

# Far Eastern Agriculture

VOLUME 39 ISSUE 6 2021

## Improving rice yield and quality

### **Poultry:**

Importance of sustainable practices

### **Equipment:**

Advancements in animal vaccination

### **Aquaculture:**

Technologies for future food security





# African Farming

and Food Processing

Serving  
**AGRICULTURE**  
for  
**41**  
YEARS



First published in 1980, African Farming and Food Processing is the only magazine serving Africa's agricultural community.

Each bi-monthly issue contains a mix of independent editorials devoted to sustainable agricultural development, market intelligence, products, techniques and innovations across all agricultural sectors, as well as coverage of all the major exhibitions and trade events.

Gain unrivalled reach to key buyers and specifiers across the continent by advertising in the bi-monthly magazine, on Africanfarming.net or in the monthly newsletter.



## AfricanFarming.net

Website Monthly Statistics:  
12,003 Unique Visitors  
10 minutes Average Time Spent on Site

## E-newsletters

Circulation - 23,500+  
The African Farming monthly e-newsletters can deliver your marketing message directly into decision-makers' inboxes!

**Alain Charles**  
Publishing  
*Serving the world of business*

**MENA** Tel: +971 4 448 9260  
**ASIA** Tel: +91 80 6533 3362  
**USA** Tel: +1 203 226 2882  
**EUROPE** Tel: +44 20 7834 7676

**e-mail:**  
comms@africanfarming.net  
**web:** www.alaincharles.com  
www.africanfarming.net

# Far Eastern Agriculture



Cover Image : Adobe Stock

**Editor:** Prince Kariappa  
 Email: prince.kariappa@alaincharles.com  
**Editorial and Design team:**  
 Mariam Ahmad, Prashanth AP, Fyna Ashwath  
 Miriam Brtkova, Praveen CP, Robert Daniels  
 Shivani Dhruv, Matthew Hayhoe, Unique Pattnaik  
 Rahul Puthenveedu, Deblina Roy and Louise Waters  
**Publisher:** Nick Fordham  
**Magazine Manager:**  
 Richard Rozelaar, Tel: +44 207 834 7676  
 Email: richard.rozelaar@alaincharles.com

**India** **VINAY NAIR**  
 +91 98 86494082  
 vinay.nair@alaincharles.com

**Nigeria** **BOLA OLOWO**  
 +234 8034349299  
 bola.olowo@alaincharles.com

**South Africa** **SALLY YOUNG**  
 + 27 (0) 824 906 961  
 sally.young@alaincharles.com

**UAE** **MURSHID MUSTAFA**  
 +971 4 448 9260  
 murshid.mustafa@alaincharles.com

**USA** **MICHAEL TOMASHEFSKY**  
 +1 203 226 2882 / +1 203 226 7447  
 michael.tomashefsky@alaincharles.com

**Head Office:**  
 Alain Charles Publishing Ltd  
 University House, 11-13 Lower Grosvenor Place  
 London SW1W 0EX, United Kingdom  
 Phone: +44 20 7834 7676 Fax: +44 20 7973 0076

**Middle East Regional Office:**  
 Alain Charles Middle East FZ-LLC  
 Office L2- 112, Loft Office 2, Entrance B, PO Box 502207  
 Dubai Media City, UAE  
 Phone: +971 4 448 9260 Fax: +971 4 448 9261

**Production:** Srinidhi Chikkars, Dinesh Dhayalan  
 and Nelly Mendes  
 Email: production@alaincharles.com

**Subscriptions:** circulation@alaincharles.com

**Chairman:** Derek Fordham  
**Printed by:** Buxton Press  
**Printed in:** November 2021  
**Far Eastern Agriculture**  
 [ISSN 0266-8025]



## BULLETIN

**04** A roundup of developments in the regional market



## AGENDA

**06** FAO Food Price Index  
**07** Nutreco's investments in sustainability



## LIVESTOCK

**10** Disease management and prevention



## POULTRY

**12** Global Food Partners on cage-free eggs



## CROPS

**13** Improving rice yield and quality



## EQUIPMENT

**17** Developments in needle-free vaccination  
**21** Focus on modern ploughing technology



## Advertisers Index

DLG Service GmbH (Agri Technica 2022) .....	19
Eurofeed Technologies S.p.a. ....	7
Henke-Sass, Wolf GmbH .....	11
Pak Tavuk Gida San. Ve Tic. A.S. ....	24
Unipoint AG .....	22



### ADM partners with Asia Sustainable Foods Platform

ADM AND ASIA Sustainable Foods Platform have signed an agreement to provide technology development and precision fermentation for companies serving the growing consumer demand for a wide variety of bio-based products, including alternative protein, in Singapore and the wider Asia-Pacific region.

The proposed joint venture would be a one-stop shop for both startups and mature businesses looking for support in food-grade fermentation, downstream processing, lab services and consulting. It would have the capability to assist customers, from bench to pilot scale, and would specialise in the development of microbial-based proteins to create alternatives to meat and dairy proteins and other in-demand food and beverage solutions.



Image Credit: Adobe Stock

*The proposed joint venture would be a one-stop shop for both startups and mature businesses looking for support in food-grade fermentation, downstream processing, lab services and consulting.*

“We’ve spoken to innovators, from startups to mature food providers, in Singapore and across APAC, and they have told us that they are eager and waiting for a partner that can provide support for food-grade precision fermentation technology,” said Joe Taets, president of ADM’s APAC business. “This first-of-its-kind joint venture in Singapore would meet that demand, and in doing so, will help further the development of the alternative protein industry in APAC.”

Mathys Boeren, CEO, Asia Sustainable Foods Platform, added, “As an end-to-end enabler, operator, and investor, the Asia Sustainable Foods Platform will provide bespoke solutions and support to innovators at each stage of their growth cycle. Our partnership with ADM will allow us to better support innovators to efficiently scale their fermentation innovations through pilot launch, and eventually accelerate their commercial scale-up and go-to-market.”

“The joint venture addresses the needs of innovators in developing and scaling fermentation-based solutions, allowing them to serve global customers from Singapore. This will also strengthen our agri-food ecosystem through ensuring that the suitable infrastructure and technological capabilities are in place to spur innovation of agri-food technologies,” commented Damian Chan, executive vice-president, Singapore Economic Development Board.

### Nutreco invests in Indian dairy-tech startup Stellapps

NUTRECO, A GLOBAL animal nutrition and aquaculture company based in the Netherlands, has announced its investment in India’s dairy-tech startup Stellapps with the aim to enable farmers to increase productivity and efficiency.

According to Nutreco, India is the world’s largest dairy market with approximately 570 million litres of milk produced daily and their recent research indicates that the country’s dairy market is set to increase by 6%



Image Credit: Adobe Stock

*Farmers with smaller herd sizes often face barriers when seeking to grow their businesses sustainably.*

between 2021 and 2026. With two-thirds of dairy farmers being smallholder dairy farmers (with between two and five cows), India’s dairy market has a large sustainability footprint and there is significant room for improvement. India’s smallholder dairy farmers can avail scientific innovations and digital solutions, which are crucial to enable farmers to increase productivity and efficiency in a sustainable way.

Nutreco said that farmers with smaller herd sizes often face barriers when seeking to grow their businesses sustainably, including challenges such as financial support, accessing high-quality products and services and expanding their customer base.

### Symaga secures contract for a silo project in Bangladesh

SYMAGA, A GLOBAL industrial silo manufacturer, has secured a contract for a silo project with the City group, one of the main agroindustry players in Bangladesh.

This new storage plant is located in Rupshi, Dhaka, with a total storage of 406.059 cu/m. According to Symaga, manufacturing of 49 silos have been completed in early 2021 and the company is now supervising the assembly progress.

Symaga said that Bangladesh is one of the fastest growing markets for agriculture and the company has developed projects for some of the main industrial and agribusiness companies since 2012 in the country. In 2016, the company consolidated its presence in Bangladesh with a new storage plant with a capacity of 59,452 cu/m for Akij flour mill in Dhaka, where it supplied four flat bottom silos. The extension phase of the project concluded with three flat bottom silos. In the same year, the company delivered another project for City Auto Rice, a rice mill that belongs to the City Group, with a total scope of 13 hopper silos and a combined capacity of 16.037 m3.



Image Credit: Symaga

*Bangladesh has a total 648.269m3 of built storage which have been supplied by the company.*

## Amlan International showcases mineral based feed additives



Image Credit: Adobe Stock

*The mineral-based technology within Amlan's products Varium for poultry and NeoPrime for swine.*

AMLAN INTERNATIONAL, AN animal nutrition company, showcased its natural, mineral-based feed additives aimed at improving intestinal health in swine at the Leman China Swine Conference and 2021 World Swine Industry Expo.

According to Amlan International, as the animal health business of Oil-Dri Corporation of America, the company's products are backed by Oil-Dri's 80 years of experience in mineral science. Amlan said its scientists use Oil-Dri's mineral expertise to develop reliable, research-backed products that aim to improve the quality and safety of animal protein by producing mineral-based feed additives for livestock and poultry that enhance

intestinal health, control biotoxins, improve feed efficiency and promote growth without the use of antibiotics.

The company said that its mineral technology is used in their products either alone or with synergistic blends of select feed ingredients, to reduce pathogenic challenges, strengthen the intestinal barrier and prime the immune system to naturally defend against disease.

Multiple governments, including the United States, the European Union, China, Korea and Indonesia, have recognised the mineral-based technology within Amlan's products Varium for poultry and NeoPrime for swine and have issued a patent for the products' modes of action.

## Kingspan Group introduces solution to deal with post-harvest loss

KINGSPAN, AN IRELAND-BASED building materials company, has come up with a solution to the problem of post-harvest food loss, with its cold storage systems.

Kingspan MEATCA president Dr Suat Kiroğlu said, "With ColdBox, we both contribute to reducing food losses, and prevent products from losing value for the producers. We are delighted to have found a modular, easy, and guaranteed method of preventing post-harvest depreciation of crops."

While explaining its features, Dr Kiroğlu added that the patented steel-free self-supporting design eliminates the need for an expensive steel framework. The QuadCore technology behind the product's design increases energy efficiency with its thermal performance. The cold storage systems also provide 3.5 times more storage than any typical modular cold room storage available in the market. All components fit into a single container which can be shipped to any destination globally just with the click of a finger.

### EVENTS 2021-22

#### NOVEMBER

25-27

##### Agri Malaysia

Selangor, Malaysia

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

#### December

3-5

##### Taiwan Agriculture Week

Taipei, Taiwan

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

9-11

##### Agri Asia

Gujarat, India

[www.agriasia.in](http://www.agriasia.in)

10-12

##### Agripro Asia and Tech Asia Expo

Hongkong, China

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

15-17

##### World Seafood Shanghai

Shanghai, China

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

22-25

##### Foodtech Taipei

Taipei, Taiwan

[www.foodtech.com.tw](http://www.foodtech.com.tw)

#### January 2022

26-27

##### World Tobacco Asia

Surabaya, Indonesia

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

#### February 2022

24-26

##### Agro Machinery Fertiliser and Seeds Expo

Dhaka, Bangladesh

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

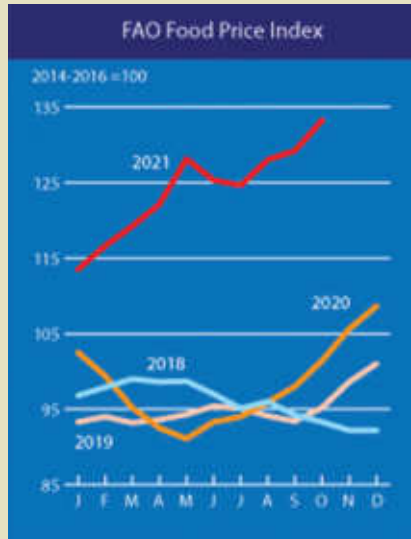
# FOOD OUTLOOK

THE FAO FOOD Price Index (FFPI) averaged 133.2 points in October 2021, up 3% from September and 31.3% from October 2020. After rising for three consecutive months, the FFPI in October stood at its highest level since July 2011. The latest month-on-month increase was primarily led by continued strength in the world prices of vegetable oils and cereals.

The FAO Cereal Price Index averaged 137.1 points in October, up 3.2% from September. International prices of all major cereals increased month-on-month. World wheat prices continued to surge for a fourth consecutive month, rising by a further 5 % in October. Global barley prices increased in October, underpinned by strong demand, reduced production and price increases in other markets.

International rice prices also increased in October, but main crop harvests in various Asian suppliers capped the increases.

The FAO Vegetable Oil Price Index averaged 184.8 points in October, up 9.6% and marking an all-time high. The increase was driven by firmer price quotations for palm, soy, sunflower and rapeseed oils. International palm oil prices increased in October, largely underpinned by concerns over subdued output in



Malaysia due to the migrant labour crisis. World prices of palm, soy and sunflower oils received support from reviving global import demand, particularly from India that lowered import tariffs further. Rising crude oil prices also lent support to vegetable oil values.

The FAO Dairy Price Index averaged 120.7 points in October, up 2.2% from September. In October, international prices for dairy products rose steeply for

the second consecutive month, underpinned by firm global import demand amid buyers' efforts to secure supplies to build stocks. Seasonally low milk supplies and tight inventories in Europe and a slower start anticipated to the new milk production season in Oceania also lent support to world milk prices.

The FAO Meat Price Index averaged 112.1 points in October, down 0.7% from its revised value in September. international quotations for pig meat fell, underpinned by reduced purchases from China. Poultry meat prices rose, boosted by high global demand. World ovine meat prices also increased on continued supply limitations from Oceania.

The FAO Sugar Price Index averaged 119.1 points in October, down 1.8 % from September. International sugar quotations remained, however, more than 40% above their levels in the same month of last year, mainly underpinned by concerns over reduced output in Brazil. The recent monthly decline in international sugar prices was triggered by limited global import demand, prospects of large export supplies from India and Thailand and the weakening of the Brazilian Real against the US dollar.

## AUGA introduces climate-friendly tractor

AUGA GROUP, ONE of the largest vertically integrated organic food companies in Europe, has introduced the world's first hybrid biomethane and electric tractor for professional farm use – AUGA M1.

The company's first step in offering technological solutions that will help eliminate climate pollution and foster sustainable agriculture.

According to Kęstutis Juščius, CEO of AUGA group, the new technology will help to create a new food production model on a global scale and reduce the environmental impact of agriculture.

## WEDA offers PVC pens in wooden look

ACCORDING TO WEDA Dammann and Westerkamp, there is an increasing demand for housing concepts that focus on the health and performance of animals, especially when new types of infectious diseases are spreading worldwide.

The company is one of the few manufacturers to offer hygienic pen walls and modules in a natural wooden look.

“Real wood has the disadvantage that dirt and bacteria settle in the fabric. With our new plastic boards in wooden look, on the other hand, the hygiene standards under ecological husbandry conditions can be achieved quite easily because nothing sticks after cleaning,” said Weda development manager Ralf Meyer.

The wooden look pen modules are aimed at combining the properties of both materials and are made easy to assemble.



*In pig farming, there is an increasing demand for housing concepts that focus on the health and performance of the animals.*

“Moreover, their surface is UV-resistant. This makes the material ideal for open stables with outdoor runs,” said Meyer and added that the additional costs associated with the installation are low.

Image Credit: WEDA Dammann and Westerkamp GmbH



## Barramundi Group and WWF Singapore sign partnership

BARRAMUNDI GROUP, AN end-to-end sustainable aquaculture company with ocean farms in Australia, Singapore and Brunei, has entered into a partnership with WWF-Singapore to conduct improvements to its Singapore farm sites in view of adding the Aquaculture Stewardship Council (ASC) standard to its list of accolades.

According to Barramundi, as part of this strategic engagement, WWF-Singapore will provide advice and guidance in terms of the implementation of the aquaculture improvement work plan, as well as mark out milestones to address gaps between current practices and the ASC standard. Throughout the work plan, WWF-Singapore is set to work closely with the Group to ensure transparent tracking of the farm's performance against the pre-established milestones.

The execution and delivery of the project will take place at the new grow-out



*Barramundi Group aims to be the first aquaculture company to be ASC-certified in Singapore.*

site between Lazarus and at St. John's Island, as well as at the farm's existing two sites in the south of Singapore.

In line with other international standards such as the Best Aquaculture Practices (BAP), the ASC certification is one of the hallmarks of the highest environmental and social sustainability standards for farmed seafood. Barramundi Group was the first

company to secure a 4-star BAP rating in both Australia (in 2016) and Singapore (in 2018). Both BAP and ASC certifications are widely trusted and recognised by discerning seafood consumers globally.

Andreas von Scholten, CEO of Barramundi Group said, "Our partnership with WWF-Singapore is only the beginning of a long-term relationship that could accelerate Singapore's journey to raising responsible seafood consumption. Further we believe that this exercise will allow us to upskill considerably and enable us to replicate and scale these best practices across our farm operations in Australia and Brunei as well."

R Raghunathan, CEO, WWF-Singapore, said that the collaboration is a critical milestone for their Responsible Seafood Action (REACT) programme, which aims to help Singapore develop into a global hub for responsible aquaculture production.

## Nutreco invests in Indian dairy-tech startup Stellapps

NUTRECO, A GLOBAL animal nutrition and aquaculture company based in the Netherlands has announced its investment in India's leading dairy-tech startup Stellapps to enable farmers to increase productivity and efficiency.



*Farmers with smaller herd sizes often face barriers when seeking to grow their businesses sustainably.*

The latest funding round is a significant step forward in enabling Stellapps' applications such as smartMoo and mooPay to solve challenges around the integration of modern technology into the high-volume dairy market. The technologies are farm to consumer dairy digitisation services and will aim to provide access to farmers access services such as farm improvement, cattle nutrition, credit and insurance and to help them capitalise on the growing market while improving their sustainable farming methods with digital payments. Stellapps plans to deploy the funds to rapidly scale up its traceability network and extend its digital footprint across India.

Ranjith Mukundan, CEO of Stellapps said, "We are on a mission to shift the Indian smallholder farmers into the agripreneur orbit by enhancing productivity, improving quality and enabling traceability through our smartMoo solutions."

In 2020, Stellapps was one of the two Indian companies featured in the list of technology pioneers by the World Economic Forum.

# RESPOWER

Special Respiratory Health Product

BOTANICALS TO CLEANSE & PRESERVE THE RESPIRATORY TRACT

# EURO LIVO

Liver & Kidney Tonic

PLANT EXTRACTS FOR IMPROVED LIVER PROTECTION

**EUROFEED** technologies  
info@eurofeed.it

[www.eurofeed.it](http://www.eurofeed.it)

# V-Connect Indonesia virtual event to aid feed-to-food sector



*The online event aims to be a melting pot of all sectors within the feed-to-food industry.*

Image Credit: Adobe Stock

Virtual events in the age of travel restrictions and limitations have continued to serve as a platform for businesses to connect with industry experts.

**V**NU ASIA PACIFIC (VNU), together with Permata Kreasi Media (PKM), has announced the virtual feed-to-food industry event for the ASIAN market called the 'V-Connect Indonesia Edition.' The event will be held on 24 and 25 November 2021, on the digital engagement platform, V-Connect.

The digital platform is developed by VIV and ILDEX team to enable in-person B2B networking and to provide a progressive web-based, smartphone-supported online ecosystem that aims to optimise the connection and business opportunities for ASEAN's feed-to-food industry participants.

The digital event will be held on the designated platform of the ILDEX Indonesia exhibition and the pre-event appointment is via the registration portal. The event aims to offer businesses a reliable, responsive and highly actionable platform to grow as the world continues to adapt and prosper, harnessing advanced technologies globally.

V-Connect Indonesia Edition is an experts' platform for ASEAN's feed-to-food sector to meet, network, and make deals, according to its organisers ILDEX Indonesia and Aquatica Asia team. Participants will be able to virtually meet with leading companies from livestock production, animal health and nutrition, breeding and genetics, feed mill, storage, hatchery and incubation, animal feed, farming and automated processing.

The event is also set to feature aquaculture businesses from local and international companies such as Japfa Comfeed Indonesia Tbk, Farmsco Feed

**V-Connect is an experts' platform for ASEAN's feed-to-food sector to meet, network and make deals.**

Indonesia, PT. Biochem Zusatzstoffe Indonesia, UPEC, Amandus Kahl, Mixtron, SKOV, Sonac, Clearwater, De Mark, Famsun+Huali, Hexie Group, Interheat, San Heh, Siam Water Flame and more.

#### Highlights of the platform includes:

- 360° virtual experiences with fast-track buttons to access needed services easily in one click.
- Beyond the platform with user-friendly features, it showcases a programme directory for the attendee's convenience.
- Participants can use filters to find the best exhibitions that match their business interests. One can also direct themselves to other areas (conference halls, lobby icons) with one simple click at the right panel.
- Participants can select their topics or speakers and add them to their calendar to experience the informative sessions with automatic reminders on email.
- Networking opportunities to contact and generate leads and business opportunities. ■

For more information, visit [www.v-connect-indonesia.net](http://www.v-connect-indonesia.net)



# The new paradigm of precision agriculture

The availability of economical, high-precision automated steering boosts the adoption of precision farming technology across all farm sizes, according to CHC Navigation.

**A**UTOMATED STEERING SYSTEMS have been widely deployed in countries with advanced economies and on large farms as a means to improve agricultural productivity. However, technological and price barriers have constrained a wider adoption. In addition, the Covid-19 pandemic has triggered awareness of the need to secure the food supply and relocate it closer to the final consumer. The decline in the availability of human resources in the agricultural sector is also a critical issue that accelerates the need for mechanisation in this industry.

Latest generation auto-steering systems allow farms of all sizes to access high-performance yet affordable retrofit kits to upgrade their old or new tractors in order to optimise their work efforts, reduce input costs and fuel consumption and achieve the following:

- Increase farm income because greater accuracy means fewer trips to the field, which reduces fuel, fertiliser and labour costs.
- Promote environmental stewardship by optimising tractor operation in the field and reducing soil compaction, which can make it more difficult for seedlings to emerge and limit water and nutrients in the soil.
- Operator efficiency and safety are improved as auto-steer systems eliminate steering work and allow them to focus on the tractor, implements and field.
- Increased production rates and reduced overlap improve crop yields with increased land-use rates and prevent crowding of plants competing for water and nutrients.



Image Credit: CHC Navigation

Automated steering retrofit kits aim to provide significant gains in crop yield.

## About CHC Navigation

CHC Navigation's Precision Agriculture division is one of the world's fastest-growing geomatics companies in recent years making significant strides toward the democratisation of automatic steering systems for farms of all sizes.

Powered by local, network or satellite RTK corrections, the GNSS+INS terrain compensation technology provides hands-free accuracy of  $\pm 2.5$  cm over any terrain. The advanced controller ensures centimetre

**“To support the rapid growth of its Agriculture Division, CHC Navigation offers dealership opportunities to precision farming professionals in several countries in the APAC region.”**

RTK accuracy in seconds, providing smooth auto steering and long-term repeatable accuracy.

According to CHC Navigation, in order to gain flexibility and not limit the use of the equipment to a single farm vehicle, the systems were designed according to users' requests to be easily moved from one tractor to another in less than 40 minutes as the farming season changes.

The company said that a special focus has been placed on the software user interface for controlling field operations. The software supports multiple guidance patterns to accommodate common field configurations in different parts of the world, including straight AB, A+, pivots, irregular curve and headland turn. It eliminates guidance errors and overlapping passes in the field.

Aimed at both experienced and novice users, the software also features real-time remote technical support from the local dealers' help desk. ■

For more information about CHC Navigation, visit [www.chcnav.com](http://www.chcnav.com)

# Disease prevention and management driving farm efficiency



Image Credit: Adobe Stock

*Livestock disease management and preventive practices have never been more important to secure the healthy functioning of the industry.*

Diseases among livestock carry a significant impact on farm production, profitability and ultimately hinder food security. Managing farm animals proactively helps in reducing the negative consequences the diseases may inflict on-farm productivity.

**LIVESTOCK INDUSTRY SYSTEMS** in most countries are affected by factors such as population growth and an increase in demand. Climate change is also an adversary which poses significant challenges in the mitigation of diseases spread across livestock. According to the International Fund for Agricultural Development (IFAD), increasing temperatures and adverse climate changes are direct contributors to an increased spread of both existing and new vector-borne diseases, macro-parasites and new transmission models.

The industry faces significant impacts due to diseases on variables such as animal welfare, productivity and profitability which inevitably impact human health and raise food security concerns.

Livestock disease management and preventive practices have never been more important to secure the healthy functioning of the industry. Technology has come to the

forefront in tackling the negative impacts caused by the diseases, mainly with developments in preventive measures in susceptible herds and post-infection control measures.

## Prevention through smart monitoring

Smart technologies for monitoring livestock enable the early detection of diseases, increase animal well-being and also help to reduce costs and labour. This is achieved through greater use of sensors, RFID chips, microphones and cameras. However, in some instances, the devices are subjected to

**With the use of modern technologies within the farming sector, it's possible to monitor livestock 24/7."**

extremely varying conditions, environments and mechanical abuse – especially when attached directly to livestock. In order to ensure a long service life, Wevo offers custom-made potting and encapsulation materials for the growing global market of intelligent monitoring solutions to reliably protect sensitive electric and electronic components.

Wevo-Chemie GmbH is an independent manufacturer of potting solutions, bonding and sealing compounds.

According to Wevo, with the use of modern technologies within the farming sector, it's possible to monitor livestock 24/7 and observe data sets relating to movement and activity, eating habits, body temperature or stress levels. This ensures and optimises productivity, product quality, fertility management, nutrition and feed, animal identification and catering to the animals' health and general well-being. As a less invasive method, more and more wearable devices are being brought to the market – among these, for example, are e-tags and smart tags.

Being attached directly to the livestock, these wearable applications pose extreme challenges to the materials used, as they are



exposed to changing climate, surface and ground conditions – hot or cold, wet or dry, or soiled stable surroundings.

**Achieving lower mortality**

Mortality through infections and diseases can be a major source of concern for livestock farms.

Sansoogol is one of the largest pig farms in South Korea and is known to achieve high rates of sow productivity, averaging more than 28 weaned pigs per sow per year.

According to Cargill, an animal nutrition and health solutions provider, despite this above-average sow productivity rate, the farm struggled with high mortality rates during the weaning season. Sansoogol

**“The growth rate and general health of post-wean pigs improved dramatically.”**



Image Credit: Adobe Stock

*Lower mortality equates to increased farm morale, better management and increased production rates.*

as a cultivator of antibiotic-free pork required a solution that aligned with its production quality standards. After a thorough evaluation, experts recommended a focus on high-quality young animal nutrition and a switch was made to Cargill’s Purina Neopigg products and the growth rate and livability of post-wean pigs improved dramatically, says Cargill.

The farm faced challenges with the ‘Porcine Reproductive and Respiratory Syndrome’ (PRRS) and these factors resulted in a mortality rate greater than

15% during the weeks preceding transfer to the grower/finisher contract farms.

The switch to the Purina Neopigg product also resulted in significant farm efficiency, relieving farm staff from managing mortality among the pigs and thus increasing farm morale, better management and increased production rates.

The Korean pig farm case further provides proof of the importance of nutrition and disease management to achieve farm sustainability and ultimately drive higher profitability. ■






**THE FIRST ALL-IN-ONE HANDHELD DEVICE FOR IM VACCINATION – SMART AND ACCURATE**

## EPIG® – NEEDLE-FREE IM INJECTOR

Dosage adjustable to 1 ml and 2 ml, vial sizes between 20 ml and 500 ml, compatible with most common intra-muscular vaccines

- Efficacy** – optimum vaccination results thanks to direct feedback on each injection from multicolored LED bars on each side of the device
- Simple** – no external power sources required – insert battery and go
- User-friendly** – easy set-up, maintenance and cleaning procedures for long service life and highest biosecurity standards
- Smart** – integrated Bluetooth enables the evaluation of vaccination data after use (EPIG® App required, available for iOS and Android)
- Sophisticated** – increasing vaccination quality and piglet welfare while reducing risk of cross-contamination and broken needles

For further information please contact: Henke-Sass, Wolf GmbH · Keltienstraße 1 · 78532 Tuttlingen · Germany · [www.henkesasswolf.de](http://www.henkesasswolf.de) · [info@henkesasswolf.de](mailto:info@henkesasswolf.de)





# Towards sustainable egg production

Jayasimha Nuggehalli, chief operating officer at Global Food Partners, explains the need to practice sustainable food practices at a global level.

## What is the importance of responsible practices for businesses to start cultivating at a production level?

Previously in food production practices, the focus was primarily on food security with the focal point being solving nutrition deficiency. This eventually led to problems like obesity and diabetes on one side and stunting, malnutrition on the other, largely contributed by economic inequality as well. That's where the concept of equitable consumption came in and the need to cultivate sustainability in food production. With this, an array of auxiliary problems like lack of animal welfare surfaced and with it came production practices against environmental safety, against biosecurity. However, now we see consumers more aware of their food purchase with importance given to foods coming from a sustainable source. The consumer and the producers must look beyond the issue of food security and it is important to note that we really need an equitable food production system and that's what GFP's aim is. We are here to create an equitable food production system for the region.

## How important is GFP's support to transitioning producers?

There has been a lot of work done by animal advocacy groups to get commitments to only source cage-free eggs. We at GFP believe that commitments are not enough and the support needed to actually fulfil them is equally important. We also believe that corporate change is a great way to set the tone right for the overall practice in the region. It is extremely important that the big corporations through CSR initiatives have the power to start setting examples for the right things to happen. Then there is a domino effect in the implementation of such programmes across the region which is why we focus on helping corporations realise their corporate commitments.

## What are the challenges faced by cage-free eggs in the retail market?

Companies have to look beyond



Jayasimha Nuggehalli, COO at Global Food Partners.

profitability to bring sustainability into the picture. There are multiple studies that show consumers reporting that the food tasted better when they learn that it comes from a sustainable source. One of the reasons why cage-free eggs costs higher is because it exists in a volume-based industry. As long as the volume is lower the cost is going to be higher. There is also the cost of preserving the brand identity of a cage-free company through the mainstream supply chain. So, we observe that there is a general increase in cost because of sustainability factors. However, a well-managed farm is able to reduce the cost of production by reduced damages and mortality. Therefore, consistency can result in higher volume and thus cage-free eggs can be equally competitive in the market. It seems that the companies that make sustainable commitments pay a little bit more but it doesn't necessarily have to be a high price affecting its profitability. In my perspective, we need to be looking for prospects in the long run and the practices involved in producing the cage-free egg for the future that GFP fully supports.

## Tell us about GFP's training programmes?

Capacity building is one of the major factors that lead to sustainability. GFP focuses on this very aspect and offers training for both buyers and producers.

Our buyer training modules are all online where one can understand how to implement cage-free sourcing policies, company practices, buying guides and knowledge of key terminologies. Through producer training modules we help them go from cage to cage-free or enhance their existing cage-free systems. While this is all online, we also understand the limitations of remote learning. Therefore, GFP is in the process of setting up two cage-free egg model farms, one in Indonesia and one in China in partnership with local universities with an aim to be an incubator for training centres. We are also developing an immersive virtual reality farm walkthrough. Overall we are developing a hybrid training setup with online modules, virtual reality and model farms.

## How did GFP manage the pandemic situation and tell us about your measures for the future?

Among our clientele, hospitality and food businesses were affected the most. Even though consumer packaged goods and retail chains continued to stay in business, we realised Covid-19 brought to the forefront the fragility of the supply chain and the fact that a lot of attention needs to be given to sustainability. We believe in paying attention to biosecurity to prevent the effects of the next possible pandemic. With the service industry being shut down, there was what seemed to be an expanded spending capacity among the consumers. With this money, consumers have spent on better quality groceries keeping in mind health and well being. For us, this has been an opportunity to spread the word on the importance of high-quality sustainable food products which is needed to meet the evolving demands of the market. Future-proofing of the supply chain means having better farm practices and having equitable consumption brought to the forefront. Companies are looking to future-proof themselves and adapt to these higher welfare production systems and GFP aims to be at the heart of it. ■



# Sprays of soluble zinc to boost production

Dr Terry Mabbett speaks about soluble zinc for improving rice yield and quality.

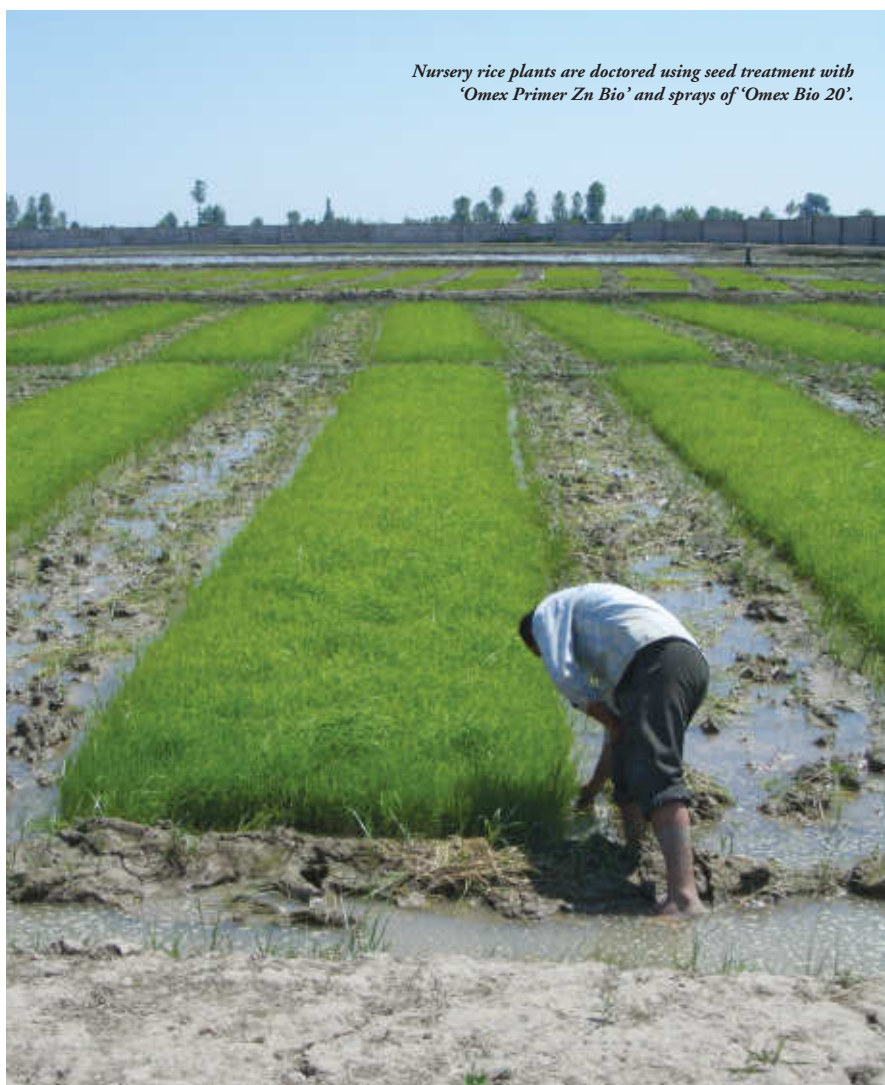
**Z**INC IS ONE of 17 essential plant nutrients and just one of seven classed as a micronutrient, although providing benefits out of all proportion to the trace amounts required by plants. However, the benefits do not stop with plant growth and development, because zinc is also one of the minerals required for the proper functioning of the human body and good health. Zinc operates at the cellular level in structural roles such as a constituent of living cell membranes and biochemical functions including co-factors for enzyme activity and electrolytes in homeostasis.

### Plant micronutrient profile for zinc in rice

Zinc is an essential trace element for normal growth and development in plants and animals including humans. Shortages of plant-available zinc reduce crop yields and rice grain quality to impact the health and well-being of rice-eating communities. Zinc is also considered to be an essential plant micronutrient that plays key functional roles as a constituent of cell organelles and a regulatory co-factor for a wide range of enzymes controlling important biochemical pathways. These are primarily concerned with:

- 1) Photosynthesis and polymerization of sugars into starch.
- 2) Synthesis of structural and enzyme proteins and control of enzyme function, all for rapid growth.
- 3) Production and regulation of plant auxin for normal growth and development.
- 4) Maintaining the integrity and selectivity of cell membranes
- 5) Formation of pollen grains.
- 6) Increasing plant resistance to infection by specific pathogens.

Zinc deficit impacts physiological function to disrupt normal plant growth and development. Rice crops respond to severe shortages of available zinc with a range of deficiency symptoms including



*Nursery rice plants are doctored using seed treatment with 'Omex Primer Zn Bio' and sprays of 'Omex Bio 20'.*

Image Credit: Omex

uneven stunted growth, brown blotching and streaking on lower leaves and spikelet sterility. Plants experiencing moderate or marginal zinc deficiency may respond with greatly reduced yield without displaying obvious visible symptoms. Without visible symptoms, such 'hidden', 'latent' or 'sub-clinical' deficiencies can persist for years unless detected by soil and/or plant analysis.

### The zinc link in rice

Rice grain is the natural cereal staple of Asia and one of the main sources and providers

of zinc within the human diet. Severe and chronic shortfalls of zinc in the human diet have severe and tragic consequences for growth, development and overall health. And none more so than in children where dietary deficiencies not only retard growth but may also disrupt optic development and function to cause acute eyesight defects.

Such is the importance of zinc for the production of high-quality food crops that the internationally acclaimed HarvestPlus programme (2004) recognised zinc along with iron (also a micronutrient) and beta-

carotene (Vitamin A) as the most limited and limiting nutritional factors in the human diet.

From this has evolved the concept of biofortification of food crops. In this context, rice is recognised as a key cereal staple with the potential to enable future planned improvements in the human diet, nutrition, health, and thus alleviate hunger, malnutrition and suffering for billions of the world's poorest people.

Restriction on the availability of zinc supplies to growing rice crops is not necessarily related to low natural levels of zinc in the soil, because zinc is actually the most commonly-occurring soil micronutrient. However, the poor inherent mobility of soil zinc coupled with a tendency for zinc to get locked up as insoluble zinc salts in alkaline (high pH) soils means bioavailability is the limiting factor for soil zinc as a plant nutrient.

Biofortification is a broad concept covering four options for elevating the zinc content of rice grain. Genetic biofortification via plant breeding, agronomic biofortification with soil-applied fertiliser and fortification of rice-based foods with zinc supplements are feasible but have limitations and drawbacks.

Breeding rice varieties to maximise the uptake of soluble zinc from the soil, incorporate it into grain tissue and

**Omex Complete Foliar Feed Programme for Rice**

Location/application	Timing/Growth stage	Treatment/Omex product/rate	
Seed dressing	Seed	Primer Zn Bio (3ml/kg)	
Nursery/spray	Seedling	Bio 20* (3 l/ha)	
Post-transplant/spray	Tillering	Bio 20* (1-2 l/ha)	Kingfol Zn (0.5 -1.0 l/ha)
Post-transplant/spray	Panicle initiation	CalMax* (2-4 l/ha)	Micromax* (1.0 l/ha)
Post-transplant/spray	Spike emergence	NK 60* (1.0-2.0 l/ha)	Boron 15* (0.5 l/ha)

\*Bio 20: NPK 20:20:20 with Magnesium (Mg) and trace elements

\*CalMax: Calcium (Ca) as CaO (22.5%) and Nitrogen (N) 15% with Mg and trace elements

\*Micromax: A comprehensive trace element profile plus Mg and Sulphur (S)

\*NK60: 39% K2O with 11% N

\*Boron 15: 15% Boron (B) chelated with ethanalamine

All percentages in the table and footnotes are w/v (weight/volume)

maintain high tissue concentrations through to harvest is an increasingly popular option, but if soil zinc exists in an insoluble form then rice roots cannot absorb it irrespective of rice genetics. Furthermore, farmers may be reluctant to plant these varieties especially if they are lower yielding and/or less disease-resistant compared with standard varieties of rice.

Adding more zinc to alkaline (high pH) soils simply compounds 'zinc lock up' and wastes resources. Fortification of rice-based foods may offer a useful last resort but goes against contemporary thinking and best practice on naturally produced and sourced food.

**The fourth dimension - foliar sprays of soluble zinc**

However, there is a fourth option which is the foliar spraying soluble zinc onto growing rice crops. Soluble zinc is absorbed

by the leaves to short-circuit any zinc lock-down problems that exist in the soil.

To find out more I spoke with Peter Prentis, managing director of Omex Agrifluids at the company's headquarters in England. Omex Agrifluids is an R&D based company that designs, develops and markets soluble nutrient products worldwide, and for use in the widest range of crops including rice. Peter Prentis has direct and hands-on responsibility for R&D, marketing and sales throughout Asia where the 'zinc link' to rice is clearly most crucial.

*Peter told Far Eastern Agriculture how Omex as a supporting company to the Global HarvestZinc Fertilizer Project supplied a range of soluble zinc fertilizers for application by foliar spraying to rice. "Our research and development department has been actively involved with*

Image Credit: Dr Terry Mabbett



*Mature rice paddy close to harvesting having benefited from targeted foliar feeding throughout crop growth and development.*



*'HarvestZinc' to increase zinc content of cereal grain," said Peter.*

He cited wheat research in Turkey which identified Omex Zinc applied as a foliar spray as the most effective route to wheat grain having sufficiently high zinc to maintain human health at the internationally mandated level. "Enhanced human zinc nutrition requires cereal grains to contain 40-60 mg zinc per kg whereas they normally contain 10-30 mg/kg" said Peter Prentis. Wheat plants treated with the standard 0.3% Zinc Sulphate recorded an increase of 12 mg/kg, while plants receiving Omex Zinc achieved almost double this figure at 21 mg/kg of wheat grain.

However, when it comes to rice-plant nutrition and fertilization zinc must not be considered in isolation but within a comprehensive and detailed programme and protocol for the complete foliar feeding of rice (Table 1). The Omex Complete Foliar Feed Programme, an integrated programme using Omex Primer Zn Bio, Omex Bio 20, Omex Kingfol Zn, Omex Micromax, Omex CalMax, Omex N60 and Omex Boron 15, has been tried and tested on rice crops around the world and on a wide range of rice varieties.

Field trials in the Middle East where the regionally important rice variety 'Taroum' was treated with Omex Bio 20 elevated rice grain yields by around 750 kg/ha. Accompanying positive, crop-plant responses in root mass density, stem number and height, as well as enhanced plant health were also achieved.

Omex CalMax as a foliar spray to rice crops in Peru, South America applied at the spike emergence stage and at a rate of 1.0 l/ha increased rice grain yield by 60%, while halving the incidence of split grains in the rice harvest.

Treatment of rice in Thailand with Omex CalMax at the tillering, booting and milky stages of rice plant development increased grain yield, reduced lodging and lessened the degree of aluminium toxicity shown by the rice plants.

Tissue analysis of rice leaves has clearly and repeatedly demonstrated the high efficacy and effectiveness of the Omex Complete Foliar Feed Programme for rice. Sampling and analysing flag leaves at the panicle initiation stage and again five days before grain harvest showed elevated levels of essential nutrients in the rice tissue. The net overall improvement achieved by using the Complete Foliar Feed Programme



Image Credit: Omex

*Foliar zinc applied at the right times ensures harvested rice grain is an excellent source of this trace mineral element which is so important for human health and nutrition.*

stands at an impressive 17% increase in rice grain yield.

#### Zinc products by Omex

Zinc deficiency in rice is frequently a 'latent' or hidden problem which means many growers lose yield without realising because symptoms of zinc deficiency are not apparent in the plant. Indeed there are well-documented cases of crops suffering yield reductions up to 20 per cent without deficiency symptoms being seen in the leaves.

Zinc nutrient goes to the very 'root' of rice plant nutrition, growth and development, and literally too because promoting and securing rapid and sustained root development is one of the primary functions of zinc. This means zinc must be readily available to rice at the germination and seedling establishment stages when plants put down those vital first roots into the nursery bed.

Follow up foliar sprays of soluble zinc are synchronised with the appropriate growth stages. This will ensure rapid and substantial uptake of soluble zinc by the leaves and its movement into developing rice grains during the reproductive part of the rice crop cycle. Soil-applied zinc may help to improve plant growth but it cannot reach the grain as rapidly or to the same level as zinc targeted at the plant in foliar sprays of soluble zinc.

I asked Peter Prentis about the Omex zinc products featuring in the company's

'complete foliar feed programme for rice'.

"We have two versatile products both high in zinc and which can be used in a variety of ways."

- 1) Primer Zn Bio, a high concentration suspension seed treatment containing 700g/l (70% w/v) Zn and formulated together with a natural biostimulant sourced from a specific marine alga (seaweed)
- 2) Kingfol Zn, a flowable foliar-applied nutrient product containing 700g/l (70% w/v) Zn. Zinc is in the form of zinc oxide (ZnO) formulated as small particles with enhancers to optimize zinc uptake by the rice leaves and plant nutritional performance over time.

Peter Prentis sums up the benefits of soluble zinc as a seed dressing and in foliar sprays at key growth stages of the rice plant in the route to biofortification. "Results from over 40 field trials across eight countries show how Omex Zinc products provide significant increases (5%) in grain yields for the main cereal crops (rice, wheat and maize). What's more, there are equivalent benefits in harvest quality with zinc concentration in grain elevated by as much as 60%," says Peter Prentis.

After 24 months of field trials comparing the range of zinc fertilisers and treatments the Global HarvestZinc Fertiliser programme concluded, "Foliar-applied zinc is superior to soil-applied zinc in raising the concentration of zinc in brown rice and cereal grains in general." ■

# Fish farming technologies: what lies in the future?

Asia is the home of aquaculture and the continent reserves the bulk of the fish trade on the global stage, according to the Food and Agriculture Organization (FAO).

**T**HE GLOBAL AQUACULTURE market is expected to reach US\$14.79 bn by the end of 2021, at a CAGR of 6.63% to reach US\$20.46 bn by 2026, according to marketresearch.com.

Food and Agriculture Organisation (FAO) calls Asia the 'home of aquaculture' and suggests that the continent reserves the bulk of the fish trade on the global stage. 'Aquafeeds' is an exponential part of the industry, responsible for growth of the trade. The Asia-Pacific aquafeed market is projected to witness a CAGR of 0.5% during the forecast period from 2020-2025. Increased consumption of fish and rising global demand is the major driver behind the growth of the Asia-Pacific Aquafeed market, says a Mordor Intelligence report.

Although aquaculture has been practised in Asia for centuries, it was only in recent years that great advances were made towards technologies and innovations that complement the rising demand the industry has to cope with. Aquaculture has steadily risen to become one of the top contributors to Asian economies, and strides in developing new techniques are looking to solve the challenge of achieving food security.

## Fish farming with IoT

SAT launched its first Smart Floating Fish Farm in February 2020. Unlike traditional fish farms, the solution is scalable and is equipped with a 'Recirculating Aquaculture System' (RAS) – a closed system that creates a controlled environment through a multi-level water treatment process. In addition, the farm integrates a high degree of automation, an efficient solar energy management solution, self-regulated control cycles and artificial intelligence within a



Image Credit: Adobe Stock

*Increased consumption and rising global demands holds bright prospects for aquaculture in Asia.*

Farm Management Information System to achieve a productive, scalable and environmentally friendly operation.

Siemens Digital Industries has implemented an end-to-end digital solution for the smart farm, which includes totally integrated automation with smart sensors and connectivity to the IoT operating system MindSphere comprises a dedicated application that helps to monitor operations and process data across a secure network.

The Siemens application functions via a cloud-based IoT operating system. It connects products, plants, systems and machines, enabling fish farms to harness data with advanced analytics. In addition, the system aims to give access to a growing number of apps and a dynamic development ecosystem. Siemens has also signed a collaboration agreement with SAT, ensuring further enhancements to the

**▲ Aquaculture has steadily risen to be one of the top contributors to Asian economies."**

technology solutions for the region and the industry.

## Achieving profitability with technology

Advances in Aquaculture has meant a downpour of investments backing innovation, especially for ideas involved in solving steps for companies to achieve profitability. One such startup from Indonesia, DELOS, has come up with a software that forecasts and provides recommended actions that aids in better decision making. The company aims to provide sensible solutions for shrimp farms to achieve a higher rate of productivity and increase profits through the means of its application.

According to the company, the application specialises in pond management which boosts productivity by 50-150%. The software aims to provide critical information for companies with the help of an expert backend team adept in aquaculture, marine biology, technology and business.

DELOS' goal to solve problems of scalability in aquaculture also aligns with the Indonesian government's agenda to double the industry size in the near future while also maintaining commitments given to achieve this while maintaining social and environmental sustainability. ■



# Progress in needle-free vaccinations

Animal welfare and improved vaccination practices are moving into the spotlight, while new technologies and systems allow collecting treatment information and data in an easy and secure manner. EPIG combines the best of both worlds, says Henke-Sass, Wolf.

**HENKE-SASS, WOLF IS** a developer of instruments and products for practical medicine since 1921. The company specialises in technologies in relation to medical endoscopy, veterinary, syringes, dental and micro-optics.

Needle-free injection technologies can be used to administer vaccines and medications in the livestock industry in a fast, safe and effective manner. The application is safe for both animals and workers, while also supporting animal welfare. At the same time, needle-free vaccination is highly accurate

and efficient and cross-contamination has never been so successfully prevented according to Henke-Sass, Wolf.

The company's newest innovation is the EPIG, an all-in-one handheld needle-free device for intramuscular vaccination. The device promises accurate vaccination results with the help of direct feedback on each injection from multicoloured LED bars on each side of the device. The integrated sensor control detecting and reporting air inside the liquid circuit ensures high dosing accuracy. The device is battery powered and features an easy set-up, maintenance and cleaning procedure for long service life and high biosecurity standards.

The company says that the robust medical-grade components used in the device's design ensure dust and water tightness with a splash water resistance rating of IP54. Dosages are adjustable from one ml to two ml with vial sizes between 20 ml and 500 ml and is compatible with most common intramuscular vaccines.

### HSW EPIG mobile application

The integrated Bluetooth on the device enables evaluation of vaccination data after use through the EPIG app available for iOS and Android. According to the company's customer feedback records, one of the most useful features of EPIG is the user interface

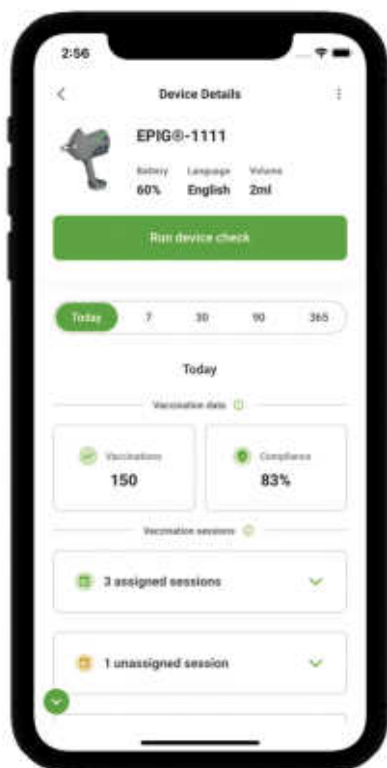
**Needle-free vaccination is highly accurate and efficient and cross-contamination has never been so successfully prevented."**



Image Credit: Henke-Sass, Wolf

*Robust medical-grade components ensure dust and splash water tightness with resistance rated to IP54.*

Image Credit: Henke-Sass, Wolf



*The application is also able to provide vaccination reports and indicate its quality by measuring its effectiveness.*

making the application intuitive and easy to set up.

A large number of tech companies are working on the digital front, making farming applications compatible with various sensing and monitoring technologies, with their usage becoming the norm in daily farm life. In addition, stakeholders in today's livestock industry are triggering a clear need to measure, track, trace, report and analyse medical treatments. Taking up those needs, Henke Sass Wolf's EPIG device and the complimenting app enables the user to gather information such as treatment location, type of animals, type of product administered, dosage of products and even the details of personnel carrying out injection administration.

Furthermore, the EPIG application is also able to provide vaccination reports, thus simplifying documentation further and indicating vaccination quality, measuring its effectiveness.

Henke Sass Wolf's long-term vision for its software solutions is to build a bridge to available smart farming solutions and to help provide all necessary data in one single location, thus improving efficiency at the farm level. ■

## Taiwan to build on food and pharma technology

FOODTECH TAIPEI AND Bio Pharmatech Taiwan 2021 are all set to focus on food technology and allied equipment services across the Asia-Pacific region. The event is to be held from 22-25 December 2021 at the Taipei Nangang Exhibition Center Hall, Nangang District, Taipei City.

The exhibition is being organised by the Foreign Trade Development Association of the Republic of China, the Taiwan Food and Pharmaceutical Machinery Industry Association.

Exhibition is organised in collaboration with the Taiwan External Trade Development Council (TAITRA). The event is set to concurrently host the Food Taipei (Taipei International Food Show), Taipei Pack (Taipei International Packaging Industry Show) and Horeca (Taiwan International Hotel and Catering Equipment Exhibition).

TAITRA was founded in 1970, and is Taiwan's foremost nonprofit trade promoting organisation. Sponsored by the government and industry organisations, TAITRA assists enterprises to expand their global reach. Through shows like Foodtech and Bio Pharmatech, TAITRA aims to to



Image Credit: Adobe Stock

*The event is said to assist Taiwanese businesses in food and pharma tech to connect with international firms.*

assist Taiwanese businesses to scale-up business across the Asia Pacific and connect international firms with Taiwanese partners.

The exhibitor profile for the event will feature processing equipment and machinery for agriculture, fishery and livestock product processing machinery, food processing, drinking water, waste treatment and disinfection equipment, agricultural biotechnology, biotechnology

processing/pharmaceutical (agent) technical analysis and testing, refrigerated storage, logistics and transportation, whole food factory manufacturing and more.

The event is said to assist Taiwanese businesses in food and pharma tech to connect with international firms.

*For more information and registration visit [www.foodtech.com.tw](http://www.foodtech.com.tw)*

## Aquaculture and seafood commerce in focus at World Seafood Shanghai 2021

WORLD SEAFOOD SHANGHAI is a global aquatic product trade event and caters to the industries related to aquatic products and the catering market. The event is held from 15-17 December 2021, at the National Exhibition and Convention Center, Shanghai, China.

According to World Seafood Shanghai the previous edition of the event was held over three days in collaboration with Aige Food Shanghai and gathered 1,273 exhibitors from 14 countries, with an exhibition area of 80,000 sq m, attracting 46,733 professional visitors from 62 countries,

The expo is one of the leading aquatic trade events in China and has been a platform for trade buyers in overseas markets and overseas companies to expand into the Chinese market for 15 years. The trade show features companies from industries such as aquatic products, processed aquatic products, preservation technology, aquaculture technology, aquatic feed and drug and fishing tools technology.

According to the organisers, on-site activities focus on industry hotspots, industry special forums, imported seafood recommendation tastings, business matching sessions and other events throughout the event. Through comprehensive and in-depth exchanges, the event



Image Credit: Adobe Stock

*The event aims to provide a wider platform for building business relationships and realising trade opportunities.*

aims to provide a wider platform for building business relationships and realising trade opportunities.

The event is being organised by ITE Asia Exhibitions, Shanghai Gehua Exhibition Planning, China Aquatic Production Chamber of Commerce and Shanghai Fisheries Trade Association.

*For more information and registrations visit [www.worldseafoodshanghai.com](http://www.worldseafoodshanghai.com)*



## Agri Asia to boost agriculture technologies in the subcontinent

AGRI ASIA 2021 is in its 10th edition and the international exhibition-cum-conference on agriculture technologies will be held from 9-11 December 2021 at the Helipad Exhibition Centre, Gandhinagar, India.

Agri Asia was introduced in the year 2011 and serves as a platform for bringing together foreign as well as national visitors to interact and deal with the leading international agricultural technology companies.

The event aims to cover all aspects of the agricultural industry and has been popular among stakeholders and farmers from almost every state who are in attendance every year. It also offers networking opportunities with many groups like high ranking agriculture officials to identify and explore business as well as investment opportunities across India. Concurrently Dairy Livestock and poultry Expo Asia and Grainmach Asia will also take place along with Agri Asia 2021.

Exhibitors profile in the event includes Agricultural equipment machinery, food processing, aquaculture, biotechnology, fertilisers, organic agriculture, greenhouses, plant protection, livestock, dairy farming, precision agriculture, poultry and many other facets within the industry. The previous edition of Agri Asia also featured an



Image Credit: Agri Asia

*The event aids in networking and investment opportunities across agriculture in India.*

organic pavilion, farm visits for farmers from Africa, technology display and launches as well as joint venture declaration.

This year's event will feature 200 exhibitors from 10 countries in 350 booths with an attendance expected to cross 125,000 visitors. The event will also let visitors and participants pre-schedule meetings with stakeholders and business heads, through their dedicated online portal.

*For more information and registration visit [www.agriasia.in](http://www.agriasia.in)*

# AGRI TECHNICA®

THE WORLD'S NO. 1

## 2022

27 FEBRUARY – 5 MARCH, HANOVER, GERMANY  
PREVIEW DAYS 27T/28 FEBRUARY

FROM NOVEMBER 2021

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

## SYSTEMS & COMPONENTS®

THE MEETING PLACE FOR THE SUPPLY INDUSTRY –  
A B2B PLATFORM FOR THE AGRICULTURAL MACHINERY SECTOR

- More than 550 international exhibitors
- 100.000 visitors
- High-level technical programme
- Synergies with AGRITECHNICA –  
The world's no. 1 platform for agricultural machinery

SAFE & EASY

A part of AGRITECHNICA

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

MADE BY

*Agriculture impacts a major segment of the population in Vietnam.*

Image Credit: Adobe Stock

# Agricultural development through leadership training

According to Statista, agriculture in Vietnam is the largest employer in the country. The country looks to further develop its largest contributing industry through collaborative efforts and ACIAR's research programmes in place across Asia help to further the cause.

**A**USTRALIAN CENTRE FOR International Agricultural Research (ACIAR) is an Australian government statutory authority that operates within the portfolio of the department of foreign affairs and trade. The centre is known for its approach to capacity building in agricultural development through focus on advancements of long-term partnerships with institutions and individuals.

Since 1982, ACIAR has supported research projects across Africa, Asia and the general Pacific region. The projects focus on agribusiness, climate change, crops, fisheries, forestry, horticulture, livestock systems, social systems, soil and land management and water aimed at delivering specific development outcomes.

One such programme brings ACIAR to Vietnam, to aid development in Vietnamese agriculture through the John Dillon Fellowship (JDF). The fellowship was established in 2002 in recognition of Professor John L Dillon's life-long commitment to agricultural research and is one of the flagship fellowship programs of the ACIAR.

The John Dillon Fellowship Vietnam 2021 has been jointly curated by ACIAR

and the Ministry of agriculture and rural development (MARD), Vietnam. The programme is the result of the ACIAR-Vietnam 10-year research collaboration which is said to continue the 28-year collaborative relationship between MARD and ACIAR.

According to ACIAR, 19 Vietnamese agricultural scientists and researchers have commenced training for the prestigious John Dillon Fellowship. Supported by ACIAR, the programme progresses the careers of researchers working in agricultural development by enhancing their leadership and management skills.

The commencement followed an online launch, and the 2021 JDF marks the first time the fellowship will have an entirely Vietnamese cohort.

Australian Ambassador to Vietnam, Robyn Mudie, said, "Agriculture has been a

**■ Agriculture has been a key part of Australia's cooperation with Vietnam."**

key part of Australia's cooperation with Vietnam since the two countries established diplomatic relations in 1973. The ACIAR program places capacity building of individuals and organisations to perform agricultural research effectively at the heart of our bilateral cooperation for agricultural development."

The latest rendition of the JDF program in Vietnam follows a similar delivery of the fellowship in the Philippines earlier in 2021, with ACIAR evolving the program to focus on individual countries in response to the COVID-19 pandemic.

ACIAR general manager for outreach and capacity building, Eleanor Dean, said, "ACIAR responded to the global pandemic swiftly, and we're proud to be supporting this newly designed fellowship in 2021 that builds upon the program's past success. We're able to do this thanks to the close collaboration with our in-country partners."

Partnerships and collaborations play a crucial part in sustained development of any industry. As the world pledges to achieve food security for future generations through technology, collaborative efforts between nations play a major role in capacity building. According to ACIAR, it has commissioned and managed more than 1,500 research projects in 36 countries, partnering with 150 institutions along with more than 50 Australian research organisations. ■



## CLAAS JAGUAR 900 forage harvesters get new features

THE FORAGE HARVESTERS of the JAGUAR 900 model series now have a slew of new features associated with the feeder unit, the corncracker, and the silage additive dosing system. Further new developments are also available for the ORBIS and PICK UP front attachments.

The most significant new development for the JAGUAR 900 model series is the expansion of the options for the front attachment drive. In addition to the all-mechanical drive and the variable drive for the PICK UP grass and ORBIS maize headers, it is now possible for customers to specify a twin hydraulic drive which offers particular benefits when working with the PICK UP.

With this option, the intake auger continues to be driven via the quick-release coupler, and can adjust its speed in accordance with the length of cut; the pick-up reel, however, is provided with an all-new hydraulic drive which allows it to be driven with variable speed adjustment independently of the intake auger.

Once the data has been entered, the operator can implement the recommended settings using the CEBIS terminal. The first decision in the course of this process is whether the silage additive should be dosed from the ACTISILER 37 tank or from the large 375 l water tank. The operator can also decide whether the dosing is to be



*The new silage additive app helps in precision dosing and water injection at up to 800 l/h.*

Image Credit: CLAAS

performed in l/t or in l/h. The key data can be adjusted at any point while chopping is underway. The app is available for Android and Apple via CLAAS connect.

Important advantages associated with this functionality include efficient raking action at all ground speeds with extremely low wear; if the ground speed or the set length of cut is changed, the rotational speeds of the auger and reel are adjusted automatically to the prevailing conditions. If necessary, both speeds can be adjusted to the requirements of the harvesting situation manually by the operator from the cab.

## Pöttinger launches new plough series: Servo 6000

PÖTTINGER, AN AGRICULTURE equipment and agri-tech manufacturer based in Austria, has unveiled its new plough series, the Servo T 6000.

According to the company, the Servo T 6000 is the result of many years of ploughing experience and intensive development work. The main beam section and the NOVA stone protection system have been revised from the ground up to optimise reliability.

The new semi-mounted ploughs are offered as standard and 'Plus' versions (six to nine furrows) as well as 'Nova' and 'Plus Nova' versions (six to eight furrows). Nova and Plus Nova ploughs feature hydraulic stone protection with an adjustable triggering pressure of up to 2200 kg to prevent damage to the plough and enable ploughing without interruption. The new series is available with a point-to-point spacing of 102 cm and an underframe clearance of 80 cm, or 90 cm as an option.

Pöttinger said the traction control system on the Servo T 6000 actively transfers weight from the plough to the tractor. This means that up to 1,100 kg more load can be applied to the rear wheels while allowing the plough to track the ground perfectly.

As a result, wheel slip is minimised and fuel consumption is reduced by up to 3.5 litres per ha. In addition, harmful smearing of the rear wheels is reduced and the soil is conserved. Additional ballasting of the rear axle is not required and front ballast is sufficient because the weight of the plough is transmitted so that the rear tractor wheels are under constant load. The new Servo T 6000 has fewer greasing points which are said to be accessible to minimise maintenance requirements. In addition, all reversible points are 'DURASTAR' quality as standard.

Pöttinger said that it has adapted and optimised the geometry of the new Servo T 6000 to precisely match the dimensions of new



*Pöttinger has adapted and optimised the geometry of the new Servo T 6000 to precisely match the dimensions of new tractors.*

Image Credit: Pöttinger

tractors. The semi-mounted plough is attached to the tractor using double-sided linkage lugs. This configuration covers every possible geometry of the mounting system. A long drawbar provides more space for turning manoeuvres and narrow entrances.

The settings that need to be made on the new semi-mounted plough can be made easily and intuitively in just a few steps. The triggering pressure of the Nova stone protection system can be conveniently changed using a spool valve on the tractor.

The plough beam has been engineered to absorb the loads acting on it during operation even better. In addition, the newly designed construction protects all bearing points and mounted components.

**Klinofeed®**  
Five in one multifunctional feed additive  
The best choice for economic feed production

- Mycotoxin Binder**  
Broad spectrum binding effect
- Ammonium Remover**  
Absorbs ammonium ions in intestinal tract
- Pellet Quality Improver**  
Improves the PQI
- Anticaking Agent**  
Improves the flow of feed
- Improving Digestion**  
Supports intestinal flora

**unipoint ag**  
info@unipoint.ch  
+41 52 305 20 41

**GMP+**

## FMC mobile application to aid agriculture advancements

FMC CORPORATION, AN American agricultural sciences and chemical manufacturing company announced the launch of its farmer mobile application 'Sobat Jempolan' in Indonesia.

According to FMC, the app enables farmers to find solutions to their crop challenges, nutrition needs and offers useful information about the optimal dosage of crop protection products, helping farmers grow food more efficiently. It is also said to help farmers locate the nearest authorised farming equipment retailers, product prices and guidelines on judicious usage of products. As part of the future updates for the app, FMC Indonesia aims to include features such as WhatsApp messaging for farmers to communicate with its support centre and to participate in promotional activities. The Sobat Jempolan app is now available for download from the iOS and Android app stores.

**ADVERTISE HERE!**

For details of advertising in the classified section please contact:

LONDON OFFICE:

University House, 11-13 Lower Grosvenor Place, London SW1W 0EX, UK

Tel: +44 (0) 20 7834 7676 Fax: +44 (0) 20 7973 0076

E-mail: post@alaincharles.com Web: www.alaincharles.com



## Reader Information Service

Issue 6 2021

This is a free service, readers who wish to receive urgently further information about any product or company featured in the magazine, please complete this form and fax to: Far Eastern Agriculture on +44 (0) 20 7973 0076

or e-mail to: feag@alaincharles.com

or post to: Far Eastern Agriculture, University House, 11-13 Lower Grosvenor Place, London, SW1W 0EX, United Kingdom.

Name of product and/or company	Page No.

Name: .....

Job title: .....

Company: .....

Address: .....

.....

.....

Tel: ..... Fax: .....

Your organization's product/service: .....

.....

.....

.....

.....

Number of employees in your organization: .....

Signature: ..... Date: .....

## Subscription form

I wish to subscribe to Far Eastern Agriculture for 1 year (6 issues) starting with the next copy.

<b>Surface Rates:</b>	<b>1 year:</b>	£57	US\$111	Euro €93
	<b>2 years:</b>	£97	US\$189	Euro €158
	<b>3 years:</b>	£129	US\$251	Euro €210

Enclosed is my cheque/draft for .....  
(Cheques made payable to Alain Charles Publishing Ltd)

Please invoice

Please charge to Visa/American Express/Mastercard (please circle)

Card number

Expiry Date   /

(please note we debit your account in sterling)

Name .....

Position .....

Organization .....

Address .....

Country .....

E-mail .....

Signed ..... Date .....

Send this form together with your remittance to:  
Far Eastern Agriculture, University House, 11-13 Lower Grosvenor Place, London, SW1W 0EX, UK. Tel: +44 (0) 20 7834 7676 Fax: +44 (0) 20 7973 0076

Subscription order can also be made via the Internet: www.alaincharles.com or email at feag@alaincharles.com

Please TICK most relevant box		4. Type of produce	
<input type="checkbox"/> 01 Government: municipal services, diplomatic, (UN, International Agencies)	<input type="checkbox"/> 02 Grain	<input type="checkbox"/> 11 Feedstuffs	<input type="checkbox"/> 12 Groundnuts
<input type="checkbox"/> 03 Educational/Research Institutes	<input type="checkbox"/> 03 Fruit	<input type="checkbox"/> 13 Vegetables	<input type="checkbox"/> 14 Cassava
<input type="checkbox"/> 06 Commercial Services: banking, finance, insurance	<input type="checkbox"/> 04 Cocoa	<input type="checkbox"/> 15 Dairy Cattle	<input type="checkbox"/> 16 Beef Cattle
<input type="checkbox"/> 08 Import/Export Agents and Distributors	<input type="checkbox"/> 05 Coffee	<input type="checkbox"/> 17 Sheep/Goats	<input type="checkbox"/> 18 Pigs
<input type="checkbox"/> 09 Farms and Plantations	<input type="checkbox"/> 06 Cotton	<input type="checkbox"/> 19 Poultry	<input type="checkbox"/> 20 Fisheries
<input type="checkbox"/> 11 Food Processing: poultry, dairy, cereal, fruit, vegetables, etc	<input type="checkbox"/> 07 Rubber		
<input type="checkbox"/> 12 Aid Organizations	<input type="checkbox"/> 08 Palm Oil		
<input type="checkbox"/> 13 Agricultural Equipment and Material Manufacturers: irrigation, agro-chemicals	<input type="checkbox"/> 09 Palm Kernels		
<input type="checkbox"/> 16 Others: please specify:	<input type="checkbox"/> 10 Sugar Cane		



# Investing in sustainable food-tech for Asia

Temasek establishes the Asia Sustainable Foods Platform to accelerate the commercialisation and availability of sustainable foods in Asia.

**W**ITH MORE THAN half the population of the world living in Asia, the continent is always seen as a driving force behind the need for sustainable food production. With the demand for consumption and commodities rising, the Asia Sustainable Foods Platform aims to alleviate "friction-to-adoption" by providing solutions and support to food-tech companies at every stage of their growth cycle.

Temasek, an investment company based in Singapore, has announced the launch of the Asia Sustainable Foods Platform to focus on addressing the challenges of scaling up the production of alternative proteins, as well as accelerating the growth of sustainable foods in Asia.

The platform aims to provide solutions and support, as an enabler, operator and investor, to food-tech companies as they go through their life cycle from product development to commercial scale-up.

The platform will look to provide research and development advisory and

pilot-scale manufacturing facilities to support food-tech businesses accelerate their product commercialisation. As an operator, it will provide manufacturing capabilities, along with market insights into commercialisation opportunities to support scaling up across Asia and as an investor, it will also aim to provide businesses with a network of strategic connections and allocate capital to promising food-tech start-ups.

"Asia is expected to require around US\$1.55tn of investment over the next decade to satisfy growing consumer demands for healthier and more sustainable

**|| We need to evolve our current capabilities to bolster food security and strengthen supply chains."**

food options. We need to evolve our current capabilities to bolster food security and strengthen supply chains," said Yeoh Keat Chuan, deputy head, Enterprise Development Group at Temasek.

The platform said that it is exploring two joint ventures with global industry experts in plant-based and microbial proteins. A partnership with Cremer, a German agri-food multinational with expertise in plant-based protein, through a joint venture company, will augment the platform's manufacturing capabilities for plant-based protein products.

The platform has also signed an agreement with ADM, a global leader in nutrition, that will enable contract development and manufacturing services for microbial proteins produced via precision fermentation. ADM's global reach and innovative fermentation-based expertise will help enable smaller existing food-tech companies to efficiently scale their fermentation innovations through to the pilot scale. ■



Image Credit: Adobe Stock

*The platform will look to provide research and development advisory and pilot-scale manufacturing facilities to support food-tech businesses accelerate their product commercialisation.*

# pak tavuk®

1955

broiler hatching eggs  
broiler day old chicks  
since 1955



[www.paktavuk.com.tr](http://www.paktavuk.com.tr)  
[mert@paktavuk.com.tr](mailto:mert@paktavuk.com.tr)  
+ (90) 532 346 23 46