

OCTOBER - DECEMBER 2021

LIVESTOCK & POULTRY MIDDLE EAST & ASIA

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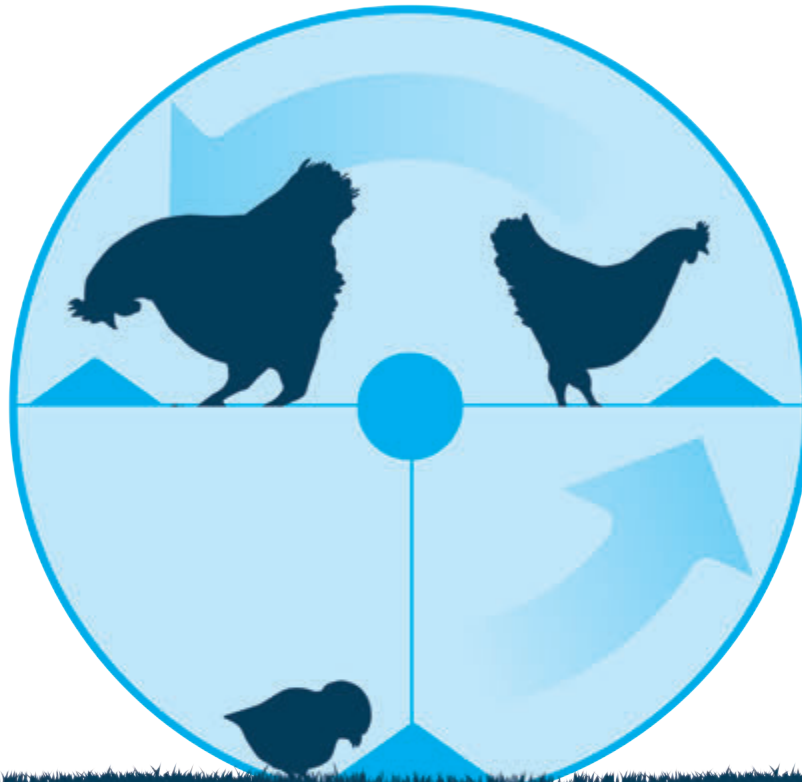


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MIDDLE EAST & ASIA



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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

KEPRO B.V. VETERINARY SOLUTIONS NOW AVAILABLE IN THE UAE

The Veterinary Group (TVG) is pleased to announce that they have entered into a distribution agreement with KEPRO. This agreement will allow them to meet their customers' changing demand for pharmaceuticals in the production, poultry and equine segment.

KEPRO, located in Netherlands has been producing veterinary pharmaceuticals for livestock since 1972. They manufacture sterile as well as non-sterile veterinary pharmaceuticals and the range consist of watersoluble powders,

oral liquids, injectables and specialities such as antiparasitic substances. Their high-end production process meets the latest European GMP (Good Manufacturing Practice) standards so that quality is always guaranteed.

"Kepro's business operation is based on sustainability, efficiency and sharing knowledge – This is aligned with our values and aspirations at TVG. We pride ourselves on being a transparent data-driven organization working together with our customers to get a

healthy return from their business.

This new partnership will not only place us in a position to offer the best quality medications and supplements but also help share Kepro's expertise on good farm management." - said Steven Wright, CEO of TVG.

Besides veterinary pharmaceuticals, KEPRO also develops nutritional additives that help to keep animals from getting sick in the first place. Their mission is to prevent and resolve health problems among livestock.

LED TECHNOLOGY ALLOWS PRECISION LOCATION OF COWS NEEDING ATTENTION



Merck Animal Health and Allflex Livestock Intelligence, a livestock portfolio of digital products within Merck Animal Health, announced new ear tag technology featuring a light-emitting diode (LED). The advancement allows producers to more quickly identify cows that need attention based on Allflex monitoring data.

The new Allflex Flex V2 tag features a first-of-its-kind multi-function LED indicator. The indicator

allows dairy managers, staff and veterinarians to quickly identify specific animals at a glance – even in a large group – minimizing disruptions and saving time and labor involved in searching for target cows by their identification numbers.

"The Flex V2 monitoring ear tag allows for precision cow management in the pen," said Brandt Kreuzer, Allflex dairy manager. "Different LED light patterns indicate individual cow needs based on critical data the Flex V2 tag collects to deliver timely reproduction and animal health insights."

Dairy producers can customize light patterns on the Flex V2 to meet operation needs. For example, a producer could set up the device so that a slowly blinking light indicates

a cow is ready to be bred and a tag that is blinking fast indicates she may need an animal health intervention.

"A tag that is not blinking provides peace of mind, knowing the cow can be left alone to do what she does best – efficiently produce milk," Kreuzer said.

Tom Bruins, member of Bruins Dairy LLC in Waupun, Wisconsin, said the Flex V2 tag speeds herd health checks and makes it easier to spot cows in heat.

"I like to see every cow every day, but this technology allows us to single out the cows that need attention faster. During herd check the vet knows which cows we are trying to catch," Bruins said.

The enhanced ability to detect cows in heat improved the herd's standing heat conception rate by 15 to 20 percent for third lactation and higher cows.

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Mishandling of wastes can attract flies and cause odor problems



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Dryer/Semi-Composter



Model KNLL Composter

All kinds of animal and biodegradable wastes can be processed in 24 to 40 days using this machine. It is automatic and can be filled and get the fully composted final product at the end of the pit. The final product is dried and odorless and is free of bad pathogens, uniform size, harmless to plants and the environment and also easy to apply. There are different models and capacity of this machine from 4.4 to 70 tons per day.

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PATHWAY INTERMEDIATES FILES AN INTERNATIONAL PATENT APPLICATION FOR THE NEW PRODUCT 'THERMOREX'

Pathway Intermediates filed an international patent application for the new product 'ThermoRex' in September 2021.

ThermoRex is a high-quality functional feed additive solution developed by Pathway Intermediates, which effectively relieves animal stress through its unique fermented materials, thereby contributing

to the improvement of animal productivity and welfare. Since its first launch in 2020, ThermoRex has created a sensation as a new concept, a stress reduction one-stop solution in the global livestock industry.

Through the international patent application under the PCT (Patent Cooperation Treaty), Pathway Intermediates expects to secure exclusive rights in the

global market and accelerate overseas registration and sales of ThermoRex, a technological resource developed at the global-level Pathway research facility.

Pathway Intermediates promises to strengthen its technological competitiveness in the global livestock industry through continuous research and development.

EXPERTISE IN NEW COBB BROILER MANAGEMENT GUIDE HELPS UNLOCK FLOCK POTENTIAL

The new Cobb Broiler Management Guide includes expanded, updated, and newly added technical expertise to help customers optimize flock performance. The informative guide is available on the Cobb website and the Cobb Flock Management app. It covers topics such as water management, ventilation, equipment, and several other best practices in broiler management.

"At Cobb, we consistently bring our customers the latest technical expertise to help make sure products reach maximum performance," said Robin Jarquin, director of world tech services. "The new broiler guide includes critical information to help support even more yield, better feed conversion, and healthy flocks for customers."

New information includes:

- Recommendations on how to reuse litter.
- Water management recommendations including a reference table to help evaluate water quality.
- Management techniques and diagrams for naturally ventilated

houses.

- Guidance for record keeping and data collecting along with sample sheets to record information.

Expanded and updated information includes:

- Updated format and guide composition to make information easy to find.
- Expanded explanation of tunnel ventilation with additional data and graphs.
- Updated equipment installation recommendations for both perimeter and tunnel inlets with inlet sizing examples.
- Expanded information on circulation fan systems and their role in managing house moisture levels.
- Updated general recommendations for installing high-pressure fogging systems.

- A simplified approach to understanding the specific fan requirements for the various levels of ventilation with easy-to-follow calculations using the same sample house dimensions and fans throughout.

"The Cobb Broiler Management Guide is an industry-leading resource that helps customers raise the bar and achieve the full potential of broilers," said Jarquin. "It is one of the many ways Cobb supports customers and makes quality protein accessible, healthy, and affordable worldwide."



KEMIN BREAKS GROUND ON NEW FACILITY TO PRODUCE CLEAN-LABEL PROTEIN INGREDIENTS FOR MEAT AND POULTRY INDUSTRIES

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, breaks ground on a new manufacturing site in Verona, Missouri, to produce clean-label ingredients that are used in a variety of applications for the food technologies sector.

The new facility, scheduled to open in March 2023, will be a state-of-the-art production plant for Kemin Food Technologies – Americas to manufacture its Proteus® portfolio of patented, clean-label protein ingredients

for meat, poultry and protein-based applications. Kemin acquired Proteus Industries in April 2021, adding to Kemin's innovative portfolio for sustainable, yield-enhancing technology to further expand its global Food Technologies business.

The new 38,000-square-foot production plant is a \$40 million investment and will employ more than 30 full-time workers in the Verona community once its fully operational. The site will have an initial capacity to create applications for more than 100 billion pounds of meat, poultry and protein-based ingredients

that allow food processors to produce meat products with improved quality and patented clean-label ingredients.

"With its technologically advanced, sustainable and clean-label attributes, our Proteus line is in high demand with food processors that provide meat, poultry and protein-based products to consumers," said Dr. Chris Nelson, President and CEO, Kemin Industries. "The Proteus products help to improve yield, nutrition and quality of functional foods, and with this new facility, we'll be able to serve and expand our customers in the food technologies space."



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HENTRACK 1.0 - HENDRIX GENETICS LAYING HENS

HenTrack is a research project that focuses on the identification of laying hen behavior related to laying hen welfare in cage-free housing systems. The goal is to improve the current breeding methods that are used to select laying hens for the various housing systems.

For poultry breeders it is not always easy to select laying hens that thrive in all housing systems. The goal of this research collaboration between Hendrix Genetics Layers and Dr. Michael Toscano, the group leader of the Center of proper Housing of Poultry and Rabbits (ZTHZ) in Switzerland, is to identify new traits, and the appropriate methods to keep track of these traits in alternative housing systems for egg layers.

The HenTrack project will make use of the state-of-the-art, large-scale cage-free research facilities at The Aviforum in Zollikofen, Switzerland to conduct detailed, continuous observations on the behavior, the health, and the welfare of individual laying hens over the laying period. Combining

behavioral patterns with animal health and welfare indicators will allow Hendrix Genetics Layers to add new

traits (phenotypes) to their breeding program. Which will help to bring the performance of their breeds in alternative housing systems to an even higher level.

The data that is currently generated by HenTrack 1.0 includes information on how animals acclimate to standard commercial stressors such as human interference, environmental conditions, and vaccinations, as well as variation in use of their environment, including access to the wintergarden and the use of popholes. Information collected at the Aviforum, using large groups, within a commercial aviary housing



system, will be combined with traditional breeding evaluations conducted by a team of laying hen geneticists, in small family groups and more focused observations on productivity and egg quality.

In HenTrack 1.0, Dekalb White laying hens are tracked. The Dekalb White is a chicken breed that is quickly gaining market share in markets that are moving away from caged housing. The Dekalb White laying hens are recognized for their docile behavior and excellent performance in terms of egg laying persistency, egg quality and overall livability, in cage-free housing systems.

AGCO ACQUIRES FAROMATICS, A PRECISION LIVESTOCK FARMING COMPANY

AGCO (NYSE: AGCO), a worldwide manufacturer and distributor of agricultural machinery and precision ag technology, announced that it has acquired Farm Robotics and Automation S.L ("Faromatics"), a precision livestock farming company.

Faromatics is the creator of ChickenBoy, the world's first ceiling-suspended robot that monitors broiler chickens and helps farmers increase animal welfare and farm productivity. ChickenBoy uses a complete set of sensors to

measure thermal sensation, air quality, light and sound. It also uses artificial intelligence (AI) to identify risks to health, welfare and farm equipment.

"This Faromatics acquisition supports our vision of being farmers' most trusted partner for industry-leading, smart farming solutions across every area of our business," said Eric Hansotia, AGCO's Chairman, President and Chief Executive Officer. "We're excited to create smart technology solutions for

livestock producers, strengthen our existing capabilities, and accelerate innovation that helps our customers increase profitability while improving animal welfare."

"We have now reached a moment where the combination of great technology with global market reach has the potential to make a lasting impact on animal welfare and farm productivity," said Dr. Heiner Lehr, CEO of Faromatics. "We are very excited to be joining the AGCO team."

A NEW CONCEPT FOR RUMINANTS IN SOUTH AFRICA

XL BEEF, a complete solution for growing and fattening beef cattle, improving economical results of beef feedlot operations.

Wisium is an expert in animal nutrition and has an international footprint. Thanks to the strong relationships with its customers and the global R&D, Wisium can propose solutions, concepts and products connected to market and customer needs.

Wisium presents XL BEEF, a specific concept for growing & fattening beef cattle. This complete offer includes nutritional specialties in the form of macro packs, specifically designed to optimize each production phase. In addition,

Wisium provides decision-making tools to identify the necessary facets of each specific feedlot to customize the offer.

Today's beef feedlot operations have increased in complexity. For this reason, the use of technology and technical products become more and more important to maximize profits.

Calf and raw material prices are under enormous strain and have seen profound increases in the last couple of years. Weaner prices increased by 40% and maize prices by 70% in the last 5 years. In comparison meat price

only increased by 13%. These parameters have a direct impact on Beef feedlot profit margins, putting the beef producers under pressure for survival in South Africa.

The main goals for a successful feedlot operator are to obtain a good quality calf, well optimized quality feed, while maintaining a healthy optimized environment. These factors will improve the main parameters of profit namely average daily gain, feed conversion ratio, morbidity, and mortality.

XL BEEF was developed by Wisium, to help the modern feedlot operators in achieving their respective goals.

GI OVO INTRODUCES THE EGG CRATE 180

GI OVO introduces the Egg Crate 180, a crate perfectly designed for the transport of 180 chicken eggs.

In addition to the user-friendly design, the crate is not only very light, but also very strong and durable. This egg crate is an ideal solution for large consumers of eggs, such as retailers, bakeries or wholesalers.

The cardboard (one-way) boxes that have been used up to now in combination with paper egg trays can easily be exchanged for the crate. In combination with the plastic egg tray that is already in use everywhere, a sustainable system is created. Compared to cardboard, the use of the Egg Crate 180 is many times cheaper and many customers will be grateful for its use.

For more information about the Egg Crate 180, please visit www.gi-ovo.com.



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Easy application
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ARM & HAMMER™ CERTILLUS REFORMULATION ANNOUNCED

Arm & Hammer Animal and Food Production announces the reformulation of regional CERTILLUS™ brands for U.S. dairy producers. The reformulation helps fine tune and strengthen disease prevention from pathogens such as Clostridia. CERTILLUS Targeted Microbial Solutions™ are available for feed, forage and manure to manage pathogen pressures that impact animal health and performance.

“Every dairy farm is under pressure from a wide variety of pathogens, including Clostridia. CERTILLUS can help livestock reduce the risk of the negative impact these pathogens can cause,” says Dr. Tom Rehberger, director of innovation and product development for Arm & Hammer Animal and Food Production. “Recent research showed that CERTILLUS also helps maintain

consistent milk production. The new reformulations will reinforce these benefits.”

ARM & HAMMER™ discovered that each of nine regions across the U.S. has unique bacterial populations and has developed CERTILLUS blends based on these regional differences. This reformulation was the result of extensive microbial surveying to reevaluate all regional blends, test them against key pathogenic challenges in each region, and determine any necessary updates. The new blends are based on inhibition profiles for pathogenic and non-pathogenic Clostridia, along with other pathogens known to affect immune and intestinal barrier functions.

“The process undertaken to reformulate CERTILLUS is part of the ongoing investment by ARM & HAMMER to ensure that we stay

abreast of the most pressing threats on dairies by delivering the most effective products and solutions,” says Jesse Thompson, ruminant product development manager for ARM & HAMMER. “CERTILLUS is a part of a complete portfolio of products designed to strengthen immunity and enhance performance on dairy operations.”

Targeted Microbial Solutions use proprietary strains of Bacillus selected to combat the specific challenges in the Microbial Terroir™ of the dairy—the environment, soil and animals specific to each farm location. The beneficial strains of bacteria help combat harmful pathogens that impact animal health and performance. All new formulations will deliver 2 billion CFU/hd/day, except for the Southwest formula, which will deliver 2.5 billion CFU/hd/day.

VISIT ROXELL'S STAND AT VIV MEA 2021 IN ABU DHABI

Roxell will have a stand in Abu Dhabi from 23th to 25th November 2021 in Hall 7, in the 'Farm Production' zone.

“We are eager to demonstrate the level of quality and strength of our feeder pans for broiler breeders, broilers and layers.” Says company representative.

In March, Roxell acquired the Dutch company Holland Heater. Roxell's heating range was expanded to include a wide range of convection heating under the brand name Siroc. The new



Siroc heating range perfectly fits the needs and practices of modern livestock companies.

Roxell will also demonstrate iQon™, poultry feeding controller. You can see how the controller manages the entire feeding process. In addition, this central computer is a way of increasing the biosecurity at your company.



The Koozii® group nest is also a success in the Middle East. Poultry farmers appreciate the very large nesting space. It is designed to ensure animal welfare and handle eggs with care. Roxell would love to show you how you can achieve a greater number of fertilized eggs with the Koozii.

NATIONAL LABORATORIES RECEIVE UKAS ACCREDITATION FOR 61 NEW FOOD, VETERINARY PRODUCT TESTS

The United Kingdom Accreditation Service (UKAS), the UK's national accreditation body for organizations that provide certification, testing, inspection, and calibration services, has approved 61 new tests of the National Laboratories Department of the Ministry of Climate Change and Environment (MOCCA).
 Currently, the department offers 410 internationally accredited laboratory tests for animal diseases, crop pests, pesticides and their residue in food products, veterinary products, water, soil, and fertilizers.

Moreover, for the 17th consecutive year, UKAS has renewed the National Laboratories' ISO/IEC 17025 accreditation that outlines

the requirements for testing and calibration laboratories in terms of quality system, technical competence, and accuracy of results.

The National Laboratories Department adheres to the standards adopted by the concerned local authorities and the Codex Alimentarius Commission, an international food standards body established jointly by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO).

In H1 2021, the department's central and satellite laboratories ran 156,663 tests on 95,319 samples. Satellite laboratories are located at border crossings and

conduct tests on samples from inbound consignments to verify their compliance with UAE requirements before they enter the country and to expedite their release. Non-compliant consignments are either returned to the country of origin or destroyed on the spot.

His Excellency Eng Saif Al Shara, Assistant Undersecretary for the Sustainable Communities Sector and Acting Assistant Undersecretary for the Food Diversity Sector at MOCCA, said: "Food safety and security are top priorities for MOCCA. In this context, the Ministry's National Laboratories Department works diligently to raise the efficiency of technicians and equipment at its laboratories."



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VISITING DELEGATION SPOTLIGHTS U.S. DAIRY, DEEPENING PARTNERSHIPS

U.S. dairy farmers traveled to the UAE on a trade mission to highlight their country's long-term focus on exports to the region as the entire U.S. dairy industry increases its commitment to global sustainability best practices. The mission participants included dairy farmer delegates from across the United States that hold top level leadership roles for research and promotion boards in addition to U.S. Dairy Export Council (USDEC) executives.

As the world's largest single country producer of cow's milk with 101.3 million MT during 2020, the United States offers

tremendous supply diversity to the region with the breadth and depth of high-quality products. Over the last five years, skim milk powder/non-fat dry milk and cheese accounted for about half of all U.S. dairy export volume to Middle East North Africa (MENA). However, demand increased during the pandemic and U.S. export value to the region grew 20% in 2020 to \$328 million.

The farmers on the mission stated that over generations, U.S. dairy farms have improved efficiency and increased their ability to meet the growing global population. The long legacy of

environmental stewardship is expanding to include ambitious environmental goals to become carbon neutral or better by 2050.

"Continual progress is an ever-present commitment from U.S. dairy farmers and suppliers," said Krysta Harden, U.S. Dairy Export Council (USDEC), president and CEO. "The U.S. dairy community is accelerating adoption of new practices and technologies that use fewer resources and emit fewer greenhouse gases, including methane, while producing innovative and affordable products that nourish a growing global population."

NEW ZEALAND EYES GROWTH IN F&B EXPORTS TO UAE TO MEET SHIFTING DEMAND FOR PRODUCTS OF SAFE AND TRUSTED PROVENANCE

Consumers in the UAE are willing to pay a premium for high-quality food and beverage products that taste good, are healthy, and they can trust, according to a new report by Kantar, commissioned by New Zealand Trade and Enterprise (NZTE), the government agency charged with helping New Zealand businesses to grow internationally. Following the Covid-19 pandemic, consumers in the UAE care more about where their food comes from and how it was made, with more than 50% of those surveyed agreeing this impacts their F&B purchasing decisions.

The survey, conducted in June 2021, revealed the top five criteria influencing grocery shoppers' purchasing decisions are quality, nutrition, taste, provenance, and safety. Consumers also want to be

more informed about their food and beverage choices, with half of the respondents stating they read the nutritional information on labels and consider the country of origin of F&B products to be very important.

As a leading agricultural nation, New Zealand sees an opportunity to capture even more of the UAE F&B market and raise its profile as a trusted, sustainable global food exporter. New Zealand is already

Dubai's second top food trade partner, accounting for 13% of all food imports to the emirate in 2020, according to the Dubai Chamber of Commerce and Industry. With the UAE aiming to become the most food-secure nation by 2051, and conscious consumerism on the rise regionally, New Zealand anticipates significant growth of its F&B exports to the UAE and wider Gulf region over the next years.



EUROPEAN COMMISSION APPROVES UAE CAMEL MILK FOR CONTINUED EXPORT TO EU COUNTRIES IN 2021

The Ministry of Climate Change and Environment (MOCCA) announced that the European Commission has approved the UAE's Camel Milk Residue Monitoring Plan and continues to allow the export of UAE camel milk to the 27 EU countries for 2021.

His Excellency Eng Saif Al Shara, Assistant Undersecretary for the Sustainable Communities Sector and Acting Assistant Undersecretary for the Food Diversity Sector at MOCCA, said: "Enabling food products to compete in local and international markets is a priority that we aim to achieve in collaboration with our strategic partners from the public and private sectors. In this context, the Ministry has issued effective legislation and continues to roll out control processes to ensure our food products meet the latest international safety standards. We liaise with our counterparts in every target market to understand their import and health requirements, and develop plans to guarantee compliance of our food products."

He added: "With 4,500 tons produced annually, camel milk and its products are among the

UAE's signature foods. They are in high demand locally, and owing to Al Ain Farms and Emirates Industry for Camel Milk and Products (EICMP) – the manufacturer of the popular camel milk brand Camelicious, they are making inroads into regional and global markets. This requires continuous follow-up with the concerned authorities, such as the European Commission, to keep up to date with the import requirements and help local producers meet them."

During Q1 2021, MOCCA worked closely with Abu Dhabi Agriculture and Food Safety Authority, Dubai Municipality, Al Ain Farms, and EICMP to secure the approval of the European Commission for the UAE's Camel Milk Residue Monitoring Plan. This included overseeing the two manufacturers' compliance with the import requirements and submitting annual reports of residue percentages to the Commission.

To reflect the updates in the export regulations in 2020, MOCCA issued the Ministerial Decision No. 106 of 2020 regarding the fulfillment of EU requirements by the facilities exporting camel milk and its products.



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East Africa
Middle East

West Africa
Southeast Asia

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Long-term partnership.

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Concerned about both, the price and the quality of the feed.

Products made in the European Union

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CARGILL LAUNCHES POULTRY FEED WITH ESSENTIAL OILS FOR HEALTHY FLOCKS AND MAXIMIZED EGG PRODUCTION

Backyard poultry owners want natural, wholesome feeds that help their birds thrive, keep their eggs strong and keep coops fresh. Cargill is delivering on this demand by adding essential oils to its Nutrena® Naturewise® poultry feeds. The natural essential oils contribute to the promotion of egg weight, size and production, enhanced palatability and a fresh aroma direct from the bag.

"We listened to what poultry owners and soon-to-become owners want most and expect from their poultry feed," said Stephanie Poupart, poultry strategic marketing manager in

Cargill's animal nutrition business. "We made their desire for feeds that contribute to healthier, happier chicken flocks, stronger eggs and fresher coops our call to action in developing the new NatureWise® products."

In addition to the egg weight, size improvements and feed palatability enhancements NatureWise® feeds offers:

- FlockShield™ proprietary ingredient mix helps maintain a healthy gut and strengthens the immune system,
- Prebiotics, probiotics and yeast culture to support optimum digestion and nutrient absorption,
- Vitamin D3 to promote

calcium absorption and strong eggshells,

- Plant extracts to support healthy bird growth and bone formation, and
- Yucca schidigera extract to aid in the control of manure odor.

During an 8-week observational study of nine backyard flocks fed NatureWise® Layer Feed, owners documented pleasant aroma experiences when opening the bag of feed. Birds had a better appearance, laid more eggs (with deeper golden yolks, stronger eggshells and superior quality overall), and appeared to enjoy their feed more, had more energy and seemed "happy."

PERSTORP SIGNS EXCLUSIVE DISTRIBUTION AGREEMENT WITH MEGAVET FOR THE UAE AND OMAN

Perstorp announced a new distribution partnership with Megavet. The company will be responsible for marketing, distribution and sales of our range of animal nutrition solutions for gut health and water treatment in the UAE and Oman.

The available portfolio includes ProPhorce™ SR 130, the original tributyrin solution to support gut health that is a safe, easy to handle and cost-efficient as well as Perstorp's solutions designed specifically for optimal water treatment.

The primary purpose of both companies is fully aligned by the focus of leading change that advances everyday life by customer focused innovations of products, processes and technology. "This valued partnership with joint commitment brings us closer to

providing the Middle East market full access to Perstorp's solutions for animal nutrition, which are known for innovativeness and exceptional quality. We believe that with this strong alliance we can help every producer in Oman and the UAE, big and small, to achieve excellence", says Enrico Appiano, Senior Business Manager EMEA, Perstorp Animal Nutrition.

Megavet was established in the beginning of 2015 in the UAE with the mission of supporting customers to increase their animal production with reduced use of antibiotics. Over the last years, Megavet has expanded to more countries in the region following a growing demand for solutions that can support gut health. "For Megavet, this is an important partnership that will strengthen Perstorp's and Megavet's position

as market leaders in gut health for the UAE and Oman thanks to our respected reputations, a specialized Animal Health team, and Perstorp's innovative product portfolio. We are very excited about this new agreement." Says Usama Khaled Managing Director of Megavet.

Ongoing investments at Perstorp's Animal Nutrition production unit in the Netherlands will increase production capacity to meet the increased demand and shifting customer requirements. "With this increased production capacity and a much-improved technical ability to produce innovative, added value solutions, I am confident that we can take great steps with our business partner Megavet to coverage our product portfolio" says Enrico Appiano, Sales Manager EMEA, Perstorp Animal Nutrition.

RESULTS OF THE THIRD JOINT COMMISSION IN THE FRAMEWORK OF THE FISHERIES AGREEMENT BETWEEN THE EUROPEAN UNION AND MOROCCO

The third Joint Commission of the Sustainable Fisheries Partnership Agreement (SFPA) between the European Union and the Kingdom of Morocco met on November 11 and 12, 2021.

The current Sustainable Fisheries Partnership Agreement and its implementation protocol, entered into force on July 18, 2019. This new agreement creates a strategic governance framework with Morocco, a key partner of the European Union within the framework of the neighborhood policy. It contributes to the preservation of maritime resources and to the economic and social development of the populations living in the areas affected by the agreement.

During this Joint Commission meeting, the parties reviewed the activity and use of fishing opportunities at the end of the second year of the protocol. The parties also examined the state of play of projects supported by European Union for the Moroccan strategy for the development of the fisheries sector.

In this context the European Union supports, in particular, aquaculture projects for the benefit of young entrepreneurs and fishermen's cooperatives, scientific campaigns to assess certain stocks, safety systems at sea, and improvement of conditions of work and protection of seafarers. These projects thus contribute to job creation, capacity building in the sector and the training and integration of women and young graduates into the job market.

The parties commended the quality of the work carried out for the monitoring of the use of the EU support and the progress

of the projects at the end of the second year of the protocol, in a difficult context, marked by the COVID 19 pandemic. In fact, more than 99% of the actions programmed for the second year of the protocol were carried out, for an amount of approximately 20 million euros, despite the constraints of the health crisis.

The Joint Commission also

examined the geographical and social distribution of the financial contribution in order to ensure that the agreement benefits the territories concerned, in proportion to the fishing activity of European vessels.

Finally, the parties examined the scientific aspects of the agreement, with a view to preserving fishery resources, and agreed to continue joint scientific work in this direction.

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Hall 8 Stand G015

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EVONIK PRESENTS SYSTEM SOLUTIONS FOR SUSTAINABLE AQUACULTURE IN CHINA

Evonik presented system solutions for sustainable aquaculture at the China Aquaculture Expo. Evonik's holistic offering includes products and services for animal health, animal nutrition, environment, and farm management.

"Fish and crustaceans are among the world's most important sources of high-quality animal protein," says Ou Song, Director Sustainable Aquaculture Solutions in Evonik's Animal Nutrition business line. "We want to help fish and shrimp farmers produce healthy animals- while preserving marine

biodiversity and protecting the immediate environment. To this end, we deliver comprehensive, coordinated solutions."

To keep fish and crustaceans healthy in aquaculture, the water quality must be right. In collaboration with the Chinese company Vland Biotech Group, Evonik has developed a probiotic product for aquaculture ponds that removes the nitrogen compounds ammonia, nitrate, and nitrite, which are dangerous to humans and animals, from the water. "AQUAVI® Pro-Pond improves the living conditions of fish and shrimp while reducing the environmental impact of too

frequent water changes," Song says.

The most important component of sustainable aquaculture is a balanced diet that requires as few natural resources as possible and minimizes the animals' excretions. MetAMINO® and AQUAVI® Met-Met from Evonik contribute to a fish or shrimp diet low in fish meal. AMINONIR® allows rapid, accurate analysis of feed raw materials. AMINOTilapia® and AMINOShrimp® help farmers to optimally adapt the amino acid composition of the feed to the respective developmental stage of the animals.

MOBA: INTRODUCING THE SINGLE TRAY LOADER

With the increasing importance of food safety came the need for a loader with a hygienic design with true top-line efficiency. That is why Moba introduced the FL loader, with the revolutionary "common speed loading" principle, years ago. And now, with the launch of the Single Tray Loader 125, this high-end feature is also available

for 6-row wide systems: a loader that gently places the content of a single tray onto the infeed with minimal impact on the eggs, with a capacity of up to 125 cases/hour.

The SL125 is placed in front of the egg grader as eggs from different farms and layer houses are gathered on trays at the grading station. Moving the eggs

from the trays onto the rollers is a critical process. If the eggs are not treated gentle enough, cracks can occur, which means a

loss of grade A eggs. That is why Moba has developed the "common speed loading" principle. How does it work? When placing the eggs on the infeed rollers, the loader synchronizes its speed with the infeed resulting in a gentle release of the eggs onto the rollers. This way of loading is unique in the egg industry and has proven to be the most gentle way to handle eggs while loading, which can result in tremendous improvements when compared to machines not using this principle.

After unloading the eggs, the empty trays go to the stuck egg detection sensor to check if any eggs are still left on the trays. If so, that specific tray is directed to the rejected tray buffer position. The remaining empty trays will be stacked vertically for further logistics processing.



Agri Green

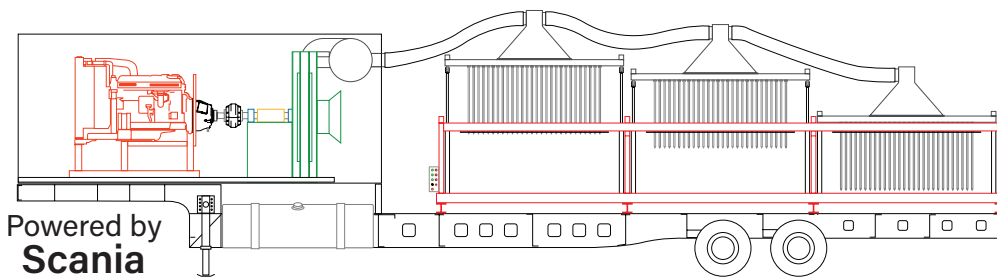
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Units have been sold in Poland, UK, South Africa, Canada and USA.



AG Maximizer Hay Dryer



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

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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VIV ASIA POSTPONED TO MARCH 8-10, 2023, IN CO-LOCATION WITH MEAT PRO ASIA

The organizers VNU Asia Pacific and VNU Europe have announced that VIV Asia is taking place on March 8-10, 2023, instead of January 2022. The IMPACT Challenger 1-3 Halls, in Bangkok, Thailand is the confirmed venue for the coming edition of this leading event. The co-location of VIV Asia with the first edition of Meat Pro Asia is also confirmed on March 8-10, 2023 by Meat Pro Asia organizers Messe Frankfurt (HK) Ltd. and VNU Asia Pacific.

VIV Asia is thus officially returning to the traditional March

cycle in the odd years, after Covid pandemic disruption. The organizers trust that this decision will bring a clear and final direction for all stakeholders' future business planning. VIV Asia is coming back as the #1 leading international event for the livestock, animal proteins, feed to food industry with global and regional players and industry professionals finally gathering in 2023 in the exciting city of Bangkok from the entire Asian continent. Exhibitors and visitors will also enjoy by then the

complete BTS Skytrain extension from city centre directly to the venue.

In addition Health & Nutrition Asia in co-location with VICTAM Asia are also rescheduled to new dates on September 7-9, 2022, instead of January 2022. The new venue is IMPACT Halls 9-10, in Bangkok, Thailand.

ILDEX organizers have to reschedule ILDEX Vietnam from its original date on March 2022 to August 3-5, 2022 at Saigon Exhibition & Convention Center (SECC) in Ho Chi Minh City.

BOEHRINGER INGELHEIM'S ASERVO® EQUIHALER® WINS A PHARMAPACK HEALTH PRODUCT AWARD IN THE ANIMAL HEALTH CATEGORY

Boehringer Ingelheim, a global leader in animal health, is proud to announce that its Aservo® EquiHaler® received a 2021 Pharmapack Health Product Award in the newly established Animal Health category. The Health Product Awards also include Patient-centric Design and Eco Design categories. In 2020, the



product received a Red Dot Award for outstanding product design. Aservo® EquiHaler® is an inhalant therapy licensed for use in horses with severe equine asthma.

Launched in 1997, the Pharmapack Awards celebrate the latest innovations in pharma packaging and drug delivery devices within the drugs, medical devices, health products and veterinary drugs sectors. The Awards recognize innovations that have improved drug efficacy, user safety or reduced the environmental impact. The Jury comprises independent pharmacists, physicians, and experts in patient-centric and sustainable packaging.

"This Award is a great acknowledgement of our overarching goal – to improve the life of animals and subsequently humans. I am pleased to see that this

innovative solution, a result of a close collaboration between our animal and human health businesses, got recognized by these prestigious awards," shares Eric Haaksma, Head of Global Innovation at Boehringer Ingelheim Animal Health.

"What makes our Aservo® EquiHaler® stand out is the ergonomic handle and dosing lever for ease of use handling and the nostril adaptor that fits gently inside the horse's nostril, allowing for easy inhalation of the medicated mist," explains Martin Folger, Principal Fellow Expert & Risk Management, Global Innovation, Boehringer Ingelheim. "We submitted this product because it is an industry first in equine medicine; until now, there was no approved inhalant therapy licensed for use in horses with severe equine asthma."

DEVENISH STRENGTHENS ITS INTERNATIONAL PRESENCE WITH KEY APPOINTMENT IN THE MIDDLE EAST AND NORTH AFRICA REGION

Devenish, a leading agri-technology company, is expanding its presence in the Middle East and North Africa (MENA) region, with the appointment of Whad Fayed to the new role of Poultry Nutrition Product Manager.

Headquartered in the UK, Devenish is recognised as a leading provider of environmental, animal, and human health solutions, and a key influencer in driving performance and welfare throughout the food chain in response to the growing consumer demand for safe, nutritious food.

Devenish already has a strong presence in the Middle East and North Africa, led by regional manager, Dr Fuad Saleh, and supported by area manager Nihat Ozturk.

Based in Egypt, Whad will be responsible for leading the development of poultry nutrition in the MENA region and driving sales throughout Turkey, Egypt and Saudi Arabia.

Speaking about the appointment, Ian Atterbury, Managing Director, Devenish International said: "The Middle East and North Africa is a key market with huge growth potential. Over the past five years, our business has gone from strength-to-strength in the region as we have built a solid customer base for our innovative nutritional solutions, and I'm very pleased to welcome Whad to the team."

"With a background in poultry disease and nutrition, an MBA in major international business and over twelve years' experience in feed additive sales in Egypt, Whad brings with him both a wealth of industry knowledge and expertise which will help to support our customers and strengthen our team in the region."

Whad Fayed, Poultry Nutrition Product Manager, said: "Devenish is

well respected across the Middle East and North Africa and has a proven-track record of delivering innovative research and providing the poultry industry with high quality, nutritional solutions. This is a great opportunity to be part of a growing international team and I'm looking forward to working with colleagues across the group to further grow the business in

the region."

Devenish International continues to expand its geographical reach with recent appointments including Russell Trainor, Area Manager for Australasia; Leanne Jordaan, Technical Advisor, Sub-Saharan Africa; and Amelia du Preez, Technical Advisor, Sub-Saharan Africa.

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VIV MEA 2021: THE STAGE IS SET FOR AN ENRICHED SHOW WITH A FOCUS ON MENA REGION

Great opportunities for visitors with business-oriented conferences and around 500 global exhibitors

VIV MEA 2021 final preparations are going ahead full throttle. The third edition of the Feed-to-Food international trade show is waiting to welcome all its stakeholders in Abu Dhabi from 23-25 November 2021. After the temporary interruption last year, the response from the industry is overwhelming to

finally meet each other in person and crack valuable business deals.

International Insights by Industry Experts

VIV together with its content Partners has planned a line-up of interesting trade-oriented conferences that makes the visitors' experience even more

valuable.

Associations and organizations such as FAVA (Federation of Asian Veterinary Association), EVA (Emirates Veterinary Association) MEAP, WATT Global Media, WPSA, Global Dairy Farmers, NABC, HubOrange, and Aquafeed International, are just some of the names that will deliver insightful sessions.



The conference organized by FAVA will throw light on 'One Health approach on Antimicrobial Stewardship (AMS) in livestock production by ensuring feed and food safety' and will cover multiple species such as cattle, camel, aquaculture and poultry. On the other hand, PMRT® (Poultry Marketing Round Table) will focus on uncertainties that have affected the poultry industry and the possible scenario of crisis management. While Aquatic MEA will bring in experts to talk about Aquafeed Extrusion and Aquafeed Nutrition for both fish and shrimp production, the Dairy Seminar will elaborate on topics such as TMR feeding, setting up farms in semi-arid regions, infectious diseases in the dairy sector and much more.

The visitors will have 3 days full of enriching content and networking.

"At VIV MEA, we strive to bring delegations and industry leaders from all over the world to share their global perspective on a variety of topics. In fact, we are looking forward to welcoming approximately 8000 visitors from around the world, and especially from the GCC," affirmed Renate Wiendels, Senior Project Manager, VIV worldwide.

Saudi Arabia to be the Country of Honour

VIV MEA is at the heart of MENA region. Staying true to this regional spectrum, this year Saudi Arabia will be recognized as the 'Country of Honour'. Under its Vision 2030, the country's Ministry of Environment Water and Agriculture (MEWA) is looking at increasing broiler production self-sufficiency to 85% by 2030. Interestingly, last year, Saudi Arabia produced 900k mt of chicken, which is roughly 60% of domestic consumption and is aiming at nearly 1.55m mt a year. The Ministry is undertaking various initiatives to achieve broiler production self-sufficiency – it is offering direct production-based subsidies to local chicken meat producers, encouraging foreign companies to invest in the Saudi market with a focus on poultry and offering 100% ownership to local producers among others. MEWA also aims to increase the production volume of aquaculture farms to 600K tons by 2030 (65% of the market).

While Saudi Arabia is VIV MEA Country of Honour for this 2021 edition, the show organizers are looking forward to welcoming all professional visitors from the GCC countries as well as from



Africa and the rest of Asia to mark their presence for VIV MEA 2021 in Abu Dhabi.

Positive news for safe travel

Abu Dhabi has finally opened its borders for international travelers. All the vaccinated people can now visit the city without having the need to quarantine themselves after undertaking the necessary PCR tests. Travelers can register themselves on AlHosn, the UAE's official app for contact tracing and health status related to COVID-19. Even though the green status on this app will become your free travel pass to go anywhere in the city, entry to ADNEC is allowed only for vaccinated individuals.

For more information, visit www.vivmea.nl



HOW DO YOU CHOOSE YOUR MANURE PROCESSING EQUIPMENT

1. Growing demand for organic fertilizer

The global organic fertilizer market is growing at a high rate in terms of volume, and the market continues to grow due to factors such as the expansion of organic farming, growing interest in environmental issues worldwide and the growing demand for organic products in Europe and North America. One of the most common material of organic fertilizer is composted animal manure.

2. What is “composted manure”?

Manure of animals such as chicken or cow can be a source of high-quality organic fertilizer if it's composted properly. Composting is a biological process

of biodegradable waste being decomposed by microorganisms under aerobic conditions, and the main keys for good composting process are correct humidity, temperature, and oxygen supply. There is a common misconception that all manure processing in open facility has strong bad smell regardless the procedure, however in most cases it's because the process is going anaerobic.

3. Importance of mature compost

If livestock waste is not processed properly, it can cause environmental problems such as groundwater contamination, emission of bad odor and a huge outbreak of flies. In addition, immature compost may contain

pathogens that damage plants, and spread harmful bacteria such as salmonella and E. coli. Therefore, it is important that compost be completely mature before it's applied to soil as fertilizer. In fact, properly composted manure in aerobic process does not smell badly, but it should have some smoky odor. It is important to know that it's possible to avoid anaerobic compost and bad odor by treating the manure properly.

4. Kohshin's composting system

Kohshin Engineering provides poultry equipment worldwide including fully automatic composting machine which turns different type of biodegradable

waste (such as; livestock waste, poultry manure, food waste etc.) into high-quality composted organic fertilizer. Kohshin has been focusing on the quality of final product instead of just processing the manure, regardless the type of material to be processed. During the process appropriate amount of air is supplied to the material automatically using timers so the suitable composting environment will be maintained and the temperature of material can rise up to 65-80°C.

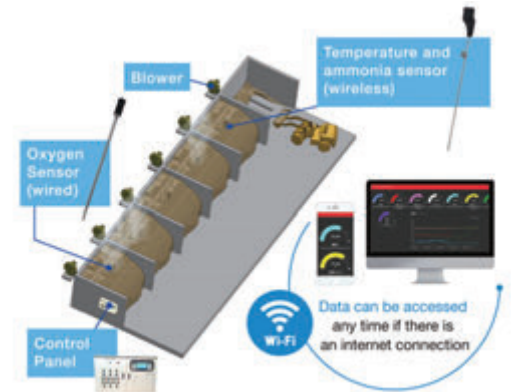
5. Features of Kohshin composting machine

When a farm owner chooses a composting system, the cost is an important factor as much as the quality and the functions of equipment. Kohshin takes importance on the durability of machine and provides durable composters that can be used for 10-20 years with proper maintenance. By using Sumitomo’s cyclone motor instead of a general gear motor, the speed reducer runs

smoothly and prevents damage caused by impact on the machine. Also, by galvanizing the main parts thru hot dipped in zinc alloy, the machine lasts longer. In addition, our machine is designed to produce a pelletized final product, which means there is no need to purchase an additional pelletizing machine. In terms of running cost of operation our machine can be beneficial as well, since the electricity cost of the monthly operation is about 20 to 30 times less than that of tank system.

6. New technologies to prove the safety of composted manure

One of the required factors is oxygen to sustain good environment for composting process. Kohshin has been collecting data on the relationship between temperature and air volume in consideration of improving the efficiency of composting livestock manure using our specialized sensors, and based on those data we have



developed IoT system to grasp the optimum amount of air volume to raise the temperature of material in a short time. By introducing this system farmers can keep track of the data and make sure that the composted product is safe to apply to the plants. In addition, the electricity bill can be reduced significantly while supplying optimum amount of air as per system required instead of sending air continuously for hours every day.

7. Managing process at a low operation cost

Through the process of developing own Aeration System, Kohshin has established Pre-Composting System which enables higher efficiency of compost at a lower cost. This Pre-composting system not only increases the quality of final product, but it also reduces the machine load as well as the investment on the composting machine since the material volume and humidity can be reduced by supplying the minimum necessary air. We have provided this Pre-composting System in many countries and the users are successfully producing high quality organic fertilizer and reducing the cost on manure processing.

For more information, visit www.kohshin-s.jp



THE HEALTH OF HENS IS OF CENTRAL IMPORTANCE FOR A HIGH LAYING PERFORMANCE AND A STRONG EGGSHELL

The liver plays an important role in this, as it performs a variety of vital functions. All nutrients are transported via the blood from the digestive tract to the liver, where they are stored, transformed or transported further.

Fatty liver syndrome (FLS) is one of the most common metabolic disorders in laying hens. This non-contagious disease is characterized by excessive fat accumulation in the liver, subsequent liver rupture, haemorrhage, and sudden death in commercial laying hens. Poultry can develop fatty liver at two stages of the laying cycle. First, during peak production periods, young laying hens are not always able to increase their feed intake to meet their energy needs for egg laying. Second, reduced egg production at the end of the laying cycle results in lower energy requirements. This leads to the conversion of carbohydrates to fatty acids in the liver. Other factors affecting the development of FLS include lipotropic deficiency, mycotoxins, inflammatory diseases, stress and choline deficiency.

Livervital optimally supports lipid metabolism and helps reduce fatty liver formation. The ingredients used in Livervital have been carefully selected for their positive effect on liver protection and fat metabolism. Choline chloride promotes the

removal of fats from the liver, as well as the formation of lipoproteins. The B vitamins in Livervital act as coenzymes for basic body functions, with the main functions being in carbohydrate, fat and amino acid metabolism. Methionine inhibits the accumulation of lipids in the liver and is important for repair and rebuilding processes. Vitamin E is needed for cell metabolism and acts as an antioxidant. Betaine, along with methionine, protects against fatty liver and may improve overall animal performance. L-carnitine helps kidneys and liver detoxify,

remove harmful substances and provides energy. Milk thistle helps regenerate liver cells and prevent toxin invasion. Bile flow and pancreas function are promoted by artichoke extract. In this way, toxic substances can be eliminated.

In conclusion the liver plays a crucial role in the overall health of the animals and therefore in the laying performance. Livervital can reduce the risk of fatty liver by promoting fat metabolism and supporting liver functions.

For more information, visit www.miavit.com



THE EFFECTS OF ESSENTIAL OILS ON COCCIDIA

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

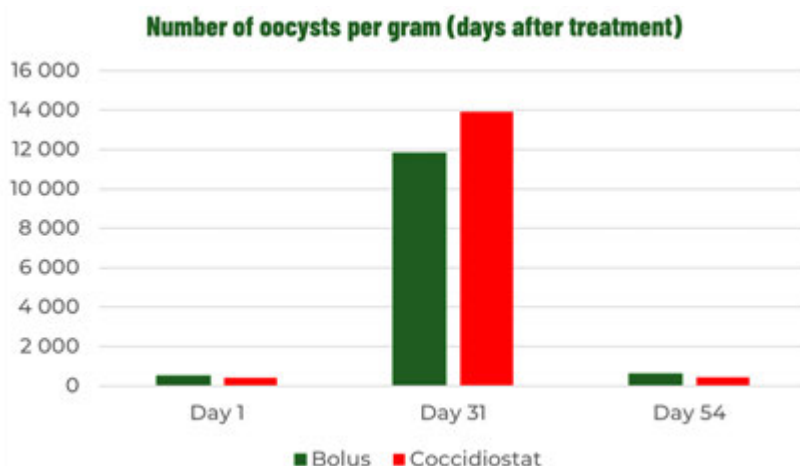


boluses. Coxicryptop contains (amongst others) essential oils from clove, cinnamon, and eucalyptus and extracts from garlic.

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



THE EXPERT'S CHOICE IN MINERAL NUTRITION

MINTREX® is the only worldwide commercially available bis-chelate on the market for use in animal feed that contains HMTBa as the ligand, providing additional benefit. MINTREX® is the most bioavailable trace mineral option, meaning it delivers the most product to the site of absorption. This allows for those lower inclusion levels to be met without sacrificing performance of the animal.

The simplest way to explain the differences is by understanding the bonds surrounding the mineral: in the case of inorganic trace minerals (ITMs), it is an

ionic bond that creates the mineral salt through opposite charge attraction. In an organic trace mineral (OTM), a much stronger covalent bond is what binds the mineral to a ligand, improving its bond strength through electron sharing. But even within OTMs, it is important to understand that there are significant differences. What sets MINTREX® apart is two things: 1) the mineral is chelated, meaning there are four coordinate covalent bonds surrounding each mineral; 2) the ligand is HMTBa, which provides benefits in and of itself once it separates from

the mineral in the small intestine and is absorbed. The neutral charge achieved with the structure of the MINTREX® molecule makes it less reactive to antagonisms ensuring that the mineral reaches the site of absorption.

Due to its properties, MINTREX® bis-chelate provides more bioavailable zinc, copper or manganese for superior animal performance: reproduction, tissue integrity, immunity, meat quality and environmental footprint.

For further information, contact info.europe@novusint.com



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NATURAL BETAININE – A NUTRITIONAL AID IN POULTRY PRODUCTION

The growing global livestock production is moving away from antibiotic growth promoters and coccidiostats, means that the industry will therefore face new challenges impacting gut health. As a consequence, gut health management has become a key focus in the livestock production, especially under heat stress conditions.

Beside nutrition, biosecurity, cooling systems, ventilation, bedding materials, water quality and availability, stocking density are playing of course a deciding role.

The role of betaine and its physiological functions

Over the last years, the use of betaine in animal feed diets has moved from selective utilization, to that of a core ingredient in key feed formulations for poultry and even ruminants. The increased use of betaine in animal diets has been driven by producer demands, to counter performance challenges under heat stress conditions especially in poultry as a methionine and choline sparing tool. But the truth is, that betaine is more than a methionine and choline sparing tool. The benefits are

the result of betaine's role in two main physiological functions: its osmolyte property and acting as a methyl group donor.

Both functions of betaine play a key role, particularly when animals are under challenging conditions, which include dietary changes, heat stress, temperature stress (fluctuation between the day and night temperatures) and pathogenic challenges, mainly coccidiosis often with wet litter as a consequence. This in turn can lead to further severe complications like respiratory disease, or pododermatitis. The fact is, that the higher

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the challenges, the higher the demand is on methyl groups. In such conditions, the mineral and water balance might be disturbed and the cell wall integrity potentially damaged.

Energy is one of the major dietary cost factors in poultry production and osmoregulatory responses are highly energy consuming processes. Betaine, being involved in the energy metabolism, can reduce the energy required for the osmoregulation. Under normal conditions, the energy saved can be used for increased performance and improved carcass quality. Whilst in challenged conditions, it can reduce digestive disorders and lower mortality, thereby better production efficiency.

Additionally, has further potential benefits like lowering carcass fat content and increasing breast meat yield, has a significant role in hepatic protection and it is a source of glycine, relevant in low protein diets-nitrogen reduced feeding.

As a multi-functional nutrient, betaine is a trusted nutritional aid in managing gut health under thermoneutral or hot climatic conditions and for optimizing the feed efficiency in poultry production. In challenging conditions, there is no single product able to serve as the optimum solution.

ActiBeet®- natural betaine can be part of every nutritional solution as a non- aggressive, non-corrosive and heat stable component for premix and feed production.

ActiBeet® natural source of betaine

In 2015 AGRANA introduced in the animal feed sector a liquid natural betaine product under the brand name Actibeet® L. With the new crystallization facility, AGRANA is expanding its product portfolio by natural crystalline betaine: ActiBeet® 96 and ActiBeet® 97 for application in feed and drinking water.

Natural Betaine is obtained from partially desugarized (sugar) beet molasses via a chromatographic separation process based on

cutting-edge technology provided by our joint venture partner - The Amalgamated Sugar Company, based in the US. The process enables the separation of the molasses into different fractions, one of which is a natural, betaine rich fraction. This fraction will be further promoted towards crystallization.

The new betaine crystallization plant, under the name BetaPura GmbH is located next to the beet sugar factory in Tulln in Austria and was completed successfully last year, despite of the pandemic difficulties. With the new crystallization facility in Austria, AGRANA is expanding its product portfolio with natural crystalline betaine products.

In addition to betaine for the feed and fertilizer sector, Beta Pura GmbH also produces betaine for the food and personal care sector. Due to high product value and the ongoing trend of consumer preference for natural products and strictly tested quality, make ActiBeet® the smart betaine choice and suitable for the global market.

For more information, contact betaine@agrana.com





BASF AND TRINAMIX INTRODUCE MOBILE NIR SPECTROSCOPY SOLUTION TO THE FEED INDUSTRY

BASF Animal Nutrition and trinamiX GmbH, a wholly owned subsidiary of BASF SE, join forces to introduce trinamiX' Mobile Near Infrared (NIR) Spectroscopy Solution to the feed industry. The portable NIR solution provides customers across the entire value chain with a fast and reliable on-site analysis of animal feed and ingredients.

By significantly miniaturizing conventional NIR spectroscopy, trinamiX has successfully paved the way for a high-performance

'lab in the pocket'. Together with BASF, the company is now using their solution to accelerate and simplify feed analysis. The collaboration brings together BASF's animal nutrition knowledge and trinamiX' expertise in mobile NIR spectroscopy. The result is a powerful, cloud-based combination of a handheld device, smartphone app, and customer portal which enables customers to receive relevant insights into the quality and nutritional value of samples

at the push of a button. The solution thus enhances feed formulation and quality control. Through this partnership, BASF Animal Nutrition is expanding its digital solutions portfolio, thereby providing customers with solutions that go beyond feed additives to address the industry's most complex challenges.

"Gaining transparency on the nutrient composition of feed is key when addressing livestock requirements. Differing needs across life and health stages as



well as changing raw materials require constant dietary adjustments. Using our mobile NIR solution, feed millers, nutritionists, and farmers get a fast and independent solution to guarantee the quality of animal diets," says Manuel Rez, Director Product Management Performance Ingredients & Marketing at BASF Animal Nutrition.

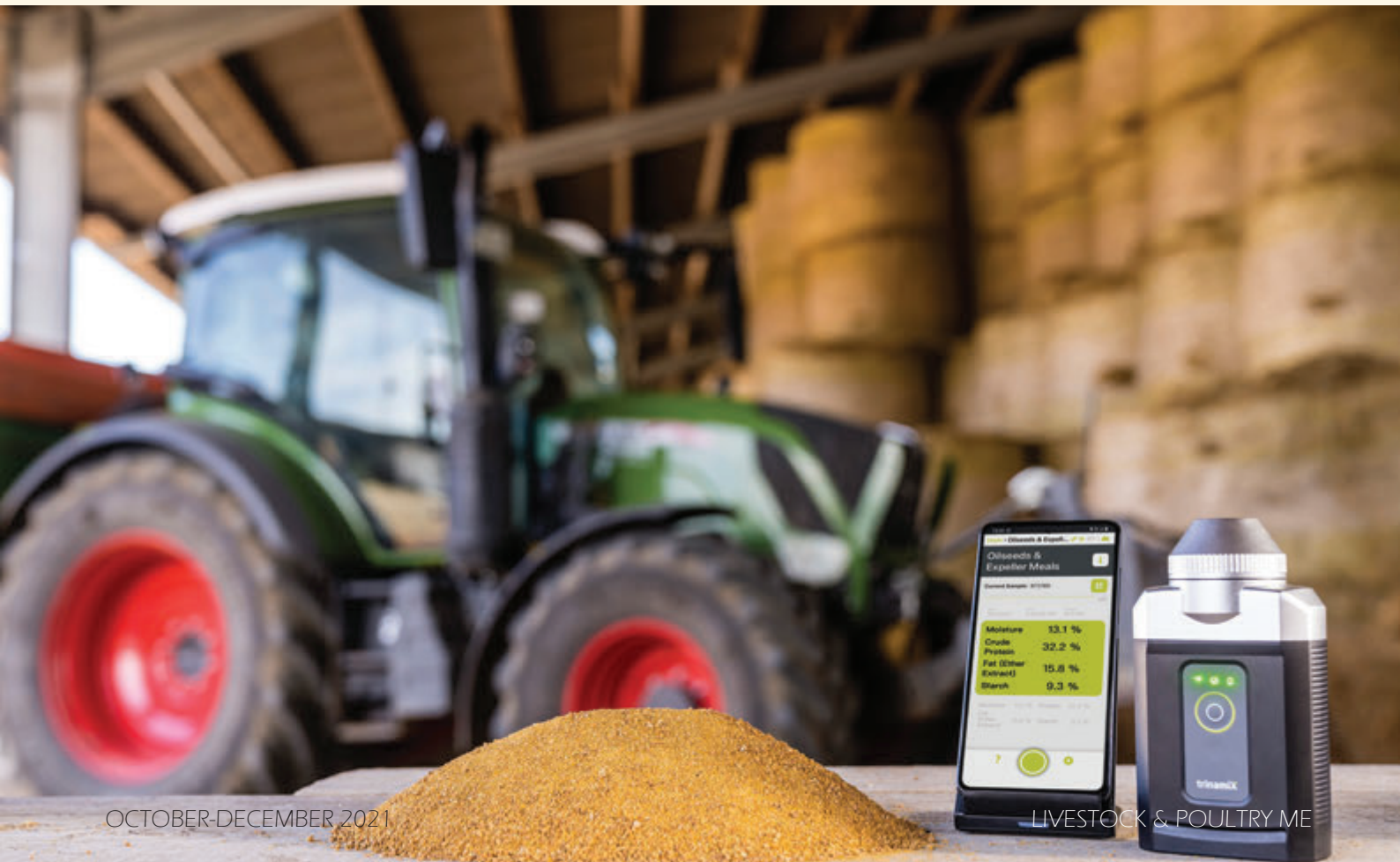
The new NIR solution covers a broad variety of samples, ranging from feed ingredients to finished feed to forage. It supports parameters that are crucial to feed quality and the wellbeing of livestock, including moisture, protein, fat, and energy.

"By combining accurate results with the flexibility of a portable device which fits into your pocket, we are paving the way for an efficient and reliable approach to feeding,"

explains Nils Mohmeyer, Head of Business Development and Sales at trinamiX. Measuring a sample takes less than a minute and can be performed on the spot. The results are instantly displayed in the smartphone app and are permanently accessible via trinamiX' web-based customer portal for further evaluation. "Our customers no longer need to send samples to the laboratory. Instead, the laboratory comes to them," Mohmeyer adds.

Going forward, BASF and trinamiX will continue to collaborate on further enhancing the solution. Continuous updates via cloud ensure that upcoming applications and features are always available to customers without replacing the hardware.

For more information, visit www.basf.com





CREATE THE PUZZLE WITH “YEMMAK BRICKS”!

With “Yemmak Bricks” construction solutions, it is very easy to set up a containerised mill!

You can establish a factory at low costs with containerised mills, where the assembly time is

much shorter than standard feed mills. While your assembly time is shortened by 50%, the project design time is also minimized in direct proportion. Due to the fact that it is in standard blocks, the project design time is much shorter than in traditional mills.

Poultry and cattle feed mills can be established with “Yemmak Bricks” construction solutions up to 20 tons/hour capacity.

In addition to saving personnel and service costs, lower building costs are provided.

Since the container cages are assembled in layers, there is no need to make floors inside the building.

Modular Business Solutions with Puzzle Construction

New units can be added to units in standard cages.

All equipment has been assembled and tested. The machines are fixed where they should be and their assembly is completed by testing. Thus, possible installation errors are prevented and extra protection is provided against accidents during shipment or assembly. The equipment inside the frame is also taken under additional protection against possible accidents and damages.

For more information, visit www.yemmak.com





Abu Dhabi Agriculture & Food Security Week

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Meet our global exhibitors looking for new partnerships, customers and business opportunities, bringing innovations into the MENA Market.

To register your interest in attending please visit www.adafsw.com



GROWING YEAST TO ANIMAL FEED FROM TREES

Yeast made from Norwegian spruce trees is a high-quality feed ingredient that can replace imported protein. A fruitful collaboration between industry and research has for the first time successfully achieved a large-scale production of yeast from local, sustainable resources.

An important milestone has been reached by the partners in the centre for research-based innovation, Foods of Norway: a successful industrial scale-up of 1,600 kg of yeast produced from sugars from Norwegian spruce trees. Production was a joint effort by Lallemand Animal Nutrition, Borregaard and the Norwegian University of Life Sciences (NMBU), all partners in Foods of Norway at NMBU.

Sugar from Norwegian spruce trees was produced by biorefinery company Borregaard, and this was used to grow the yeast at the Lallemand production site in Estonia. The processes could be scaled up thanks to the extensive work done by scientists at NMBU

and Lallemand, coordinated by Foods of Norway.

From lab to industrial production

"We are entering an exciting phase where we will be evaluating yeast in diets for salmon in seawater under farm conditions", says Professor Margareth Øverland, the head of Foods of Norway.

"Our work in Foods of Norway follows the entire value chain from the tree biomass to the final meat and fish products. The larger-scale trials will provide important information on how these novel feeds will affect the growth, health and product quality of the animals as well as the production cost and sustainability of using these ingredients", she says.

Professor Svein Jarle Horn, who heads the Foods of Norway team responsible for yeast fermentation research at NMBU, says: "It is very exciting and unique that laboratory results can be directly applied and scaled up by the industry.

The research and development performed in Foods of Norway has clearly shown how biotechnology can be used to develop novel sustainable feed ingredients".

Demonstrates potential

"We are proud of this important milestone on our journey towards the development of alternative feed ingredients using local Norwegian resources. There is still a lot to be done before commercial development can be realised, but this achievement reinforces the technical feasibility of the concept developed through Foods of Norway towards a more sustainable feed production," says Mathieu Castex, Director of Research and Development at Lallemand Animal Nutrition.

Gudbrand Rødsrud, Technology Director at Borregaard, agrees: "This large-scale production experiment demonstrates the opportunities that exist for developing sustainable feed products from wood and it will enable documentation of business potentials through large scale feeding trials."

Dr. Ildar Nisamedtinov is vice president of research and development at Lallemand. He says: "Our partners at NMBU have previously carried out thorough studies when it comes to using Borregaard's spruce syrup in the cultivation of different yeast species. That knowledge was a good starting point for us to further design and optimize the process that could be industrially utilised. In my opinion, this is an excellent example of how collaboration between academia and industry can lead to new products."

For more information, visit www.borregaard.com

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?

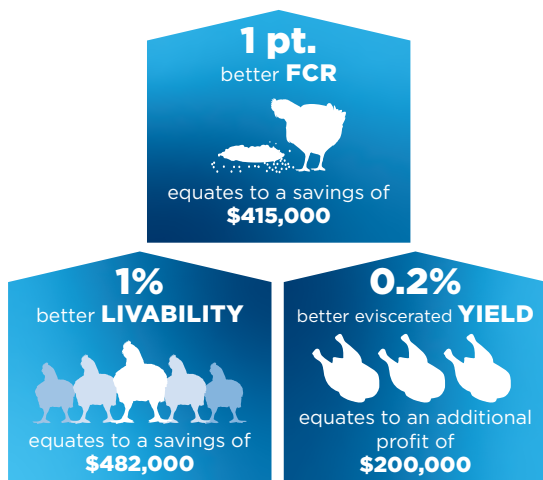
The Ross® 308 satisfies the demands of customers who require a bird that performs consistently well and has the versatility, robustness and cardiovascular strength to meet a broad range of end-product requirements and environments. The Ross 308 is the leading broiler worldwide, with its unparalleled 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?

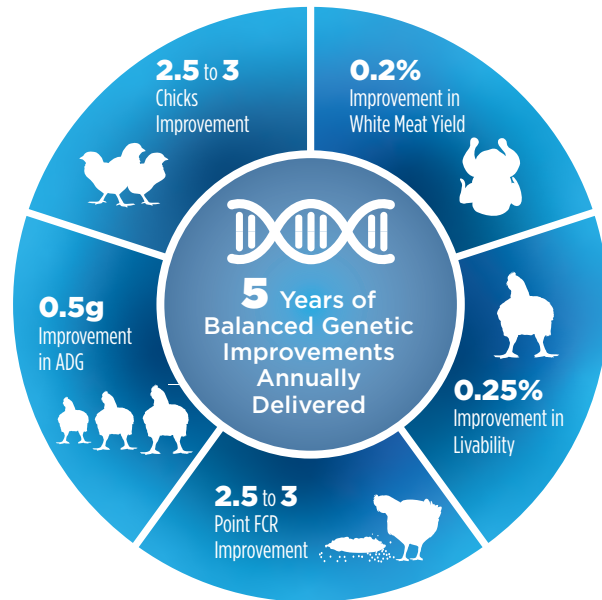
Across the SSA region, the Ross 308 has advantages in both breeder and broiler performance. For example, the Ross 308 breeder is performing exceptionally well, steady gains in hatching egg (HE) output, and hatchability have delivered on average an additional **15–20 chicks** over the competitor and in 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

DOMINANT CZ CLASSIC LAYERS AND DUAL PURPOSE POULTRY FOR GLOBAL MARKETS

This family owned private company from Czech Republic specialises in breeding and selection of laying and dual purpose poultry. For more than 30 years DOMINANT CZ's original genetic programmes dynamically expand finding new partners in 60 countries on 4 continents. With modernisation of existing facilities and construction of new, there is a continuous increase in breeding capacity as well as research and

development.

DOMINANT CZ classic layers and dual purpose poultry with modern approach to selection are perfectly suited to specific local breeding programmes including Baladi, Sonali, Inasal, Kampong, Hmong very successful throughout Asia and Heritage marketing across Europe and USA. After profitable egg production hens are processed, their high yielding quality carcass adds value to breeding programmes. Excellent flexibility and adaptability to a

variety of production conditions creates profitable alternatives for independent hatcheries producing day old chicks for sustainable meat and egg production as well as supporting local small scale family farms especially in developing economies.

Dominant CZ also offer special programmes for production of premium high value table eggs of mixed colours including white, brown, dark brown, cream, green and blue. These artisan eggs reach new business partners and





offer excellent opportunities to producers to create new markets with a viable value added alternative to standard brown and white egg production.

Dominant CZ also offer

modern commercial hybrid laying programmes synthesised from traditional attractive breeds, perfectly suited to rural, free range, ecological and extensive production conditions. The advantages are robust and flexible layers with distinctive appearance. These colourful hybrids also offer fantastic opportunities to poultry breeders, hatcheries and egg producers by supplying non-standard commercial hens, chicks or eggs, where robust highly adaptable chickens are needed.

DOMINANT CZ is dedicated to supplying niche markets and has unrivalled flexibility to meet the needs of customers, supplying sex-linked hybrid programmes to suit every farming method anywhere in the world. Poultry with calm temperament, excellent plumage and high adaptability for free-range breeding and production including home milled and organic feed rations, maximum number of fertile eggs producing strong chicks are key points to maximize farmer's profits, making Dominant CZ genetics popular in so many countries. Technical support and practical assistance for profitable

breeding and egg production as well as fattening cockerels is always available to help your business thrive.

Dominant CZ has a breeding programme to suit your needs and is actively seeking partners and representatives to continue expanding breeding programmes into new countries. Visit the website for much more information about the company and breeding programmes available, or contact us to discuss your requirements.

www.dominant-cz.cz

RNDr. Milan Tyllér -
owner and geneticist

Tel. + WhatsApp:
+420 602 642 557

Email:
tyller@dominant-cz.cz





COMPLETE SOLUTIONS FOR POULTRY PRODUCTION

Jansen Poultry Equipment have various solutions for the production of hatching eggs, poultry meat and consumption eggs. Innovative solutions, designed by specialized poultry managers and engineers, that meet the needs of today's breeder, broiler and laying hen.

Maximum number of clean hatching and consumption eggs

Maximizing breeder and layer production depends on several factors. One of these factors is the right equipment. Our Premium+ laying nest is for more than 30 years the best-selling nest worldwide and is a key factor in achieving the best production results.



Its high nest acceptance, minimal amount of floor eggs and use of high quality materials are reasons why many farmers world-wide favour the Premium+ laying nest.

The nest is designed to stimulate natural behaviour of the hens and to provide a comfortable and hygienic environment to lay eggs.

Carefull egg handling

First class produced consumer eggs are carefully transported during egg handling.

To bring the eggs from the nest to the egg collection room in a safe and reliable way Jansen Poultry Equipment has developed the FlexBelt and Jansen introduced the MultiFlex Elevator to transfer eggs from multiple tiers to a cross conveyor or egg packing room.

The key to maximize broiler production

The BroMaxx colony system is a revolutionary system which maximizes the broiler production in a healthy and



clean environment. Manure falls through the specially designed FlexFloor slats onto the integrated manure belt. Regular removal of the manure improves the health of the broilers and reduces the use of antibiotics to an absolute minimum. The patented anti-spill feed pan contributes to an optimal Feed Conversion

Rate and uniform broiler flock with premium meat quality. The BroMaxx broiler colony system is designed for high bird density. Its smart harvesting methods result in significant labour savings and a higher return on investments.

For more information, visit www.jpe.org





POULTRY PRODUCTION: ALL YOU NEED TO KNOW

What does the production process of broilers look like?

The production process of broilers starts with the breeding organisations, they breed and develop different broiler breeds. The breeding organisations supply one-day-old chicks to the rearing companies, who raise these chicks to adult parent stock, which are transported to the breeder farms. The breeders produce hatching eggs for the hatcheries, which hatch them to produce chicks for the broiler farms.

The modern broiler farms produce chicks ready for slaughter in 5.5 to 6 weeks. These are slaughtered by the slaughterhouse and further processed into chicken products, which are bought by the consumer in the supermarket. In the case of slow-growing broilers, which are used for special market segments, the daily growth is lower and it takes up to 9 weeks before the chicks are ready for slaughter.

In traditional production systems, the chicks are hatched in a hatchery and are then transported to the broiler farms. In addition, new techniques are available where pre-incubated eggs are transported to the broiler farm instead of day-old chicks, so the eggs hatch on the broiler farm. For this purpose, systems like the Patio, a multi-tier housing system, and the X-Treck for a floor house/ deep litter house have been developed. With these systems, the hatching eggs are placed in the house during the last 3 days of the incubation process, which is called 'on-farm hatching'.

How do you start with broilers?

How to set up a broiler production column depends on the intended production volume and the local market conditions and needs. If the focus is on the fresh market, you will need to set up the column differently from when you want to produce

frozen chickens.

When setting up a new production column, the starting point is the number of chicks per carcass weight that need to be slaughtered each week. This determines the capacity of the slaughterhouse and from there you can calculate the number of locations, the number of houses per location and the number of broilers per house. On this, the hatchery capacity, the required hatching egg production and the broiler breeder facilities need to be based. There are calculation models available for this, which can be calculated together with investors.

The next step is to furnish these facilities with the right barn equipment, taking a critical look at the latest welfare requirements and the required level of automation. The specialists of Vencomatic Group can be of service here.

In the full production chain of broilers, there are many things to optimize: mainly climate, then water

and then feed. Of course, the input material, genetics, barn design, occupation and animal health also play an important role, all variables should be well coordinated.

What production systems are available for broilers?

Worldwide, broilers are mainly kept in floor houses on straw litter, in some regions in cages on slatted floors. The Patio from Vencomatic is in fact floor housing in the form of a multi-tier system.

There are three systems to hatch chicks:

- Traditional: Hatching eggs stay in the incubator for 18 days, after that the fertilized incubated eggs go to the hatcher. After day 21, the chicks are collected and sorted, after which they are transported to the broiler house.
- Hatcheries can also provide water and feed to the newborn chicks in the hatchery, which allows the chicks to develop better. Further processing of the chicks is done in the traditional way.
- On-farm hatching (like in our X-Treck and Patio): after 18 days of incubating, the eggs are transported to the house and the chicks hatch in the house, they get water and feed directly and do not need to be transported from the hatchery to the house.

What does it cost to produce broilers?

The most important costs for

the production of broilers are the feed costs, which amount to approximately 60% of the total cost price. In addition, local laws and regulations, bird density, daily labour costs, housing costs, water consumption, medicine and vaccination costs, catching and loading costs and slaughter costs ultimately determine the total cost price of the meat.

How long does a broiler production cycle last?

A production cycle for broilers takes 7 weeks on average. In these 7 weeks, the chickens hatch in the house and grow to their final weight in 5.5-6 weeks. After that, the house is cleaned and disinfected and prepared to receive new eggs. With this 7-week production cycle, 7.4 rounds/flocks can be produced per year.

With slow growing chicks, the production cycle is about 1 to 2 weeks longer depending on the maximum daily growth of the broilers, so a total of 9 weeks instead of 7 weeks. In this case, 5.8 rounds/flocks can be performed per year.

Why is broiler farming interesting?

Poultry meat is the most widely eaten meat in the world and provides a large part of the world population with high quality animal protein. The world's population is growing and the consumption of

meat per person is still increasing. The demand for chicken meat will therefore only continue to increase for the foreseeable future.

We are still seeing an annual increase in the consumption of meat worldwide, with the demand for chicken meat growing faster than other types. Chicken meat is cheap and therefore first in line for the population of developing countries, such as China and India. In addition, chicken is popular because its consumption is not forbidden by major religions and chicken meat fits well into a healthy diet. In Western Europe, the growth is not as large; more and more people are eating vegetarian food. This is compensated at a global level by the ever-increasing population of developing countries.

In their sector reports, banks also confirm that more and more investments are being made in broiler production. Broiler production is also cheaper and you can give the meat any flavour, so it has many uses in dishes.

Should you buy day-old chicks or produce them yourself?

Just growing broilers requires less knowledge than producing hatching eggs. The required investment capital is also lower, but the return on investment depends on the quality of the hatching eggs purchased.

The question is also: do you start growing broilers after the purchase of day-old chicks, or with the production of hatching eggs and thus day-old chicks. If companies want to set up a professional production chain, these issues must be carefully considered.

For more information, visit www.vencomaticgroup.com



FLEXIBILITY IN BELGIAN MEAT EXPORT: “IT’S ALL ABOUT PROFESSIONALISM”



What makes Belgian suppliers stand out?

“It takes a certain attitude to export to countries all over the world.” That attitude is just one of the elements that make the Belgian meat suppliers stand out. One of our suppliers explains their approach, all aiming for the same result: “... everywhere can enjoy a delicious piece of meat with confidence.”

Tailor-made

Belgium’s efficient and modern meat processing industry is particularly known for its flexibility. At the same time, your needs are unique. That’s why the Belgian meat suppliers want to cooperate closely with you to work out the tailor-made solution you need. Generations of perfectionists seek to bring safe, high quality

meat to your market.

Experts in every link of the chain

From the production of feed to veterinary services to the slaughterhouses and cutting plants—each next link in the chain is as important as the previous. That’s why in every part of the process, you’ll find professionals who are expert in their field, and who are passionate about their job.

Minimum risk for maximum food safety and quality

In Belgium, we take food quality and safety very seriously. That’s why we subject our process to extensive internal and external audits, carried out by independent bodies. In this way, we can carefully assess any possible risk and take action when necessary.

Belgian white blue: remarkably developed muscle mass

The dominance of the Belgian white blue is unique in Europe. The production of beef is greatly specialised and there is barely any link to the dairy industry. Thus over 70% of the cows slaughtered are class S or E with regard to conformation. The greater majority of the animals are fattened to a warm carcass weight of 450 to 600 kg (for cows and bulls respectively). The absence of fat leads to a very high muscle mass.

For more information, visit www.artofmeat.eu

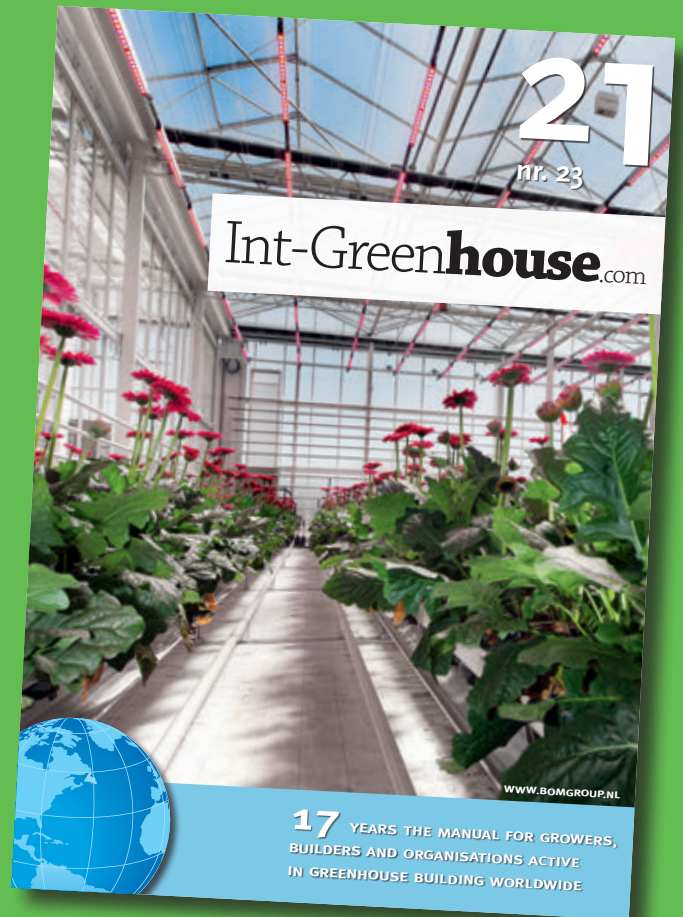
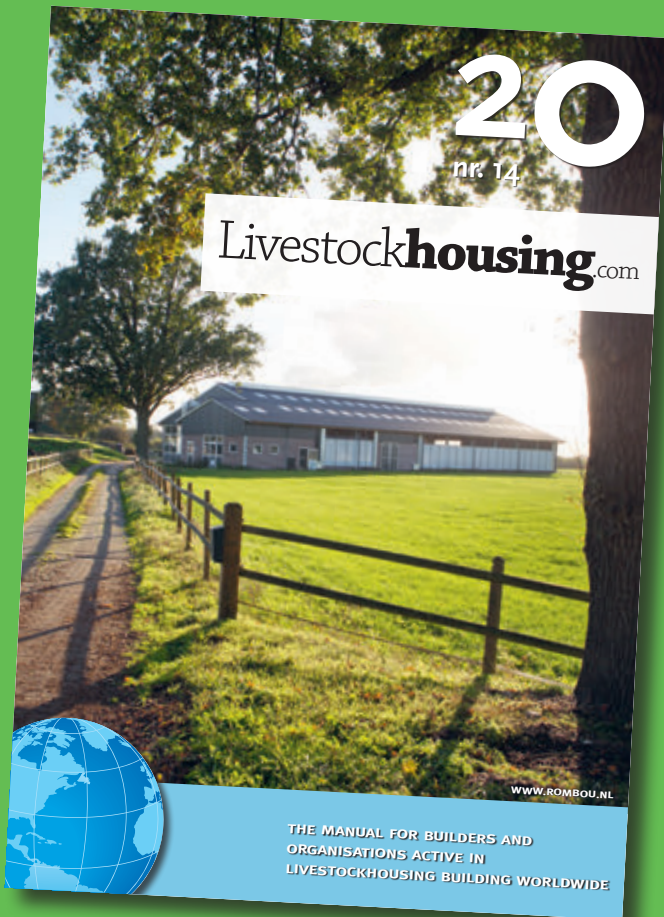


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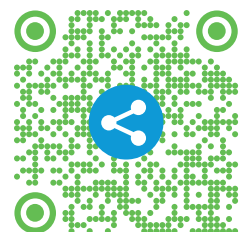
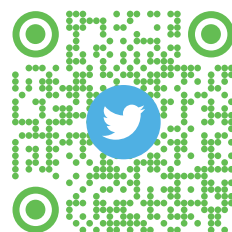
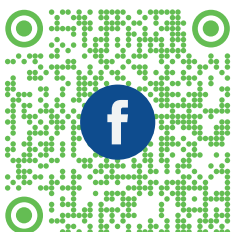
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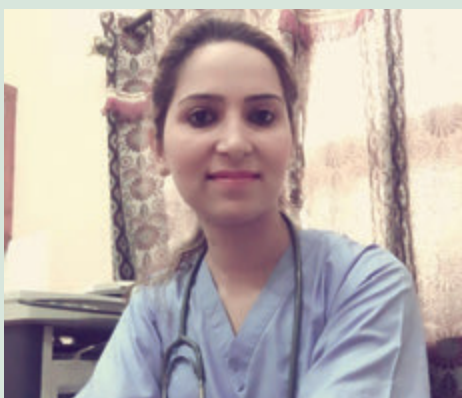
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HEALTH EFFECTS ON REPRODUCTION IN DAIRY CATTLE



Written By:

Dr. Ammara Fiaz, DVM, MPhil
Veterinary Surgeon at Charis Vets

Milk production is an essential agricultural produce in almost all the countries in the world. Up to a billion people in the world live on farms and make a livelihood through dairy and dairy produce. It is an indispensable part of the global food system and plays a significant role in sustaining development in rural areas. It is a well-known fact that the dairy industry is actively contributing to the economy of a number of communities, regions and countries. There is a growing demand around the world for globalizing this industry there by increasing scope and intensity of world trade in dairy products. Global Investment must be considered in to the latest breeding and management techniques of

dairy animals so that a sustainable form of economic gain can be achieved. Therefore, in the Middle East, an increased avenue of investments in this sector will ensure food security and viable economic gain.

The objective of health management is to ensure optimal care and welfare of dairy cattle to in turn check productivity losses due to mismanagement. Only healthy dairy animals lead to healthy dairy products, which in turn leads to good economic gains.

Basics of Reproduction in Cattle:

The period of oestrous cycling occurs every 21 days in a cow after the period of postpartum anaestrous and for heifers that reach puberty (first ovulation). This means that these estrus cycles give a heifer or cow a chance to get pregnant about every 21 days. There are various best management practices that can be followed in order to ensure that this cycle is taken most advantage of in producing optimum results in dairy production.

Body Conditioning Score is one of the most essential ways of continually monitoring Optimal health and productivity in dairy cattle. This system of scoring (BCS) is directly related to livestock reproduction. If BCS is low or



poor, the dairy animal will not attain its peak productivity. BCS is also an indicator of the amount of energy stored in the dairy animal. Optimum BCS, ensures that energy levels are maintained well enough in the animal to ensure good productivity.

The high-energy transition period for dairy cows, three weeks before and after calving, is of utmost importance, as their metabolic needs increase dramatically during this time. The animal needs to maintain sufficient energy levels in order to cope with this critical period. The performance of dairy cows during the rest of lactation is directly related to how well they cope with this high-energy requirement during the transition phase. This has direct effect on disease and reproduction. Essentially all dairy cows experience a period of insulin resistance, reduced feed intake, negative



energy balance, hypocalcemia, decreased immune function, and bacterial contamination of the uterus just before or during the weeks after calving. A third of dairy cows can be affected by some type of metabolic and infectious diseases in early lactation.

Routine, proactive actions, veterinary observations, or analysis are intended to accurately and efficiently provide early detection of problems, to provide an opportunity for investigation and intervention in order to limit the consequences and costs of health problems and reduce animal performance or welfare. Methods of early detection include monitoring of disease and culling records, feed intake, milk production, body condition, and simple metabolic tests.

Genetic improvement of dairy cows has markedly increased milk yield over the last three decades.

Increased production has been associated with reduced conception rate. Because conception rate in dairy heifers has remained higher, the metabolic demands of higher production may be related to the decline in reproductive performance in cows. During early lactation, increasing dietary intake fails to keep pace with rising milk production. The resultant negative energy balance and rate of mobilization of body reserves appear directly related to the postpartum interval to first ovulation and lower conception rate. Delays in the onset of normal ovarian activity, thus limiting the number of estrous cycles before breeding, may account for the observed decrease in fertility. Negative energy balance probably acts similarly to under nutrition and may manifest in delayed ovarian activity by impinging on pulsatile secretion of LH. Lower

availability of glucose and insulin may also decrease LH pulsatility or limit ovarian responsiveness to gonadotropins. Alternatively, release of endogenous opioids in association with increasing feed intake or other lactational hormone responses may provide neural or pituitary inhibition of the pulsatile LH production that is requisite for ovarian follicular development.

Correlations between reproductive traits and measures of milk yield indicate that higher yield is associated phenotypically and genetically with reduced reproductive performance in lactating cows. Numerous recent studies have reported that reproductive performance is compromised, primarily through delayed ovarian activity and reduced conception rates, by the demands of high milk yield. However, daily managerial decisions to obtain efficient reproductive performance have considerable impact. Management can offset depression in fertility, because high yielding herds often achieve the fewest days open.

Different techniques are used worldwide to improve and maximize production through reproduction in cattle keeping their health as top priority. An increase in research and modern techniques in the Middle Eastern and GCC countries can increase economic gains in this sector; Artificial Insemination, Synchronization of Estrus, Embryo Transfer, Sexed semen, In vitro fertilization, and Cloning.

Local dairy farmers can also be empowered to increase their abilities to perform better in the dairy sector by following simple protocols. In a dairy farm, keeping control of these parameters, farmers can maintain the health and reproduction of the herd.

BALANCING WINTER RATION SUPPLEMENTATION FOR OPTIMAL COW PERFORMANCE

As producers begin to open maize and grass silage clamps, paying close detail to forage quality is essential to ensure the nutritional requirements of dairy herds are met, says Dr Richard Kirkland, ruminant nutritionist for Volac Wilmar Feed Ingredients.

“Balancing a winter ration should begin with silage analysis to fully understand the quality of the basal forage to enable appropriate supplementation with key macronutrients including fibre, starch, sugar, protein and fat,” he says. “The

primary target – ensuring energy supply is maximised.”

Delivering adequate energy to support milk production will always be a challenge with modern high-yielding cows and that energy will necessarily come from a range of sources.

“High D-value silages targeted to the highest-yielders will improve energy availability, but when it comes to supplementation we must look for a range of energy sources to give the ration the balance needed,” says Dr Kirkland.

Starchy cereals provide a boost over digestible fibre

sources of energy but limits will soon become clear as over-reliance on either of these types of raw material will lead to problems or productivity shortfalls. With wheat and barley, rapid rates of starch fermentation in the rumen generates acid which drives down rumen pH, and with that an increased risk of acidosis. This effect will be acutely evident in the milk cheque with a fall in milk fat percentage, but the knock-on effects of poor rumen function will reduce fibre digestibility – reducing energy delivered from the basal

An essential and unique energy source, dairy cows require 15-20% of energy supply from fat, which could be heading toward 6% in the ration dry matter to meet requirements as a key nutrient the cow needs to make milk optimally, says Dr Richard Kirkland, Global Technical Manager for Volac Wilmar Feed Ingredients.



forage, as well as increasing lameness issues. With a slower fermentation rate, maize offers a somewhat 'safer' form of starch than the other cereals and has a slightly higher energy density making it a good addition for starch supply.

Digestible fibre sources such as soya hulls, citrus and sugarbeet pulp will help balance the starchy energy sources and aid rumen function and milk fat, though offer less of the rumen 'tickle' factor than fibrous forages. With lower energy concentration than the cereals, the greater bulk will limit the potential to deliver those vital megajoules (calories).

"As we're well aware from our own dietary habits, the number one energy source is fat. With around 2.5-times higher energy concentration per kilo than cereals, fat punches well above its weight, but with the key benefit that it doesn't generate acid in the rumen to risk acidosis. It's all about getting more energy in every bite," explains Dr Kirkland. "As with the other macronutrients, research has defined requirements for optimal milk production and data indicate that dairy cows require 15-20% of their energy supply to be in the form of fat. From a more practical perspective, this means that rations heading toward 6% fat in the dry matter could be required to meet the needs for milk production."

Using fatty acids to support cow performance

Aside from a concentrated source of megajoules, Dr Kirkland says the response to fat supplements will vary according to the blend of fatty acids making up the fat. The

supplement most suitable to an individual farm will depend on factors including requirements for milk contract, stage of lactation and the drive for fertility.

For early lactation cows, the challenge is to minimise body condition score loss and to get back in calf. As a general rule, each one-unit loss in condition will reduce conception rates by 10%. During this period, C18:1 (oleic acid) is a key fatty acid, particularly when targeting those key additional megajoules as it effectively increases the digestibility of total diet fat to provide an additional energy boost and greater feed efficiency.

"Nutrients can only provide energy if they are actually digested and absorbed by the animal. The latest research also demonstrates the beneficial effects of C18:1 on insulin status, increasing partitioning of energy and nutrients to improve body condition," says Dr Kirkland. "We also see C18:1 directly influencing the development of fertilised eggs and the likelihood of successful pregnancy."

"However, to realise these beneficial effects, C18:1 must be delivered through the rumen to the small intestine. This can only be achieved by supplementing with rumen-protected forms of the fatty acids which in practical terms is provided by the calcium salt supplements. Data collated using the Megalac product indicates that larger granule size supplements are more effective at avoiding breakdown in the rumen, enabling delivery of the vital C18:1 to the intestine for absorption in its active form."

Where milk fat is a key target, then supplements with higher



Lack of energy results in body condition loss, health problems and poor fertility.

levels of C16:0 (palmitic acid) are most appropriate. Recent data demonstrate an increase in fibre digestion with these supplements which will also aid milk fat, but care should be taken in early lactation as these supplements can drive milk production at the expense of body fat, leading to poorer cow condition which we need to avoid.

A multi-purpose fat supplement like Mega-Max with a scientifically proven ratio of around 60% C16:0 and 30% C18:1 is an effective way to meet nutritional needs of the entire herd at different stages of lactation.

"A balanced ration is important to keep the engines running smoothly in modern dairy cows, but remember the primary need is for energy which will always be a challenge to meet," concludes Dr Kirkland.

For more information, visit www.volacwilmar.co.uk

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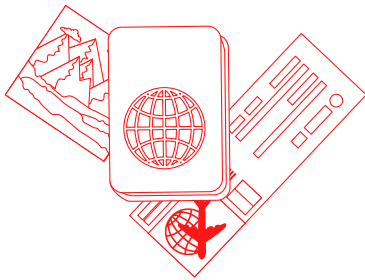




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