Coxicryptop is a satisfying natural alternative to coccidiostats.

For further information, visit www.resco-global.com

Number of oocysts per gram (days after treatment)





MODERN FEED CONCEPTS IN ANIMAL NUTRITION

Nagel Feed Ingredients (NFI) is an internationally operating company, headquartered in Hamburg, Germany, specialized in producing and supplying different feeding solutions based on monoglycerides of short and medium chain free fatty acids.

We supply the national and international markets through our company specialist in Germany, specialist abroad and large number of technologists and experts that are dealing with product development, scientific research, production, logistics and warehouse.

Our VilliVital smart feeding concept provides prevention and control of pathogen's pressure at farm's level (GRAM+; GRAM-; fat enveloped viruses). A synergistic combination based on α -monoglycerides provides

environmental friendly solutions that:

- Are active in the entire GIT and bloodstream
- Are more effective than free fatty acids
- Allow to avoid AB usage as a growth promoter
- Allow to reduce veterinary treatments
- Allow to reduce AB treatments
- Boosts effect on the immune response
- Improves animal performance

Supplementation of the diet with monoglycerides produced by our company showed a

SUPPLEMENTATION OF THE DIET WITH MONOGLYCERIDES PRODUCED BY OUR COMPANY SHOWED A SUBSTANTIAL IMPROVEMENT IN ANIMAL PERFORMANCE AND HEALTH STATUS.

substantial improvement in animal performance and health status. As a result, the usage of antibiotics as AGPs or as therapeutic treatment could be reduced. Our current field trials and scientific literature supports the findings in this field study, showing the strong antibacterial effects of monoglycerides compared to different antibiotics.

Through all the years working with Monoglycerides, we at NFI found an innovative way to deliver α -monoglycerides as a free flowing products without compromising bio-availability. Our solutions with high purity α -monoglycerides on a natural highly digestible carrier, in micro pellet form are environmental friendly, reliable from economical perspective and sustainable!

For more information, visit www.nagel-fi.com

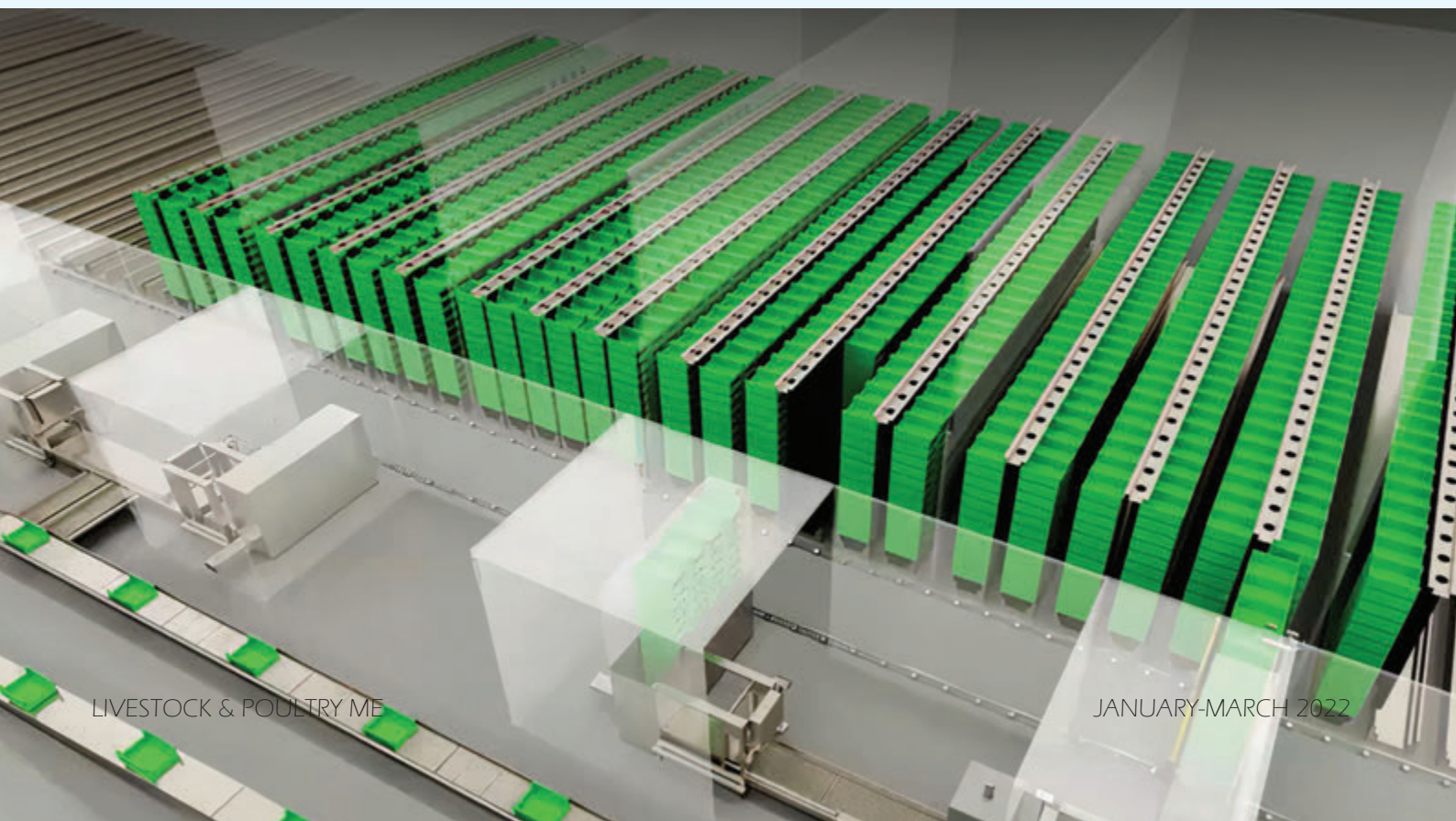
BÜHLER BUILDS LARGE-SCALE INSECT PLANT FOR AGRONUTRIS IN FRANCE

French insect producer Agronutris has chosen Bühler Group as its process solution provider for its first commercial scale black soldier fly plant. Bühler will deliver a full-scope solution for the facility, which will be built in Rethel, France. This collaboration is a major milestone for both organizations. It reinforces Bühler's commitment to ambitious targets that will help mitigate climate change and build a more sustainable

food system and supports Agronutris' goal to establish itself as a world leader for sustainable nutrition. The plant is planned to go into operation in 2023.

The 16,000 square meter insect plant in Rethel, France, when operating at full capacity, will process up to 70,000 tons of organic residues and produce high-quality protein for the aquaculture and pet food markets every year. "With the launch of this new site, Agronutris is entering its

industrial deployment stage. The facility of Rethel will be our springboard for the further industrial development of our activity," says Mehdi Berrada, CEO of Agronutris. "Bühler is a world-leading company with a tremendous experience in the food and feed sector. We trust in their capabilities to support us in the insect industry. This allows our teams to focus on our core activities: insect biology and operational management of our production flow. Our research and





development activities make for our competitive advantage.”

Bühler’s solutions for Agronutris will cover the entire supply chain. This includes feedstock preparation to provide safe, palatable, and nourishing feed to the larvae and a fully automated larvae growth system with sophisticated climate control. Bühler will also deliver the processing line to efficiently transform the grown larvae into protein meal and lipids with consistent quality, as well as the frass (excrement) handling system for a secure offtake of the rearing residues.

In addition, Bühler will be responsible for the entire automation and the timely project execution. The latter encompasses engineering, procurement, manufacturing, supply, installation, and commissioning. “The new project with Agronutris is a milestone for us. It confirms our goal of establishing ourselves as a key solution provider for the insect industry and to increase the inclusion of insect proteins in animal feed. Our solutions contribute to more sustainable feed supply chains,” says Andreas Baumann, Head of Market

Segment Insect Technology at Bühler.

Growing demand

To feed 10 billion people who are expected to live on our planet by 2050, about 250 million metric tons of additional protein will be necessary every year. This is an increase of 50% compared to today. The industry must address this challenge with a more sustainable production of existing sources of protein as well as alternative sources for direct human and animal consumption. Edible insects can play a unique role in upcycling food waste streams to high-quality proteins, which makes them an increasingly important source of protein while being environmentally friendly.

The market of insect proteins as feed is expected to significantly grow in the next ten years. The total turnover of insect feed operators is expected to achieve EUR 2.2 billion per year by the end of the decade. This growth will be led by two main sectors: the aquaculture sector, which will make up for 30% of sales volumes of insect producers by 2030, and the petfood sector, which will account for 40% of

the insect protein sales volumes by 2030.

Agronutris aims to contribute to the emergence of this industry and to become one of the global leaders of the sector. The growth of its team (joined by entomologists and agro-industry experts), its recent fundraising of EUR 100 million, and the collaboration with major companies such as Bühler, are some of the factors that will allow the company to live up to this ambition.

Bühler is committed to reduce water, energy, and waste by 50% in its customers’ value chains by 2025. This will help mitigate climate change and be the foundation of a more sustainable food system. Insects offer a unique opportunity. They are not only a healthy source of protein for food and feed, but they can be fed on waste, therefore converting food waste into protein. And their frass can be used as a fertilizer. That is why they are an important pillar in Bühler’s strategy to become the leader in sustainable proteins for food and feed.

For more information, visit www.buhlergroup.com

UP TO 50% MORE OUTPUT: A NEW BENCHMARK IN GREEN FORAGE PELLETING

With the new pellet mill 55-1500, AMANDUS KAHL has launched a flat die pellet mill in 2021 that has been designed to meet the special requirements of pelleting green forage. The first two presses of the type 55-1500 delivered in Southern Germany show the characteristics KAHL is known for, such as smooth running, low energy consumption or high reliability.

A special field of application for KAHL flat die pellet mills are drying plants for green forage. The bulky chopped dried forage can be processed immediately into pellets or grass cobs. With the new KAHL pellet mill 55-1500, customers receive a flat die pellet mill specially designed for this field of application. Despite its larger die diameter of 1,500 mm, it consumes less energy per tonne than type 45-1250. Moreover, it delivers up to 50% more output while taking up the same floor space as the pellet mill 45-1250. One reason for this is the larger open perforated surface that increases along with the die diameter. The machine is also suitable for other biogenic fibrous products, such as maize, straw and brewer's grains.

The width of the pan grinder rollers with different geometries is 240 millimetres. The 5 rollers ensure a high degree of roll over, which in turn increases the efficiency. Roll diameters of 450 mm and 550 mm are possible. Different bore diameters ranging



PELLETING OF HIGH-FIBRE GRASS AND ALFALFA MAKES STABLE STORAGE AND ECONOMICAL TRANSPORT POSSIBLE. THE PELLETING PROCESS REDUCES THE VOLUME OF THE GREEN FORAGE AND ENABLES DRY STORAGE OVER A LONGER PERIOD OF TIME.

from 6 mm to 18 mm do not pose a problem. Furthermore, the characteristic shearing effect of the KAHL flat die pellet mill could be further improved in the new type. Due to these and many other features, the 55-1500 pellet mill is ideal for use in the green forage processing industry. It is efficient, powerful, reliable, sturdy and easy to maintain. The new machine type is available with 250 kW and 315 kW motors. Since the footprint of the press 55-1500 is identical to that of the pellet mill 45-1250, it can be easily integrated into

existing plants.

Pelleting of high-fibre grass and alfalfa makes stable storage and economical transport possible. The pelleting process reduces the volume of the green forage and enables dry storage over a longer period of time. This process causes the least loss of nutrients of all known preservation methods. In addition, pelleting enables feeding with a high content of protein. Cobs are already an important protein component for organic farms. For quite some time there is a trend to use the KAHL flat die pelleting presses for grass cobs, mainly for the production of special shapes in premium quality (cloverleaf, floral or square shapes etc.).

For more information, visit www.akahl.com

To realise the usage of the hygienic entrance in the right way and make it as easy as possible, it is also important to have the correct setup. The nicer and more efficiently the hygienic entrance works, the better personal hygiene can be ensured.

Clear 'walking route'

When coming into the hygienic entrance – that is only possible through one entrance – the setup makes it clear where the 'walking route' is and which actions need to be done. This can be additionally clarified by an instruction board. With the setup in the correct order – first the changing facilities, then the shower or washbasin and the disinfection station, and finally the changing facilities with the wardrobe with clean work clothing and boots – the walking route is automatically followed in the correct way. This must also be the case on the 'return path': directly when coming into the laundry basket where the used work clothing can be left behind, then the shower or washbasin and the disinfection station and then the changing room when you put your own clothes on again.

Good changing facilities

With a good changing room and the correct facilities, as an agricultural business you can make a good start immediately. Not only for your visitors, but also for yourself and your employees. It is nice if the space is large enough to be able to change well. Your own clothes can easily be hung up or stowed in a wardrobe or storage and clothing cabinet. Elpress cabinets may also be locked and therefore they are ideal for storing valuable personal possessions such as a watch, jewellery, car keys, wallet and smartphone. Put



THE RIGHT SETUP FOR GOOD PERSONAL HYGIENE IN THE INTENSIVE LIVESTOCK FARMING SECTOR

a bench in the changing room to make it easier to take off your shoes. Furthermore, a waste bin or bin bag holder are to be present in the changing room. Because Elpress changing facilities are made of stainless steel, steel and/or plastic, they are simple to clean.

Wash your hands well

If no shower is present, there needs to be good facilities for washing your hands. It is important here that this is always done well, that hot water is available and that these facilities can be kept clean simply and well.

THE NICER AND MORE EFFICIENTLY THE HYGIENIC ENTRANCE WORKS, THE BETTER PERSONAL HYGIENE CAN BE ENSURED.

Clean, disinfect and store your boots simply

In the clean area there needs to be a storage and clothing cabinet for sufficiently clean work clothing. There is also a boot storage rack here with sufficient boots of various sizes. After coming back out of where the animals live, the boots are to be cleaned and disinfected well. Elpress has various options for this.

Elpress is a specialist in the field of personal hygiene. There are different variations available from us for most provisions for a hygienic entrance, so that there is always a combination of products that fits perfectly within your hygiene management and your available budget.

For more information, visit www.elpress.com

SLEEPING MATS FOR COWS CAN IMPROVE ANIMAL WELFARE & COMFORT



IDS manufactures and distributes a wide range of technical mats and rubber floorings for the agriculture industry. IDS products increase comfort, and security for cattle and workers.

More and more farms choose to replace freestall straw bedding by rubber mats for three reasons: Rubber mats increase cattle comfort by using soft foam pads or naturally soft rubber to provide a comfortable bed for cattle. The second reason is to reduce straw consumption. Indeed, rubber freestall beds only need a thin layer of straw to keep it dry. And last but not least: rubber beds are easy to clean with high pressure cleaner,

therefore it prevents cattle infections, reduce manure treatment, and save time.

IDS provides individual interlocking rubber freestall beds as well as rubber beds in roll.

Various thickness and comfort qualities are available to meet the needs of every farm.

IDS also offers solutions for circulation areas and milking rooms. Sturdy and anti-slip rubber floorings ensure security and comfort for cattle and workers by reducing risks of falls. Animals are less stressed, and injuries and veterinary costs are therefore reduced.

The animal well-being improvement is visible on their productivity. Like rubber freestall beds, rubber floorings are quick and easy to clean with high pressure cleaner. Some of IDS floorings are even suitable for scraped passage.

IDS products help you to improve the well-being and productivity of your cattle, by using long lasting and high quality material such as natural rubber and latex foam to increase cattle comfort and security. They also allow you to save time and money by reducing straw consumption and cleaning time.

For more information, visit www.ids-agri.com





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