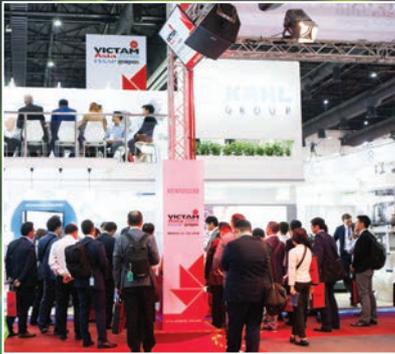


# Far Eastern Agriculture

US\$ 15.00 (UK£9.00)

VOLUME 35 ISSUE 2 2018

## Priming early growth in sugarcane



VICTAM ASIA review. p10

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# Far Eastern Agriculture



Priming early growth in sugarcane

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### Thailand resumes export of frozen chicken to China

THAILAND HAS RESUMED the export of frozen chicken meat to China, with the first shipment of 14 containers for the Yunnan province being valued at US\$1.1m. In 2004, China banned importing poultry products from Thailand following the outbreak of bird flu disease. Ren Yisheng, China's consul general to Thailand said China is closely monitoring the development of control systems of the chicken industry.

The chicken products come from the seven factories which are among the 19 factories that received the green light from the Certification and Accreditation Administration of China to ship to the country in March 2018.

In Thailand, poultry farming is a major industry that adds much value to the country's economic development, with chicken meat accounting for almost 85 per cent of total meat exported to various international markets.

Niwat Sutemechaikul, deputy secretary of Thailand's Ministry of Agriculture and Cooperatives, said the far eastern Asian country is continuously upgrading its domestic chicken industry to meet international standards. In line with the Thai government's initiative to export more poultry products, Thailand hopes to export more processed chicken meat to Asian as well as other international markets.



Image Credit: Adobe stock

*Poultry farming is a major industry that adds much value to Thailand's economic development*

### New Holland holds dealer convention in Istanbul

NEW HOLLAND AGRICULTURE held its 2018 Dealer Convention at Çırağan Palace, Kempinski in Istanbul. The New Holland and Parts and Service teams and more than 40 business partners, representing the brand's dealer network from 17 countries across Middle East and Africa, converged in the iconic Turkish city for the two-day meeting. The first day of the Convention was devoted to marketing and the key role it plays in achieving the brand's and network's goals in the Middle East and Africa. It included New Holland's first Marketing & Communication workshop with the theme Blue beyond Ordinary. This training session focused on New Holland's Brand Values and best practices in the region, and stimulated lively interaction among participants.

The second day was dedicated to the plenary Dealer Meeting, hosted by company leaders Alessandro Maritano, New Holland Agriculture EMEA Vice President; Mattia Manicardi, MEA Business Director; Özkan Eren, MEA Head of Business; and Antoine Rebillard, EMEA Parts & Service. They discussed the brand's strong leadership in the region and shared the brand's plans and strategies to continue developing the business under the theme: Break the Records.

### Olmix Group explores algae's role in boosting immunity

INRA AND OLMIX Group, the global leader in macroalgal biorefinery (particularly green and red algae), have set up a research partnership to explore the potential of isolated algal extracts rich in sulfated polysaccharides (OLMIX MSP® IMMUNITY). The joint efforts have led to demonstrate that in an 'in vitro' study on differentiated intestinal porcine epithelial cells (IPEC-1), MSP® IMMUNITY prepared from *Ulva armoricana* green macroalgae, harvested from the northern coast of Brittany, stimulated the production of immune mediators in the intestine as CCL20, IL-8 and TNF. The role of those immune mediators in the activation, recruitment and migration of immune cells, upon intestinal infections is demonstrated.

Understanding the mechanism of the immunomodulatory action mediated by MSP® IMMUNITY is necessary in order to optimise the use of bioactive polysaccharides in future prevention strategies boosting the animals' immune response and health. The studies aim to explore the mechanisms involved in the modulation of immune response of epithelial cells by MSP® IMMUNITY.

These 'in vitro' results are very promising, since it shows that the MSP® IMMUNITY could be used in animal feed to modulate the immune response of livestock and protect their mucous membranes from pathogenic bacteria, increase animals' resistance to infection and reduce the use of antibiotics on farms, an actual major public concern.

### Indonesia, Vietnam agree to resolve fishing violations

IN A BILATERAL cooperation committee meeting between Vietnam and Indonesia held in Hanoi, the countries have agreed to strengthen cooperation to settle fishing violations in the South China Sea, to improve the trade relations.

Speaking to the joint press conference with his Vietnamese counterpart, Retno Marsudi, foreign minister in Indonesia, said that both the countries will focus on strengthening collaboration to resolve fishing and related maritime issues. Indonesia took an uncompromising stand against all kinds of illegal fishing activities in the country. Following this, the Southeast Asian nation has been destroying illegal fishing vessels from Vietnam, the Philippines, Malaysia and Thailand, for violating its waters.

Addressing this, Pham Binh Minh, foreign minister of Vietnam, said that the country will focus on educating its own fishermen to raise awareness about the international water laws. In addition, both Indonesia and Vietnam will develop a water mechanism to control fishing violations as per the laws of both the countries.

Fishing is one of the major sources of income for a vast number of Vietnamese families. In order to boost its fishing activities, Vietnam is reportedly developing a state-supported fishing boat militia to help the commercial fishers in the country in the South China Sea.



Image Credit: Adobe stock

*Indonesia and Vietnam will develop a water mechanism to control fishing violations as per the laws of both the countries*

## Bühler LumoVision: Improving livelihoods with data-driven grain sorting technology

BÜHLER HAS COME up with a breakthrough in sorting technology that will minimise toxic contamination in maize and improve yield, by identifying and removing cancer-causing, aflatoxin-infected grains.

Developed in partnership with Microsoft, the launch of LumoVision™ is a significant advance for the maize processing industry in its fight against fungal molds called mycotoxins, the most poisonous of which is aflatoxin. The innovation can eliminate up to 90 per cent of contaminated maize. “Advances in digital technology, together with our sorting and food safety expertise, make this an unrivalled system that contributes to solving a major global food safety and security challenge,” says Matt Kelly, managing director of Digital Technologies at Bühler.

Maize is a vital, staple food crop in many regions of the world and a major component in animal feed, but it is particularly prone to aflatoxin contamination. Aflatoxin is classified as a primary human carcinogen by the International Agency for Research on Cancer. Alongside health risks, the economic impact on farmers and food processors is significant.

### Unprecedented accuracy

LumoVision is the first optical sorting technology able to identify aflatoxin based on direct indicators of contamination,



Image Credit: Bühler

*LumoVision is the first optical sorting technology able to identify aflatoxin based on direct indicators of contamination*

while simultaneously using real-time, cloud-based data to monitor and analyse contamination risk.

It works by analysing the fluorescent color each kernel has as it passes under powerful UV lighting in the sorter. It is known that contaminated kernels fluoresce a specific bright green color. LumoVision’s proprietary, highly sensitive cameras detect precisely this fluorescent color. Within milliseconds of detection, air nozzles blow contaminated kernels out of the product stream. The machine processes up to 15 tonnes of product an hour, eliminating up to 90 per cent of contamination – a significant improvement on current solutions. A cloud-based solution using infrastructure provided by Microsoft is a key enabler to reducing overall yield loss. Combining data from the cameras with data stored in the cloud allows a local, real-time analysis of the risk of contamination to be carried out. When the risk is minimal, sorting is halted while the machine continues to monitor. If the risk rises, sorting automatically restarts. LumoVision, coupled with the cloud service, reduces yield loss to below 5 per cent compared with between 5 per cent and up to 25 per cent for other current solutions.

### Transforming lives and livelihoods

“We are incredibly excited about this achievement. As an organisation we have strived to solve the problem of aflatoxin contamination for many years. Now, with today’s technological advances we’re able to bring this ground-breaking solution to market,” says Ben Deefholts, Senior Research Engineer for Digital Technologies at Bühler. “With data science techniques and tools we can develop sorting algorithms, while connectivity and IoT solutions allow us to combine our optical sorting with real-time risk models,” he adds. With LumoVision, food, feed and pet food manufacturers can protect their product from contamination, avoid the cost of expensive recalls and reputational consequences, while increasing yields and reducing waste. Grain handlers can upgrade the quality of their product to attract higher prices.

## EVENTS 2018

### June

06-08

**SIMA ASEAN Thailand**

Bangkok, Thailand

[www.sima-asean.com/en](http://www.sima-asean.com/en)

11-12

**Global Dairy Congress Asia**

Singapore

[www.szwgroup.com/global-dairy-congress-asia-2018](http://www.szwgroup.com/global-dairy-congress-asia-2018)

### JULY

04-06

**Indo Livestock 2018 Expo & Forum**

Jakarta, Indonesia

[www.indolivestock.com](http://www.indolivestock.com)

26-28

**Aquaculture Taiwan Expo & Forum**

Taipei, Taiwan

[www.aquaculturetaiwan.com/en-us](http://www.aquaculturetaiwan.com/en-us)

### AUGUST

22-24

**Horti Asia**

Bangkok, Thailand

[www.horti-asia.com](http://www.horti-asia.com)

### September

17-19

**VIV China**

Nanjing, China

[www.vivchina.nl/en/Bezoeker.aspx](http://www.vivchina.nl/en/Bezoeker.aspx)

20-22

**Bangla Livestock**

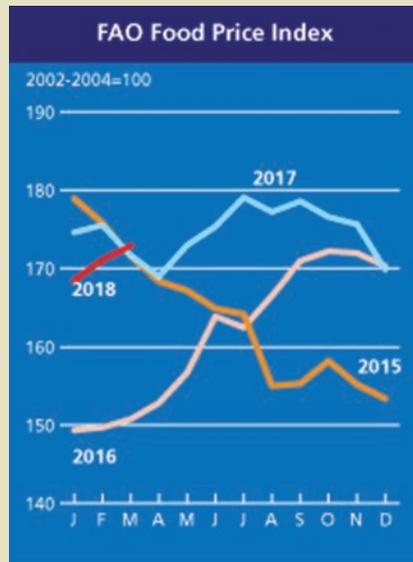
Dhaka, Bangladesh

[www.banglalivestock.com](http://www.banglalivestock.com)

## FOOD OUTLOOK

THE FAO FOOD Price Index (FFPI) averaged 172.8 points in March 2018, up 1.1 per cent (1.8 points) from February, marking the second month of consecutive increase. At this level, the FFPI stood at 0.7 per cent above its value of the corresponding month last year. As in February, the month-on-month increase in March was driven primarily by stronger international prices of cereals and dairy; whereas the prices of sugar and vegetable oils fell further and those of meat rose slightly.

The FAO Cereal Price Index averaged 165.6 points in March, 2.7 per cent (4.3 points) higher than in February and as much as 12.1 per cent above its value in March 2017. The index has been climbing continuously in recent months, reflecting firmer international prices of nearly all major cereals. In recent weeks, weather concerns, in particular, prolonged dryness in the United States and cold wet conditions in parts of Europe, lifted wheat price quotations. However, the increase in maize prices proved even more pronounced, supported by deteriorating crop prospects, especially in Argentina, as well as continued robust world demand. Asian purchases kept international rice prices stable.



The FAO Vegetable Oil Price Index averaged 156.8 points in March, falling marginally from February's multi-month low. Modest price drops for soy, rape and sunflower oils were largely offset by higher prices of palm oil – the most widely traded vegetable oil in the world. Despite expectations of seasonal production gains, palm oil prices stabilised in March on the back of robust international demand and consequent inventory drawdowns in

Malaysia and Indonesia. The EU's prospective resumption of imports of palm oil-based biodiesel from Indonesia and renewed strength in mineral oil prices also lent support to palm oil values.

The FAO Dairy Price Index averaged 197.4 points in March, up 6.2 points (3.3 per cent) from February and slightly above its level in the corresponding period last year. During the month, international price quotations for butter, whole milk powder (WMP) and cheese rose, while skimmed milk powder (SMP) declined, reversing the gains recorded in two preceding months. Lower than anticipated milk production in New Zealand and continued strong global import demand led to higher butter, cheese and WMP prices, while continued pressure from global stocks and higher production pushed down SMP prices.

The FAO Meat Price Index averaged 169.8 points in March, almost unchanged from February. At this level, the index is 3 per cent above corresponding month last year but still almost 20 per cent below the peak reached in August 2014. Across the meat categories that constitute the index, price quotations for ovine meat increased, pig meat gained slightly and poultry meat remained stable.

## Dinnissen: At the forefront of process technology innovations

DINNISSEN AIMS TO provide customers with high quality, innovative concepts that add value to their processes.

### Hamex Hammermills

The screens and hammers housed inside the new Hamex Hammermill enable 20 per cent higher production capacity at the same level of power consumption. The hammermill, with semi-automatic screen changing system, has a very robust design and operates at a maximum speed of 1,800RPM. The noise levels are kept to the minimum.

Dinnissen has improved the inflow of ingredients by integrating stone trap and magnet into the design. This prevents damage to the screens from iron particles or hard objects.



Pegasus® Wingdoor Mixer

### Pegasus Wingdoor Mixer

The blending of kibbles calls for efficient cleaning in the pet food industry. Dinnissen has invented the front to front system for the mixer's bomb doors to completely empty the mixer. Dinnissen now offers large wing doors for easy access. Apart from

facilitating effective cleaning, the wing doors make inspection easy.

### Pegasus Vacuum Coater

In the Pegasus Paddle Mixer, the product is raised in a fluidised zone, enabling a gentle, fast and energy-efficient mixing process. In experiments carried out under vacuum conditions, high concentrations of liquid were sprayed onto the feed pellets. Upon removal of the vacuum, the liquid was drawn deeply into the coated pellets. Dinnissen gradually increased the fat content of pellets up to 42 per cent. This increases the flow out of the silo, prevents pollution and reduces contamination at farms. Dinnissen has perfected the vacuum technology over the years and made it suitable for many other applications.

## Van Aarsen introduces high-capacity GD hammer mills

VAN AARSEN HAS introduced the GD hammer mill with automatic screen exchange system and frequency controlled motor. The hammer mill is equipped with a large breaker plate in the upper section of the grinding chamber. The right particle size is achieved through multiple impact action in the top section of the chamber, after which the ground product exits the mill through the screen at the bottom.

The screens have a direct effect on the end-product quality and the hammer mill's capacity. The combination of the perforation size and open area (the number of holes) in a screen determine the particle size, particle variation and the grinding capacity. The larger the perforation opening, the coarser the ground product.

The mill's capacity is directly proportional to the open screen area. The

hammer tip speed plays a huge role in determining the particle size of the ground product. A higher tip speed means a higher impact and finer grind. The tip speed shall be set based on the ingredients and the desired end-product. The hammer tip speed can be

controlled via a frequency controller.

Van Aarsen offers an automatic screen exchange system that holds three different screen perforations.

Depending on the recipe in use, the screen exchange system automatically positions the right screen plates in the hammer mill screen holder, thereby reducing the screen changeover time from 20 minutes to just one minute to facilitate higher capacity and reduced labour. The automatic screen exchange system can be combined with a frequency controller which regulates the hammer tip speed. By adjusting the hammer tip speed to suit the screen perforation, the ideal setting can be chosen for achieving the right particle size and variation while maintaining capacity at the desired level. The GD is characterised by a low energy consumption of approximately seven kWh/tonne.



Image Credit: Van Aarsen

GD hammer mill

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# The tricks of the trade

Jade Dyson, director of Gafta Singapore, gives the low down on the hidden dangers lurking in international trade contracts.

## What does Gafta do?

Gafta is an international trade association with over 1,800 members across 90 countries. Our aim is to promote international trade in agricultural commodities, spices and general produce. We protect our members' interest and provide support through contracts and arbitration, trade assurance, trade policy, professional training and networking events. Gafta offers a wide range of membership categories for traders, brokers, superintendents, analysts, fumigators, arbitrators, individuals etc.

## Why Gafta?

The origins of Gafta go back to 1878 with the creation of the London Cattle Trade Association and the London Corn Trade Association. Both organisations were established with the primary purpose of establishing common trade rules. Gafta was created in 1978 when the two organisations merged. With such a longstanding history, the Gafta contracts have been tried and tested in arbitration and in the courts. Gafta contracts are based on English law which comes with its own set of advantages when dealing with international trade and arbitration. The contracts are the result of ongoing and wide industry consultation and are updated to reflect the modern trading environment and the requirements of the industry as a whole. Gafta represents members' views to authorities by giving informed opinion on legislative and policy developments through the publication of regular material on the current grain market and policy updates on trade issues. Gafta has excellent connections with international organisations and authorities, allowing for access to information to negotiate routes for effective representation. We provide advocacy and informed opinion on global agricultural legislation and policy, market access and trade facilitation, food and feed safety, financial legislation and international engagement.



Image Credit: Adobe stock

*Regardless of what and where you are trading, not knowing and understanding your entire contract is always a big risk.*

## What are the risks involved in international trading when it comes to paperwork?

Regardless of what and where you are trading, not knowing and understanding your entire contract is always a big risk. Your contract terms dictate your obligations and how you navigate through the execution of your contract. It is important to understand the contract terms – not just what you may deem to be vital – to ensure you are mitigating the risk of error. Very often, it takes companies to be caught up in an arbitration before they invest in contract training. What may seem like very simple mistakes and oversights in relation to a term buried on the back pages of your contract can become very expensive, very disruptive issues for your company.

## What are the things to keep in mind while signing a contract?

It's essential to know what you are getting into. If a contract incorporates a Gafta standard form, go to our website and download a copy, read it and understand it

**Our contracts are designed to be used as trade templates**

before signing. Also, note that under English law a signature is not always required, however, it is always good to understand the law in the country in which you and your counterparty are based and the locations in which your goods will be traded.

## What is the cost involved in signing up as a member?

The costs can be found on our website, but for traders the fee is US\$2,134 per year along with a one-off joining fee. We have various membership categories to suit the different operators and service providers along the supply chain.

## Tell us about Gafta Professional Development and Distance Learning Programme?

The Gafta Professional Development (GPD) training and the Distance Learning Programme (DLP) are two of our training options available to everyone. The GDP is a series of four 2/3 day courses covering trade foundations, contracts, shipping and dispute resolution. DLP is run on our online platform. It is a series of six modules that lasts for three months each. The completion of all modules in GDP or DLP qualifies you to sit in the Trade Diploma exam, which is one of the requirements to become a qualified arbitrator with us. We are in the process of creating smaller 'bite size' learning

modules on our online platform which will be rolled out over the next 12 months. Members receive a discount on their training with us, but the courses are open to everyone.

**Does using contract forms from your website automatically protect a trader from future disputes?**

No, our contracts are designed to be used as trade templates, traders need to negotiate any additional terms they need with their counterparty. In order to use Gafta arbitration, our arbitration clause must be expressly incorporated into your contract. You can incorporate only our arbitration clause and not use our entire contract. Just remember our arbitration services are designed for contracts based on English Law and this is what our arbitrators are trained in. Benefits of being a members include: discounted arbitration and training, access to our defaulters list so you can see who has lost an arbitration and not paid the award, regular email updates on trade policy and notices and the opportunity to sit



Image Credit: Jade Dyson

Jade Dyson, director, Gafta Singapore

on our committee and contribute to the work and direction taken by Gafta.

**Lastly, can you elaborate on the challenges and opportunities in international trade?**

I think the exciting thing about trading is the changing landscape. Depending on the market and where in the supply chain you stand, market volatility could be a good or bad thing.

Changing diets is a big topic at the moment, especially in South East Asia and Africa. As population's historically reliant on a high carbohydrate diet shift to a higher protein and higher dairy diet, the demand for animal feed is increasing. The rations being fed to animals can also shift as a result of global supply and price changes, traditional purchasing decisions are questioned and adapted. Whilst there is consolidation among some larger players in the industry, new companies are cropping up to trade wherever the opportunity presents. These companies have relatively low overheads, are light on assets and consider themselves to be opportunistic traders. This indicates that people still see the opportunity for profit margins within the industry and the increased competition will continue to drive the sector into the future. Just as we think the world can't get any flatter, it does, bringing with it new opportunity. Feeding the world is of vital importance, meaning our industry is key and although changing, will always be fundamentally crucial. ■

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# VICTAM Asia 2018: A bellwether of change



*The exhibition and conferences were held at the Bangkok International Trade and Exhibition Centre from 27 – 29 March*

VICTAM is a great place to seek out market trends, update technology and stay on top of the changing landscapes of multiple industries.

**J**OACHIM BERHMAN, MANAGING director of Amandus Kahl, has never missed a VICTAM show in the past 53 years. Recalling the initial years of VICTAM, he said, "though the atmosphere was nice and family-like, everyone was careful as the competition bordered on dangerous. Now, it's more professional. We all know and respect each other."

Joachim said the European market is saturated and Asia is where all the action is. He said the Asian edition of VICTAM is scaling up big-time and he looks forward to attend more shows down the road.

ESE has also been part of the VICTAM Asia since its inception. The president of the company, Josef W Barbi, also reminisced about the humble beginnings of the Asia edition in a hotel garage 27 years ago.

What started as a modest event in Thailand in 1991, has now become the fixture in animal feed processing, grain processing, ingredients and additives, aqua feed, and pet food industries.

"The defining year for VICTAM Asia was 2002 when we found a local Thai partner, Expolink, and appointed consultants in various Asian countries. From then on, VICTAM Asia grew from strength to strength," said the event's marketing manager, Catelijne de Gooijer.

#### Business Tinder

VICTAM is a great place to seek out the market trends, update technology and stay on top of the changing landscapes of multiple industries. The exhibition and conferences were held at the Bangkok International Trade and Exhibition Centre

**■ The matchmaking was done through an easy-to-use technology platform combined with a personalised service**

(BITEC) from 27–29 March, 2018. As many as 228 exhibitors from 33 countries took part in the show. Most number of exhibitors came from the mainland China.

The highlight of the event was the high-quality of innovation on display. "The 2018 edition featured 40-plus innovations- the highest number till date. VICTAM also introduced a news room which reported from the show floor to allow people who couldn't attend to be part of the action," Catelijne said.

Apart from the newsroom, VICTAM Asia 2018 saw another new addition in the form of matchmaking rooms. Michael Laute, Asia managing director at Precia Molen dubbed the matchmaking rooms as 'business Tinder'. He said events like VICTAM takes the companies closer to their customers.

The delegates used the programme to find companies to buy and sell services, locate investment opportunities, forge business partnerships and build networks. The matchmaking was done through an easy-to-use technology platform combined with a personalised service. The matchmaking consultants were made

available on-site to facilitate the meetings.

"During the three days, close to 400 meetings took place in the eight matchmaking rooms," said Cateljine.

Jean Davy Niezgododa of Tout Pour Le Grain sees VICTAM as a point of entry to a new market. Sergey Koroteev, director at Grainfoods LLC, from Russia, couldn't agree more.

The Victam Foundation aims to support the feed and related industries worldwide. And to that end, the foundation bankrolls research projects, universities, institutes, and scholarships across the world. The landmark MOU signing between TFMA (Thai Feed Mill Association) and Korea Feed Ingredients Association (KFIA) is another instance of VICTAM'S commitment to push the envelope. "We facilitated the signing of the MOU as we felt it is very important that feed associations in countries within Asia cooperate to improve the international trade. We had organised the ASEAN meetings for all ASEAN feed associations for the same reason in the past," she added.

**Future is green**

VICTAM Asia had put together six conferences for this edition. Suzi Dominy, publisher of Aquafeed.com, said the main theme of the aquafeed conference was the increased use of plant ingredients in the feed.

Dr Jan Dirk van der Klis, director of Product Development and Innovation at Delacon Biotechnik, talked about how phytogenics support resilience against

**Victam Foundation bankrolls research projects, universities, institutes, and scholarships across the world**

intestinal infections. Phytogenics have the potential to eliminate the use of antibiotic growth promoters in livestock and boost the defense mechanism against bacteria in the intestines. He said phytogenics are standardised mixtures of plant extracts and botanical compounds and essential oils are just a small portion of it.

Dr Bob Thaler, professor/extension specialist-swine, South Dakota university, is a strong espouser of pea protein as functional ingredient in Southeast Asian piglet feed. He said the fish stocks worldwide are going down. Pea is non-animal based product that appears to work well for piglets and is a great candidate to replace fish meal. Pea protein is good for gut health and can help reduce the use of antibiotics in animals, he added.

David Tze, CEO, Novo Nutrients, talked about the scope of single cell technology as an economical substitute for fish meal.

"Algae are naturally good at producing fat and they are the base of the food chain that supplies the healthy omega-3 fatty acids in salmon and other marine fishes. Big

players like DSM are looking at the production of these DHA rich fish oil replacements from micro algae. But microbes are particularly good producers of protein. We are looking at bacteria for high quality nutritious protein meal produced cost-effectively and entirely from waste streams. Novo Nutrients employs a natural fermentation process to capture and convert CO2 and other forms of waste carbon into animal feed.

"The microorganisms are chemoautotrophs, meaning that they can produce complex organic compounds like proteins, fats, and carbohydrates from simple, inorganic ingredients like CO2 and hydrogen. After fermentation, the microbes are harvested, dried, pelletised and packaged into a high protein, fish-free feed (F3) ingredient suitable for aquaculture and other forms of animal feed," he said.

NovoNutrients' microbes can grow off of a variety of carbon sources, including bioethanol refinery emissions, cement flue gas, and oil & gas refinery waste gases. Because CO2 released into the atmosphere is the primary cause of anthropogenic climate change, capturing CO2 before it's emitted has tremendous global environmental benefits.

Nature has answers, if we ask the right questions, said Benyus, author of the book Biomimicry. OxC beta™ LIVESTOCK of Avivagen is straight out of nature's playbook.

The scientists working for the government of Canada have found oxygenated/oxydated beta carotin fosters the immune system. OxC beta™ LIVESTOCK is a formulation based on beta carotin. The product improves the overall health of the animal and has profound anti-inflammatory effect.

"It is not a drug but a naturally occurring substance and works on all species," said Avivagen CEO Kym Anthony.

Reducing antibiotic use is the hot topic in the feed additive industry, said Neil Gannong, product manager of Biomin. It's not going to be easy and requires a holistic programme in terms of biosecurity management, hygiene and nutrition, he added.

Getting the message out is also crucial. That's where events like VICTAM come in. Around 60 per cent of world's poultry are produced in Asia and it goes to all parts of the world. Improving the food chain of the world starts with improving Asia, he said.

Dr Maarten De Gussem, poultry



The three winners of the coveted GRAPAS innovation awards

consultant at Vetwork, is all for the holistic view. He touched upon the gut-brain axis—one of the hot topics in animal science—and how a deep understanding of gut microbiota is critical to the systemic well-being of the bird. He explained the four steps of vicious cycle that beset the hyperphagic modern bird and the comprehensive feed strategy to tackle it.

#### Mother lode of innovations

Electrical dryer from Geelen Counterflow, Henry Simon Rollermill from Satake and PesaMill from Bühler were the three winners of GRAPAS innovation awards.

Sander Geelen, managing director of Geelen Counterflow said the electric dryer recovers energy and water from the dryer exhaust and uses an electrical heat pump to boost back up the temperature of the drying air. Peter Marriott, sales manager of Satake Europe, said rollermill is the crucial machine in the flour milling process. The Henry Simon rollermill is designed for efficient, continuous and consistent grinding of cereal. PesaMill sets new standards in terms of food safety, flexibility and energy and is the main grinding

## Algae are naturally good at producing fat and they are the base of the food chain that supplies the healthy omega-3 fatty acids in marine fishes

component for both CombiMill and Atta flour processes.

Michael Larsen, sales director of Daniit, talked about how 5-10 per cent efficiency can be achieved by applying better control system. He said the major gain is in the batching system, energy optimisation of hammer mills, capacity increasing, lowering the wear and tear of pellet press among others.

Roger Gilbert, CEO of Perendale publishers, was excited about the small, but ingenious, innovations presented at the VICTAM. The issue of bolt holes in big silos is a good example. He said the product quality dampens due to the ingressive moisture, but sealing the bolts keep the

moisture at bay.

Neal Cass talked about how Hydronix used the knowledge from construction business to develop the Hydro Mix XT Moisture Sensor.

#### Straight out of booths

AWILA Anlagenbau GmbH caught up with the existing customers and met a few prospective customers from over the world, especially from Asia and the Middle East during the VICTAM Asia 2018. The German company is a regular at all VICTAM exhibitions.

AMANDUS KAHL GmbH's booth caught big interest by visitors this year. Kahl displayed the new powerful 65-1500 series flat die pelleting press and the bestseller OE 30 expander. The roller mill and long fibre pelleting are two hot selling products of Kahl.

Over three days, more than 6,987 visitors from 80 countries graced the event. A very high proportion of the visitors were from outside Thailand (45 per cent from 66 countries)

VICTAM International 2019 will be held from June 12–14, 2019 in Cologne, Germany. ■

## INAGRITECH to be held from 25-27 July in Jakarta

INAGRITECH 2018 WITH sub-events INAPALM 2018, SugarMach Indonesia 2018 and INAGRICHEM 2018 is the place to be to boost sales and gain exposure with the major decision makers and potential buyers. INAGRITECH 2018 is expected to attract over 500 exhibitors. The 5th INAGRITECH 2018 will take place on 25 – 27 July 2018 at JIExpo Kemayoran, Indonesia and will co-locate with sub-events including INAPALM Asia 2018, INAGRICHEM 2018, SugarMach

Indonesia 2018. The event is one of the ASEAN's most prospective one-stop exhibitions for agricultural machinery and equipment, sugar machinery, garden equipment, palm oil processing machinery, forestry equipment and agrochemical under a single roof.

SugarMach Indonesia 2018 is the premier show focussing on sugar machinery, innovation, and technology in Indonesia. The show is backed by the Indonesian Sugar Association (AGI) and

Indonesian Sugar Professional Association (IKAGI). SugarMach Indonesia 2018 aims to bolster the infrastructure of Indonesia's sugar industry as well as leveraging the country's bid to accomplish sugar self-sufficiency.

INAPALM ASIA 2018 is one of Indonesia's most prospective one-stop platform for palm oil machinery and processing technology. The expo aims to bring together suppliers and showcase latest technology in the palm oil industry. The event offers a great networking opportunity for businesses, both local and global.

INAPALM Asia 2018 is officially endorsed by APKASINDO (Indonesia Palm Oil Smallholders Association). APKASINDO represents palm oil farmers from all over Indonesia with a membership of around 12 million. Exhibiting at INAGRITECH 2018 (INAPALM Asia 2018 and SugarMach 2018) affords an opportunity to meet with high-end clientele. INAGRITECH 2018 will have a new section, RICETECH Indonesia 2018, focussing on rice technology and equipment.



*The previous edition of the event attracted nearly 8,000 participants*

Image Credit: INAGRITECH

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# Priming early growth and establishment of sugarcane



Image Credit: Omex Agrifluids

*Sugarcane is vulnerable to weed growth during its establishment stage.*

## Dr Terry Mabbet chalks out healthy practises to achieve a robust sugarcane yield

**S**UGARCANE IS A slow-starting crop which benefits from nutrient seed priming so that new strong shoots can get out of the ground as quickly as possible. Short lengths of stalk called stem cuttings or setts propagate sugar cane. Buds develop into shoots and grow into new 'stalks' (canes) which are harvested for their rich sucrose (cane sugar) content. It takes between 10-24 months before the canes are ready for harvest.

### Root of the problem

At the root of sugarcane's tardy take off is the unfolding complexity of root development featuring three separate and disparate rooting systems appearing at different stages of the plant's growth and development.

The initial roots – which are of the sugarcane sett itself – are thin, branched, superficial and transitory. These are succeeded by stem roots which are longer, straighter and more permanent. These second stage roots have two primary functions – to supply water and nutrients and to provide physical support to the rapidly establishing

**With the early treatment of sugarcane setts in the furrow, new shoots push out through the soil sooner and look stronger**

sugarcane plant. Finally, the buttress roots will go deeper into the soil to anchor the plants firmly into the ground.

By this time, sugarcane will have already grown to a considerable height and density, making it difficult for fertiliser use. However, the slow initial growth stage presents an early window of work opportunity at the time when sugarcane requires a nutrient boost to kick start germination and establish the setts as rapidly and securely as possible. It offers farmers a valuable opportunity to carry out growth priming procedures by applying soluble nutrient formulations to sugarcane setts in the furrow.

### Nutrient-led priming procedures

Omex Agrifluids has recognised this requirement and the opportunity for an early boost to germination followed by quicker growth and establishment. The Omex Agrifluids philosophy is based on treating setts in the furrow with soluble nutrients and biostimulants to achieve earlier crop establishment and enhanced tillering to give more and bigger canes to cut at harvest time.

To this end, Omex Agrifluids, in cooperation with distributors and farmers in the sugarcane world, has monitored early growth and establishment with a multitude of measurements. What they essentially found is shoots are coming out of the ground earlier and faster and are looking stronger for at least two to three months.

There is another good reason for priming planted cane setts but this is often overlooked due to a general but misinformed view that sugarcane crops – because of their overall fast growth rate, high foliar density and size – are not overwhelmed by weeds. While this may be true once sugarcane tillers have covered the ground, it is certainly not true in the early stages of the crop.

Weed control is most needed just after planting the setts because

they will have to grow for a considerable time before reaching the stubble stage to cover the soil. In fact, during this early growth stage weeds grow much faster than sugarcane with more time and opportunity to develop because they will have begun to germinate and grow immediately after the last harrowing or furrowing.

Later on the sugarcane will have covered the ground and formed a canopy to shade out weeds but this takes 4-5 months for planted cane and three months for ratoon cane in a moist warm climate. Thus anything which gives sugarcane a boost at this early stage can only help to mitigate weed competition.

### An Omex boost for sugarcane

“First on the sugarcane ‘set’ and scene is our Omex Bio 20” said Peter Prentis, export director of Omex, “applied as a spray to sugarcane setts in the furrow.”

“This well tried and tested product combining a full range of essential macronutrients and micronutrients, and boosted by the addition of organic material derived from a single variety of seaweed, stimulates early growth activity of the sugarcane sett,” says Alan Lowes, regional director at Omex.

“This bio-stimulant enhances root growth and development to promote greater root biomass and to ultimately maximise access, absorption and utilisation of soil moisture and soil nutrients dissolved therein. Net result is quicker establishment and faster and stronger early plant growth,” they said.

Omex Kingfol Zinc contains 70 per cent w/v (weight/volume) zinc. “Zinc is the most widely spread soil-based micronutrient but invariably the most inaccessible to crop plants because huge amounts are locked up as insoluble zinc and therefore unavailable to plant roots,” says Peter. “Plant available shortfalls in naturally occurring soil-based zinc make deficiency of this essential micronutrient the most acute and widespread across the world’s major field crops and sugarcane is no exception,” said Alan Lowes.

Zinc stimulates root activity and is well established for its crucial role in early crop growth. Deficiencies of zinc in sugarcane are reflected in reduced tillering, shorter internodes and thinner stalks exhibiting a loss in turgidity. At the leaf level, zinc deficiency shows up as a marked chlorosis (yellowing) of the veins, especially on young leaves. The area around the midrib and the leaf margin remains green but the leaf blade is otherwise chlorotic. Leaves are less numerous and generally shorter in length with a high incidence of leaf tip

death. Presence of red areas or lesions is due to the presence of anthocyanin pigment. At cell level, zinc is a crucial co-factor for a number of enzyme systems.

Omex ‘Kingfol Manganese’ contains 52.8 per cent w/v manganese. Like zinc, the manganese micronutrient is an important enzyme activator. Deficiencies will rapidly show up as chlorosis (yellowing) of the leaves but in this case of the lamina tissue between the veins from the leaf tip and towards the centre of young leaves. In acute deficiency cases the chlorotic tissue may die, turn brown and split along the lines of necrosis with marked leaf twisting. Mature leaves are also affected but in this case are accompanied by reddish coloured necrosis also indicating the presence of anthocyanin pigment. Inter-vein leaf necrosis rather than necrosis of the veins is what distinguishes manganese deficiency from zinc deficiency in sugarcane.

### Securing early growth and establishment

With prompt early treatment of cane setts in the furrow, new shoots push out through the soil sooner and look stronger. They start to photosynthesise more rapidly thus contributing to growth, establishment and development much sooner in the crop cycle. Compared with untreated setts in the same field, these earlier-appearing shoots continue to look stronger and more robust for 2-3 months after which the advantage appears to fade as a more even stand is presented. Those treated with Bio 20, Kingfol Zinc and Kingfol Manganese yield a higher tonnage due to bigger and heavier canes and, more crucially, with a higher sugar content.

Early treatment of setts in the furrow with Omex soluble nutrient and biostimulant products is now carried out in most of the key sugarcane growing countries of the world including Thailand, Indonesia, India, Brazil, Mozambique and South Africa.

Peter Prentis and Alan Lowes summed up the situation for sugarcane. “Applying nutrients and biostimulants at the very beginning of the crop is by far the easiest option for sugarcane farmers and growers. It allows them to avoid the logistical constraints in relation to driving vehicles through or walking through well grown sugarcane with all the associated problems of achieving adequate spray coverage. However, the single biggest advantage of treating cane setts in the furrow is providing these fledging sugar plants with the right nutrient requirements at the right time which is at the rooting and establishment stage of the crop”. ■

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# Evaluating fibre sources for gut health management in piglets

Soluble fibres are fermentable but tend to have negative effects on nutrient absorption. Dr Christine Potthast, director R&D, Agromed Austria GmbH, writes.

**F**IBRE WAS ONCE considered an unsavoury nutrient in pigs. But the recent discovery of fibre's effect on maintaining and promoting gut health in pigs has paved way for its newfound acceptance.

It is necessary to evaluate the functional properties of the fibre contained in the feed materials and diets for the selection of fibre sources.

Fibre is the generic term for a variety of carbohydrates found in the plant cell wall, which cannot be hydrolysed by enzymes in the body. Depending on the composition, gut bacteria can ferment fibre. Also, general differentiation regarding solubility and insolubility is necessary.

Insoluble fibre can either be inert (non-fermentable) or fermentable but characterisation for fermentability by an analytical differentiation is currently not possible. Insoluble, non-fermentable fibres regulate peristalsis in the gastrointestinal tract.

Soluble fibres are fermentable but enhance viscosity and tend to have negative effects on nutrient absorption. This is especially important for the weaning piglet since ingredients with high amounts of soluble fibre (eg beet pulp) can be partially fermented in the small intestine, where they can stimulate undesired bacterial flora and adversely affect intestinal health.

## Fibre in weaner nutrition

Weaner nutrition is a challenge as the



*Insoluble, non-fermentable fibres regulate peristalsis in the gastrointestinal tract.*

animal is immature in regard to gut function and immune system. Weaning results in alterations in gut morphology (villus atrophy), insufficient activity of digestive enzymes, disturbed intestinal absorption and increased permeability of gut mucosa. The effects often become visible in decreased feed intake, diarrhoea and reduced performance. Especially in weaner diets, insoluble fibres show positive effects on performance, gut development and structure. Supplementing weaner diets with insoluble fibre can give nutritional support for the animals in a very critical phase. This becomes obvious in results (Table 1) from a study by Hedemann et al. (2014) compared a weaner diet low in dietary fibre (DF 7.3 per cent) with high dietary fibre diets (DF 14.5 per cent) where the fibre source was either soluble (pectin) or insoluble (barley hulls) respectively.

The feed intake and weight gain in piglets receiving the diet high in soluble DF were clearly reduced compared to the low DF diet while the parameters were improved with the supply of highly

insoluble DF. In addition, the insoluble dietary fibre also supported the gut integrity by increasing the villi length.

Soluble fibre is therefore not the tool of choice for the piglet.

## Fibre sources

The aim is to use a highly concentrated fibre source without the dilution of the nutrient content or increasing the mycotoxin risk. However, a clear distinction can be seen between first and second generation Lignocellulose. The first generation Lignocellulose consists of 100 per cent insoluble but non-fermentable fibres.

If the goal is to use a fibre that is both insoluble and fermentable, second Generation Lignocellulose (2nd Gen. LC) is a good solution. The content of insoluble dietary fibre is about 94 per cent in dry matter and thereby exceed the content of other feed materials used as fibre sources (Table 2).

2nd Gen. LC is derived from fresh wood, and serves as a functional and prebiotic ingredient to reduce diarrhoea in piglets and improve performance. The micronization (average particle size 50-120 µm) ensures a high number of inert particles with a large surface area, which helps to regulate peristalsis. This prevents the ascension of pathogens, and shifts microbial fermentation to the rear section

**Feed intake, performance and villi development in weaned piglets (according to Hedemann et al. 2014)**

Table 1	Low DF	High soluble DF	High insoluble DF
Feed intake, g/d	302	180	322
Weight gain, g/d	186	58	204
Villi length, duodenum, µm	358	357	390

of the colon. Adding to this physical mode of action, the insoluble fibre of the 2nd Gen. LC is partially fermentable, promoting the production of butyric acid in the hindgut. Butyric acid is highly beneficial for intestinal tissue and dealing with anti-inflammatory effects.

In a current trial from Murdoch University, Australia (Jenkins et al., 2015), combinations of soluble (sNSP) and insoluble non-starch polysaccharides (iNSP) were fed to weaned piglets orally infected with E. coli (ETEC). Increasing amounts of iNSP, added as 2nd Gen. LC, resulted in improved growth performance, reduction in the incidence of ETEC, whilst simultaneously improving the growth of Christensenellaceae, which belong to the bacteria group of butyric acid-producing Firmicutes.

The results indicate that the addition of 2nd Gen. LC may be recommended to promote the development of the gastrointestinal tract (GIT) and health, and to improve growth performance. This is supported by current results from broilers

Composition of different feedstuffs by fibre constituents, g/kg dry matter (modified according to Braach, 2017)

Table 2	CF	SDF	IDF	Share of fermentable, insoluble fibres
2nd gen. LC	579	11	942	high
Wheat straw	396	15	838	none
Sunflower meals	535	27	871	none
Wheat bran	145	34	579	low
Soy bean hulls	375	77	713	low
Dried beet pulp	153	163	474	low

CF = crude fibre; SDF = soluble dietary fibre; IDF = insoluble dietary fibre

that indicate that 2nd Gen. LC acts anti-inflammatory in the gastrointestinal tract, visible by the reduction of pro-inflammatory cytokines (Zeit et al, 2018). The anti-inflammatory effect may be attributed to an enhanced butyric acid formation in the hindgut.

**Summary**

- Dietary fibre for piglets especially at weaning is essential to maintain the health of the gastrointestinal system and

to promote the development of the gastrointestinal tract

- Selection of fibre source is important because excessive amounts of soluble fibre may negatively influence gut health and performance
- Increasing amounts of insoluble and fermentable fibres from 2nd Gen. LC has a positive effect on growth performance in weaners and may be recommended to promote the development of the gastrointestinal tract. ■



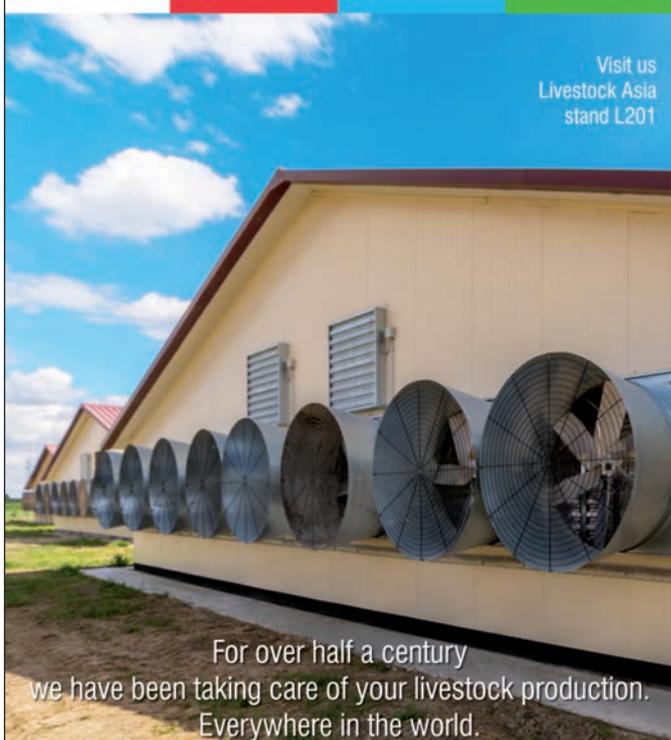
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# Opportunities for dried distillers grains in livestock diets



Image Credit: Adobe stock

Knowing and having confidence in the nutritional profile of DDGS provides several benefits to the industry. Kevin Herrick, technical services director at POET, reports.

**A**SK ANY INDIVIDUAL involved with the livestock industry about dried distillers grains (DDGS) and they will probably provide some basic information. However, beyond a general familiarity with the ingredient, most individuals don't recognise the real benefits related to animal performance and feed cost savings when including in livestock formulations.

In order to gain further acceptance by the industry, we need to better characterise this valuable co-product. Part of this characterisation includes improving how we estimate the energy of

DDGS. The ethanol industry has evolved during the past decade to become more efficient at producing ethanol. As ethanol production evolved, so has DDGS production and more specifically DDGS nutrition. Previously, we could determine the value of DDGS through a simple proximate analysis or perhaps by simply measuring fat and protein. As ethanol biorefineries have adopted new technologies, characteristics such as digestibility of nutrients within DDGS become more important to measure DDGS value.

## Previous research

Data from a previous research study illustrates this concept. Kerr et al. (2013) evaluated multiple sources of DDGS for gross and digestible energy in swine. Although this example highlights swine research, the same relationship exists in poultry as well. When we plot the fat content of each DDGS against the measured gross energy, we see a very strong linear relationship (figure 1). This agrees with the fact that since fat contains more energy than carbohydrates, we expect to see greater energy. However, gross energy does not necessarily predict the energy available to the animal. When we plot the fat of these same DDGS samples against the observed digestible energy (figure 2), we see very little relationship. In fact some DDGS samples with the least fat had the greatest digestible energy.

As previously mentioned, the ethanol industry has evolved to become much more efficient and sophisticated. This evolution included improvements to equipment, advancements in yeast technology, as well as modifications of production conditions such as fermentation times and temperatures. Each modification can potentially change the nutritional characteristics of the DDGS and as a result, we end up with variability in the DDGS supply.

This presents challenges when trying to accurately determine

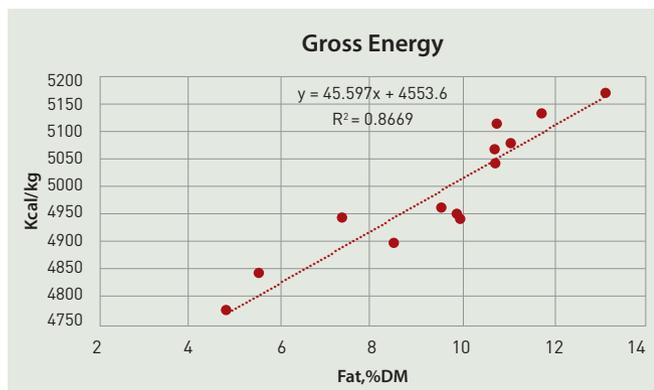


Figure 1. DDGS fat content vs. gross energy

DDGS value. As an example, previous attempts to create predictive energy equations for DDGS involved selecting a wide range of DDGS samples. This resulted in robust equations which could apply to multiple types of DDGS. However, equations lacked accuracy because of the previously mentioned factors affecting DDGS quality. In order to improve on these techniques, we need to challenge the perception of DDGS as a commodity and instead view as a value-added ingredient with unique characteristics dependent on ethanol production process.

**Current research**

To demonstrate this approach, POET Nutrition collected multiple DDGS samples and measured TMEn through an in vivo method using intact roosters. Approximately half of the samples represented DDGS produced using a single ethanol production process while the other half represented processes used by a variety of other ethanol producers. Following TMEn determination, a commercial laboratory analysed all the DDGS samples for nutrients such as fat, protein, and fibre. Using this data we calculated predictive equations using regression techniques.

As hypothesised, we found that when we analysed the DDGS based on ethanol process, we saw a much more accurate (r-squared of 0.99) predictive equation (figure 3). This equation represents an improvement on predicting energy. However, this approach limits the application of the equation to only DDGS produced using the same process. The other insight gained from this research involved how well current equations predicted the energy of the DDGS we used for this research. Both equations resulted in acceptable r-squared

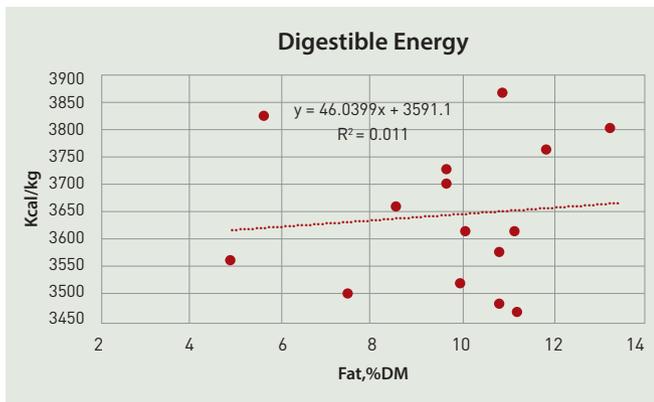


Figure 2. DDGS fat content vs. digestible energy

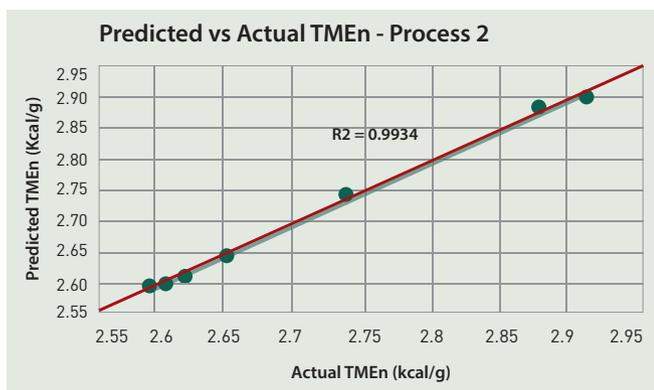


Figure 3. Actual vs. predicted TMEn of DDGS produced with the same process

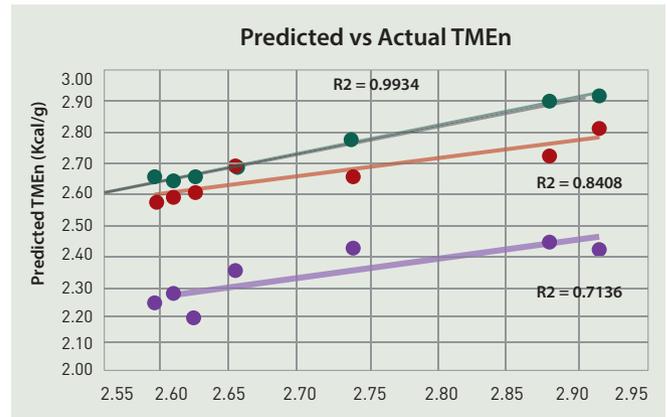


Figure 4. Actual vs. predicted TMEn of DDGS from different equations

values of 0.71 and 0.84 (figure 4). However, both equations also underestimated the amount of energy of the DDGS samples.

**Importance to the industry**

Knowing and having confidence in the nutritional profile of DDGS provides several benefits to the industry. If nutritionists do not have up-to-date ingredient profiles for their formulation software, then the incorrect formulations will negatively affect animal performance because the formulated diet won't match the animal's requirements. This creates further problems when producers have poor experiences and develop negative perceptions about the nutritional value of DDGS.

The other advantage with a better nutrient characterisation addresses the inclusion of DDGS. In the majority of formulation strategies, the use of DDGS represents cost savings. As a result, when nutritionists can formulate with greater amounts, they typically see even greater cost savings. When we can accurately predict energy, nutritionists become more comfortable with increasing the inclusion of DDGS in the diets. Less variability means less opportunity to affect the final diet.

However, this approach does present some challenges. To incorporate these precision formulation strategies, both producers and nutritionists will need to challenge the perception that DDGS do not differ. Producers and nutritionists will have to identify the source of the DDGS and ask about the process as well as anything in the process which may affect DDGS quality. Another challenge with having different DDGS sources and possibly different DDGS equations is that nutritionists and feed companies will need to spend more time related to formulation and energy determination.

Finally, in order for ethanol producers to obtain value for their DDGS, they will need to conduct research or testing to better understand their product. This information will help the ethanol producer identify specific markets for their unique type of DDGS as well as potential areas for improvement.

**Conclusion**

The distillers industry continues to grow and evolve. This provides opportunities because as the industry grows, livestock producers will have access to an abundant supply of a nutrient-rich co-product. However, livestock producers, nutritionists, and ethanol producers need to recognise that DDGS differ. These individuals need to challenge traditional approaches to determining DDGS value and perhaps even approaches to diet formulation. ■

# Case IH unveils new 2000 Series Early Riser<sup>®</sup> planter

The new planter can be easily customised to a range of soil types, terrain, fertiliser/chemical application needs and varying crop residue management practices

**C**ASE IH IS introducing the brand new 2000 Series Early Riser<sup>®</sup> planter, the first to factory-integrate industry-leading seed placement technologies from Precision Planting<sup>®</sup> into a completely new system featuring a best-in-class, all-new, rugged row unit. The planter is extremely accurate and robust to deliver precise placement across all terrains, crop types and speeds for faster, more uniform emergence.

Designed for modern seed types, treatments, populations and conditions, the new planter can be easily customised to a range of soil types, terrain, fertiliser/chemical application needs and varying crop residue management practices.

Daniel Bordabossana, marketing manager for Case IH Middle East and Africa, said, "the Early Riser planter family sets the agronomic standard with the flat-bottom seed trench it forms. This leads to earlier, more uniform emergence and higher yields. The new 2000 Series Early Riser planter builds on this legacy, and combines the most accurate planter technologies in the industry with an all-new rugged row unit. With the new planter, growers will reap the benefits of earlier emergence that is the hallmark of the Early Riser name while planting at the higher speeds they need to be competitive in today's agriculture."

## Built for speed and accuracy

Heavy-duty cast components enable the 2000 Series planter to withstand high speeds and tough, fast-changing conditions. The 65cm toolbar clearance and a 60 per cent increase in vertical row-unit travel help accommodate uneven terrain without sacrificing accurate seed depth and consistent closing – even at speeds up to 16km per hour.

The equalising gauge wheels are pulled by the row unit instead of being pushed. This means that they easily "walk" over residue and soil clods to minimise depth variation. It also results in greater stability at faster ground speeds and adverse field conditions. The Early Riser unit uses offset double disk openers to slice a trench through heavy residue and hard soil. The low angle opener and specially contoured gauge wheels produce a uniform trench, and retain moist soil next to the trench. A furrow forming point defines the seed trench and forms loose soil, creating the perfect seed delivery environment. Patented covering disks gently squeeze the trench closed, returning moist soil over the seed.

A wide press wheel lightly firms soil on top of the furrow to eliminate air pockets, ensuring optimal seed-to-soil contact for

quick germination. The chevron tread pattern scores the soil to encourage surface cracking for easier emergence in crust-prone soils.

## Factory-fit precision planting technologies

The 2000 Series Early Riser is the only planter with factory-integrated Precision Planting technology. This allows producers to customise their planter direct from the factory.

Developed specifically for the 2000 series, the all-new vSet<sup>®</sup> 2 meter and vDrive<sup>®</sup> electric drive deliver accurate and consistent seed singulation, populations and in-row spacing for a variety of crop types. This new metering system, combined with DeltaForce<sup>®</sup> hydraulic down force and row-by-row shut-offs for seed, liquid fertiliser and chemical, allows each row unit to react individually to changing conditions for better seed placement. Additional new features that can be customised from the factory include the Advanced Seed Delivery<sup>™</sup> (ASD) system for the most accurate seed delivery and placement from the meter to the furrow.

Case IH tested the 2000 Series Early Riser planter in the field at a number of customers' farms in the Southern Africa region in 2017. The tests revealed that the seed placement accuracy delivered by the Case IH planter resulted in early emergence one to three days faster than with other planter row units. ■

Case IH tested the 2000 Series Early Riser planter at customers' farms in 2017



Image Credit: Case IH

# Artificial Intelligence: What does the future hold for agri industry?

Artificial Intelligence is developing at a staggering rate with the market expected to contribute an astounding US\$15.7 trillion to the global economy by 2030.

**T**HE ARTIFICIAL INTELLIGENCE (AI) industry is booming, and with 47 per cent of digitally mature organisations stating that they now have a defined AI strategy, this rapidly evolving technology shows no sign of slowing down any time soon.

AI is developing at a staggering rate and infiltrating into all industries across our society, with the market expected to contribute an astounding US\$15.7 trillion to the global economy by 2030. From robotic farmers to implantable chips in the brain to cure dementia, the next few years are not only big in the technological world, but everybody's world in general.

So, as we continue to learn about AI and the impacts it will have across multiple industries, what really is in store for the future of AI, and more specifically, the future of AI within the agricultural sector?

## The future of artificial intelligence within the agricultural sector

Whilst farmers have tractors and big machinery to aid them in their work, the industry remains one of the toughest and most strenuous when it comes to manual labour. Traditionally, the planting, maintaining and harvesting of crops takes up time, energy, money, labour and resources. But, modern agriculture has started to see big changes.

Farming operations are becoming increasingly sophisticated as they evolve with the developments of technology. Precision agriculture, using advanced technology and big data to improve crop production and practices, is seeing more efficient and educated farming procedures brought to life. For example, AI is set to reduce this high level of repetitive and



*Futuristic gadgets are becoming more accessible to farmers.*

physical work by developing different components to help make farms smarter and more efficient. In a new initiative called FarmView, research has been carried out to create a fleet of mobile field robots that will be able to help with plant breeding and crop management by combining sensors, robotics and AI. These bots will have the ability to take a visual survey of a vineyard at the start of the season, then as the season progresses, be able to use machine learning to predict the expected fruit yield. These machines will not only reduce manual labour in this industry but should also see farms able to utilise, manage and organise their crop intake.

Popularly used as aerial observational technology, drones are set to be immensely beneficial to the farming industry in years to come. Many farmers have acres upon acres of land – all of which can be hard to manage and watch over. Drones will become extremely helpful in aiding farmers with land monitoring, as they will be able to survey crops and also carry out long-distance crop spraying. These futuristic gadgets are becoming more accessible and will likely become invaluable to any farmers harvesting solutions. Farms will not only be monitored from the sky but from machines working directly on the ground, too.

Cutting-edge machine vision tools that help farmers to scan their fields, assess crops and get rid of weeds, will become widespread. Hi-tech cameras will be fixed onto crop sprayers and will use inbuilt deep learning technology to identify plants in the field. If these cameras see a weed, it'll hit it with pesticide, but if it sees a crop, it'll drop some fertiliser.

The growth potential of AI within the agricultural industry will be huge. So, will the introduction of technology start the solution to one of the world's biggest problems - solving world hunger? With many areas of the world struggling to grow and eat their own crops, hopefully, advancements in this arena will see changes to many world issues.

Artificial intelligence is rapidly ingraining itself into the way we live our lives. With no intention of slowing down, how different will your world be in just a handful of years? For more information on the future of AI within the agriculture sector, visit [www.uk.rs-online.com](http://www.uk.rs-online.com). ■

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## Farmers Forum at SIMA ASEAN

THE MINISTRY OF Agriculture and Cooperatives is organising the National Farmers Forum at SIMA ASEAN Thailand 2018 from 6 - 8 June 2018, at IMPACT Exhibition and Convention Center, Bangkok, Thailand. The three-day National Farmers Forum is a comprehensive knowledge-sharing platform for Thailand's agriculture industry and is expected to attract 3,000 farmers apart from the head of cooperatives, dealers and distributors.

"With the strong support of MOAC's National Farmers Forum and other activities onsite, SIMA ASEAN is cemented as the all-in-one agri-business trade platform in Southeast Asia," said Loy Joon How, general manager, IMPACT Exhibition. Forum features key speakers including Dr Wiwat Salyakamthorn, deputy minister, MOAC. The expo, featuring all 11 departments under MOAC, will offer a comprehensive overview of Thailand's agriculture landscape.

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