www.fareasternagriculture.com

Far Eastern Agriculture

US$15.00 (UK£9.00)

VOLUME 39 ISSUE 1 2021

How to tackle feed passage syndrome

Crops:
Rising demand for organic food

Equipment:
Rolling out smart planting solutions

Technology:
How technology is shaping agriculture

China International Fertiliser Show preview - p7

Poultry Buyers' Guide 2021

Far Eastern Agriculture

Why should you choose
www.fareasternagriculture.com ?

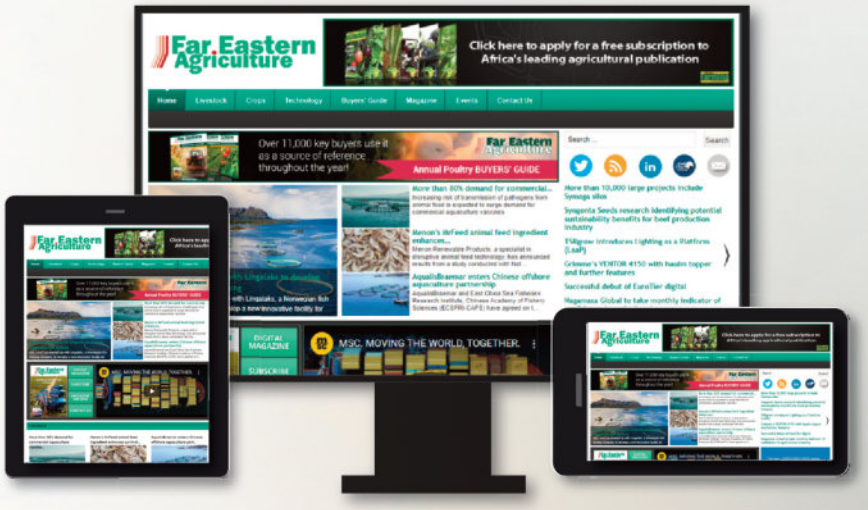
Full range
with commercial options for print magazine, website, e-newsletters and solus emails

Advertising
on www.fareasternagriculture.com is fast, flexible and trackable

Drive
targeted traffic to your website and increase conversions

Promote
to your specific target market

Re-engage
previous leads with retargeting ads



The region's leading broad-based agribusiness publication has been putting sellers in touch with buyers for more than two decades.

Maximise your ROI by striking a balance between authoritative editorial and your advertising message by promoting your products and solutions on

Alain Charles Publishing

MENA	Tel: +971 4 448 9260
ASIA	Tel: +91 98800 75908
USA	Tel: +1 203 226 2882
EUROPE	Tel: +44 20 7834 7676

e-mail: comms@fareasternagriculture.com
web: www.alaincharles.com
www.fareasternagriculture.com

CONTENTS

Far Eastern Agriculture

Cover Image : mch67/Adobe Stock

Editor: Nonalynka Nongrum
Email: nonalynka.nongrum@alaincharles.com
Editorial and Design team:
Mariam Ahmad, Prashanth AP, Fyna Ashwath
Miriam Brtkova, Praveen CP, Manoj Kumar K
Unique Pattnaik, Abhishek Paul, Samantha Payne
Rahul Puthenveedu, Deblina Roy, Vinita Tiwari
and Louise Waters
Publisher: Nick Fordham
Magazine Manager:
Richard Rozelaar, Tel: +44 207 834 7676
Email: richard.rozelaar@alaincharles.co

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

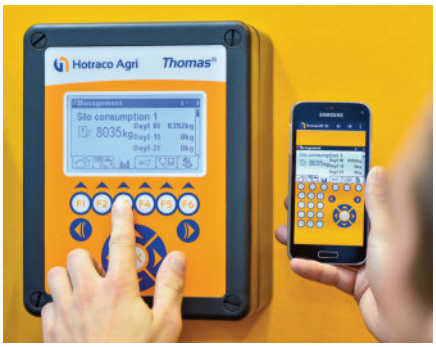
Middle East Regional Office:
Alain Charles Middle East FZ-LLC
Office L2- 112, Loft Office 2, Entrance B, PO Box 502207
Dubai Media City, UAE
Phone: +971 4 448 9260 **Fax:** +971 4 448 9261

Production: Srinidhi Chikkars, Swati Gupta and
Nelly Mendes
Email: production@alaincharles.com
Subscriptions: circulation@alaincharles.com
Chairman: Derek Fordham
Printed by: Buxton Press
Printed in: February 2021
Far Eastern Agriculture
(ISSN 0266-8025)

Alain Charles Publishing
Serving the world of business

BULLETIN

AGENDA



POULTRY

CROPS

LIVESTOCK

EQUIPMENT

Advertisers Index

AGCO launches studies on cover crops management

AGCO AGRONOMISTS TO determine best practices for regenerative agriculture to optimise soil health and carbon capture.

AGCO, a specialist in the design, manufacture and distribution of agricultural machinery and solutions, is conducting agronomic research trials and field demonstrations in 2021 to help farmers successfully add soil carbon sequestration to their farming operations

The rapidly evolving carbon credit market is a potential revenue channel for farmers in which they can also contribute to the solution for climate change alongside feeding the world's growing population.

Image credit: AGCO

The studies focus on best practices for cover crop planting timing.

"Carbon sequestration's revenue potential for farmers through carbon credits incentivises adoption, investment, and innovation for the betterment of our climate," said Louisa Parker-Smith, AGCO's global sustainability director. "With half of the earth's vegetated land employed in agriculture and abundant soil carbon sequestration potential, it's understandable that the Ag supply potential is over 30 times today's total credit demand. However, we expect to see carbon-offset credit demand increase exponentially as surrounding markets mature and companies such as Apple and BP work towards self-imposed climate neutrality deadlines."

Australian horticulture grower reduces bird presence by up to 90%

GAZZOLA FARMS LOCATED in Melbourne, Australia, has deployed the laser bird deterrent in 2018 to effectively solve bird damage to their celery and lettuce crops. They experienced a significant 90% bird reduction on their farm.

Image credit: Bird Control Group

The AVIX Autonomic Mark II is a fully automated laser bird deterrent device.

Gazzola Farms is one of the leading vegetable growing operations in Australia. They focus on providing a variety of lettuce, celery, and Asian greens to sell across Australia. Based on Victoria's Mornington Peninsula, Gazzola Farms harvests their crops all year round, which in turn invites intruders onto the farm. The most problematic uninvited guests are wood ducks.

Currently, Dean Gazzola and his brother Alex Gazzola manage more than 500 acres in Boneo, Victoria. With the large potential crop yield, the threat of wood ducks increased and they would frequently find 20-30 ducks per field, with the lettuce and celery destroyed. This meant that overnight Gazzola Farms would lose a couple of hundred dollars worth of lettuce as a consequence of ducks foraging. As a result of the severe damage to their crops by the wood ducks, they began the search for a cost and time-effective solution. The limitations of the traditional bird control methods were not appealing to Gazzola Farms.

The AVIX Autonomic Mark II is a fully-automated laser bird-deterrent device. The essence of the solution lies in the projection of a laser beam that effectively spooks birds without hurting them. As the green laser beam moves towards the birds they disperse from the area within seconds. According to AVIX Autonomic's exclusive Australian distributor, E.E.Muir & Sons, "Birds see the laser beam differently than humans, we see it as a point of light, but birds see the whole beam. They perceive it as a solid object, like a stick of light, which triggers the danger aspect instinctively and they feel they're under attack, therefore, this causes them to leave the area."

XAG unveils agricultural drone and ground robots

XAG HAS LAUNCHED a new series of smart agri-tech at its annual conference (XAAC 2020), introducing more in-depth digital unmanned solutions to make farming easier and more sustainable.

The releases include three models of XAG Agricultural Drone and two editions of R150 Unmanned Ground Vehicle for broadcast and mower.

XAG has announced actions to scale-up AI prescription map service for crop spraying in China, fighting against pesticide overuse and misuse.

According to Justin Gong, co-founder of XAG, as urbanisation in China continues to accelerate and reach over 65% by 2050, rural aging and loss of agricultural workforce might be eating into a food-secure future. "In face of these challenges, we need to leverage the power of agri-tech to reshape the agriculture and food system, bridging the rural digital divide and helping farmers yield a higher profit margin of producing crops," he said.

XAG P40 and P80 as two new models of XAG's P Series agricultural drone are rolled out to provide various types of farms with more efficient, flexible unmanned operations.

Image credit: XAG

XAG launched the latest innovative drone product at XAAC 2020.

Signify brings Artechno to its horticulture network

LIGHTING SPECIALIST SIGNIFY has signed an agreement with Artechno, a provider of scalable automated vertical farm systems, to make it easier for growers and entrepreneurs to start a vertical farm using Philips GreenPower LED lighting. Partnering with Signify is a logical choice for us," said Art van Rijn, owner of Artechno. "We are a winning combination as we offer our customer the highest efficiency and highest reliability, while Signify provides energy-efficient lighting solutions that perform 24/7, 365 days a year. Together this will help our customers to grow tasty, high-quality produce year-round."Artechno has channelled more than hundred years of combined experience in horticulture into its flagship product, automated vertical farming or AVF+. It offers a fully automated solution for producing a variety of crops from seed to harvest. AVF+ is a modular system that can be customised to the crop's needs, available space or desired production volume. Growers and entrepreneurs can start with a few important components and scale up their automation and operation as they grow."We are proud to expand our partnership network with the knowledge and expertise of Artechno," said Udo van Slooten, business leader horticulture at Signify. "They share our values of innovation, quality and reliability. This partnership will help us lower the barriers for growers and entrepreneurs who are considering a vertical farm by enabling us to offer Philips GreenPower lighting within fully modular and automated systems for every aspect of their operations."Signify continues to expand its horticulture partner network, further demonstrating its commitment to lead the horticulture industry as the innovative LED lighting systems provider for the indoor farming industry.

Image credit: Philips

This partnership will help to automate the production process for diverse crops from seed to harvest.

Hotraco Agri unveils Thomas dry feed controller

HOTRACO AGRI, AN operating supplier of innovative automated systems for poultry and pig farming, has introduced the advanced pig feeding controller in the world: Thomas.

The manufacturer has re-engineered Thomas to become the perfect pig dry feeding solution for every pig house on the planet.

The new Thomas empowers pig farmers to create reliable and efficient feeding processes, that result in optimal animal health and growth, more precise feeding per room and per animal and lower feeding costs

However, in the process development, they had another key focus area: improving pig farmers' daily lives. With the radically improved Thomas, farmers can get more insight, more control, more free time and less worry. Their Remote App gives farmers insight and control of every aspect of the pig house's feeding system.

EVENTS 2021

FEBRUARY

24-26

AGRI WEEK OSAKA
Osaka, Japan
www.agriexpo-osaka.jp/en-gb/about.html

MARCH

3-5

CAC Show
Shanghai, China
www.cacshow.com

3-6

AGROmashEXPO
Online
www.agromashexpo.hu

24-26

Water India Expo
New Delhi, India
www.waterindia.com

MAY

10-12

Flower Expo Asia
Guangzhou, China
www.flowerexpochina.com

18-20

Moscow, Russia
Beijing, China
http://en.agros-expo.com/

22-24

CIMAE
Beijing, China
http://en.cimae.com.cn/

26-28

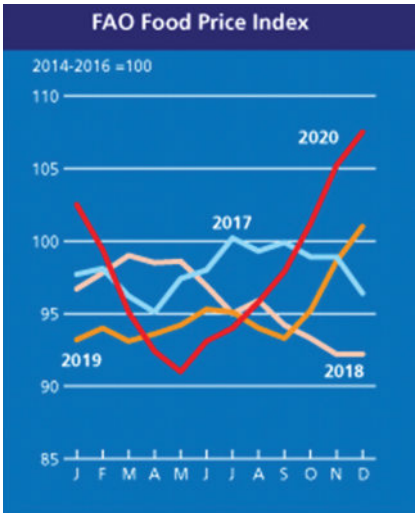
Livestock Philippines
Pasay City, Philippines
www.livestockphilippines.com

FOOD OUTLOOK

THE FAO FOOD Price Index (FFPI) averaged 107.5 points in December 2020, up 2.3 points (2.2%) from November, marking the seventh month of consecutive increase. Except for sugar, all sub-indices of the FFPI registered modest gains in December, with the sub-index of vegetable oil again rising the most, followed by that of dairy, meat and cereals. For 2020 as a whole, the FFPI averaged a three-year high of 97.9 points, 2.9 points (3.1%) higher than in 2019, but still well below its peak of 131.9 points registered in 2011.

The FAO Cereal Price Index averaged 115.7 points in December, up 1.3 points (1.1%) from November, marking the sixth consecutive monthly rise. International rice prices also rose in December, underpinned by tight Thai and Vietnamese availabilities and heightened buyer interest for Indian and Pakistani supplies.

The FAO Vegetable Oil Price Index



averaged 127.6 points in December, gaining 5.7 points (or 4.7%) month-on-month and marking the highest level since September 2012.

The FAO Dairy Price Index averaged 108.8 points in December, up 3.4 points (3.2%) from November and representing the seventh continuous monthly rise.

The FAO Meat Price Index averaged 94.3 points in December, up 1.6 points (1.7%) month-on-month, but still 12.3 points (11.6%) below its year-earlier value. By contrast, pig meat prices fell slightly, as exports to main Asian markets from leading European producers, especially Germany, remained suspended over African swine fever outbreaks.

The FAO Sugar price index averaged 87.0 points in December, retreating slightly (0.5 points) from the marked increase recorded in November. The relative firmness of sugar prices was influenced by the latest trade data showing sugar imports into China, the world's second largest sugar importer, surging by 37% y-o-y between January and November 2020.

Veramaris achieves ASC-MSC Seaweed (Algae) certification

VERAMARIS HAS BECOME the first microalgae oil producer for feed, to achieve the joint ASC-MSC Seaweed (Algae) Standard certification.

The company is a sustainable producer of EPA and DHA Omega-3 algae oil for use in the aquaculture industry as fish feed and pet food. It is the first American producer to achieve the certification.

Veramaris' certified sustainable facility, which is entirely land-based, adds an estimated 45% to the global supply of MSC-certified EPA and DHA Omega-3 and covers approximately 15% of the global requirement for EPA & DHA in farmed salmon feeds.

According to the Food and Agriculture Organisation of the United Nations (FAO), aquaculture is important for meeting the increasing global demand for nutritional food while restoring the oceans' health. This feed must contain Omega-3 fatty acids EPA and DHA, which are vital for animal and human health and mostly come from wild fish catch. One tonne of Veramaris algae oil provides as much EPA and DHA as from 60 tonnes of forage fish.

"Our oceans are under great pressure to supply fish both for direct human consumption and for feed in the aquaculture industry. We are hopeful that the sustainable and responsible production of Omega-3 from algae will help to relieve some of this pressure on wild stocks and help reduce the risk of overfishing," said Patricia Bianchi, ASC-MSC Seaweed account manager.

"We are committed to working with partners along the value chain to bring transparent and sustainable solutions to the industry that results in healthy fish, healthy food and healthy oceans for generations to come," noted Karim Kurmaly, Veramaris CEO.

Novus partners with biotech innovator Agrivida

NOVUS AND ITS board of directors announced a partnership with biotechnology company Agrivida.

In 2020, Novus International, a specialist in nutrition and health solutions for the animal agriculture industry, has announced plans to redefine its business through an enhanced focus on gut health and innovation.

"Agrivida's novel and innovative technology allows for the delivery of feed additives in a unique and very sustainable way – directly inside of the grain. It is technology like this that will further show Novus' commitment to our customers, to help them produce wholesome, affordable food in an efficient and sustainable way," said Dan Meagher, Novus CEO and president.

The partnership combines Novus' nearly 30 years of research, sales and marketing experience with Agrivida's unique technology, allowing both companies to grow the customer base as well as explore new innovative products and solutions through R&D collaboration.

"The Agrivida team has been undertaking groundbreaking work in biotechnology innovations to express functional proteins in grain. That work has led to the development of a sustainable production platform with application potential for many types of feed additives, and we are thrilled to partner with Novus, an organisation that shares our commitment to improving the world of animal health and nutrition through new technologies," stated Rajiv Singh, CEO of Agrivida.

Novus is making Agrivida products available to its customers in the US immediately while registration is underway to expand to other countries.

Spotlight: China's emerging fertiliser market

China International Fertiliser Show (FSHOW) 2021, the 12th China International Fertiliser Show, will take place at the Shanghai New International Expo Center from 3-5 March 2021.

FOUNDED IN 2010, FSHOW has become one of the most famous fertiliser shows in the world. The annual FSHOW provides fertiliser companies with a wonderful platform for displaying the corporate image, exploring the market and finding co-operation partners.

Meanwhile, FSHOW also provides purchasers with a reliable purchasing platform.

FSHOW is the fertiliser zone of China International Agrochemical & Crop Protection Exhibition (ACA), CAC is the largest agrochemical exhibition and a UFI approved event with more than 1,500 exhibitors and 90,000 sq m exhibition area.

The China International Agricultural Chemicals and Plant Protection Exhibition (CAC) has been held successfully for dozens of sessions. CAC provides a one-stop trading platform for the global agricultural industry, a global window for Chinese agrochemical companies, and an annual industry gathering for global agrochemical professionals.

At the same time, China International Agricultural Aviation Exhibition and China International Agricultural Chemical Equipment and Plant Protection Equipment Exhibition will also be held.

The exhibition area of CAC has covered: pesticides, fertilisers, seeds, off-farm drugs, production packaging equipment, plant protection equipment, logistics, consulting, laboratory and supporting services, agricultural aircraft, and small unmanned aerial vehicles, agricultural aerial application technology and spraying equipment and agricultural aerial vehicles.At the same time, the exhibition will hold many high-end theme BBS and product technology exchange meetings.

The exhibition will hold many high-end theme BBS and product technology exchange meetings.

Image credit: Adobe Stock

Highlights:

Internationalisation: A face-to-face negotiation opportunity with more than 37,000 agricultural materials purchasers from more than 120 countries.
Large-scale: About 80,000sqm exhibition area, more than 1,300 exhibitors, to create the world's largest, the most influential, the strongest international agricultural chemicals exhibition.
Professionalisation: A world-class modern exhibition hall; Professional booth layout; Detailed data on international agricultural materials purchasers.
Authoritativeness: CAC is certified by UFI.
Publicise: Publicise with the help of the promotion channel of CAC globalisation exhibition, create infinite business opportunities for the participants through various fertiliser magazines and fertiliser professional websites all over the world. It is vigorously promoted through FSHOW media throughout the year.

China's market

According to research by Mordor Intelligence, the China fertilisers market is projected to grow at a CAGR of 2.2% between 2020 and 2025. The market segment of pulses and oilseeds studied is projected to be the highest CAGR in the forecast period.Market growth is constrained by the Chinese government's zero-growth policy and environmental protection system for rural areas and the agricultural sector, pollution control and green development.The policy, which was released in 2015, envisages zero-growth in fertiliser and pesticide consumption by 2020. Through this, the policymakers are promoting accurate fertilisation, adjusting fertiliser consumption structure, improved fertilisation, and the use of more micronutrients and secondary fertilisers, as compared to straight fertilisers, particularly nitrogenous fertilisers. This policy is expected to provide a fillip to the growth of the market for biofertilisers in the country. ■

Organic food: Demand is growing worldwide

Rising health consciousness among the global population, coupled with growing awareness of health benefits offered by organic food, is influencing the demand for organic food and across the globe.


Image credit: Adobe Stock

The organic fertilisers market is expected to reach US$15.9bn by 2027.

A STUDY BY the Organic Trade Association shows that, in 2019, the sales of organic food in the USA indicated a rise of 11% from the previous year. Increase in imports of organic food has also been observed across Europe and the Asia-Pacific region. According to the European Commission, out of 54% of total agricultural food import in the region in 2019, organic food accounted for 3.34 million tonnes, which was about 34% of the overall import.

According to Research and Markets, the organic fertilisers market is expected to reach US$15.9bn by 2027, at a CAGR of 11.5% from 2020-2027. Also, in terms of volume, the organic fertilisers market is expected to grow at a CAGR of 6.6% from 2020 to 2027 to reach 33,829kt by 2027.

The major players operating in the global organic fertilisers market are Italpollina S.p.A. (Italy), Multiplex Group (India), Coromandel International Limited (India), Midwestern BioAg (the USA), Perfect Blend, LLC (the USA), ILSA S.p.A. (Italy), California Organic Fertilizers, Inc. (the USA), Biolchim S.p.A. (Italy), Qld Organics (Australia), FertPro Manufacturing Pty Ltd. (Australia), National Fertilizers Limited (India), SPIC Ltd (India), Fertoz Ltd. (Australia), ScottsMiracle-Gro Company (the USA), Sustane Natural Fertilizer, Inc. (Australia), and Fertikal NV (Belgium), among others.

According to data from the United States Department of Agriculture (USDA), top Asian countries for organic farming include China (1,900,000ha organic farming), India (500,000ha organic farming), Indonesia (88,247ha organic farming), Philippines (80,974ha organic farming), Vietnam (36,285ha organic farming), Thailand (32,577ha organic farming) etc.

USA and Japan expand organic trade opportunities

In August 2020, the USA and Japan announced the expansion of their organic equivalence arrangement to include livestock products. The arrangement aims to reduce costs and streamline the process for anyone involved in the organic livestock supply chain by requiring only one organic certification.

> **"In August 2020, the USA and Japan announced the expansion of their organic equivalence arrangement to include livestock products."**

"Opening new markets for America's organic farmers and ranchers continues to be a priority for USDA," said the US Department of Agriculture (USDA) marketing and regulatory programmes undersecretary, Greg Ibach.

"Japan is already one of the top export markets for US organic products. This agreement opens additional opportunities for everyone involved in the international supply chain for livestock, from farm to table."

The Japan Agricultural Standards (JAS) require organic livestock products imported from the United States to either be certified under the JAS or USDA organic regulations. The announcement marks the addition of livestock to the existing USA-Japan organic trade arrangement that has allowed plant-based products to be certified to either country's organic standards since 2014. ■

Artificial intelligence in AgriTech– The worthiness of it

Image credit: Adobe Stock

Agricultural robots are very useful in addressing difficulties in crop yield.

Technology as an expansive idea has had a huge undertaking to complete, one which concerns the weeding out of weights and wrinkles in age-old foundations and ways of working. AgriTech is a customised category, partaking in the advancement era of agriculture, says Sanjay Borkar, co-founder and CEO of FarmERP.

THE AGRICULTURAL INDUSTRY is one that maintains around 43% of India's workforce, therefore, it is one of the primary sources of income along with being our prime hotspot for food and sustenance. The world has now overcome the enormous trial of how to augment cultivation processes to achieve food security during the 21st century and feed the rising population sustainably. Factors such as environmental change, population growth, and food security concerns have compelled various businesses to look for creative ways to deal with ensuring and improving harvest yield.

Therefore, artificial intelligence (AI) is consistently arising as a feature of business innovative advancement. AI is being integrated into vital fields making human life more efficient and productive.

Similarly, AI in agriculture is making agriculture and farming easier with computer vision-based crop monitoring and production systems. Satellites, unmanned aerial vehicles (UAVs), and distant sensors are technologies that are gaining popularity each day. They screen farms for 24 hours everyday reliably and gather ample data, hence, enabling the farmers to monitor their yields in a prevalent way and get notified when the crops are ready for harvest.

> **"We foresee that satellite machine vision applications will turn out to be increasingly ordinary for enormous industrial farms in the coming 5–10 years."**

Artificial intelligence-driven advances are arising to help improve effectiveness and to address difficulties that confront the business stream, including crop yield, soil well-being, and herbicide-opposition. Even agricultural robots are ready to turn into an exceptionally esteemed utilisation of AI in this area.

Proof of wide appropriation is obvious in dairy farming where a huge number of milking robots are working today. This fragment is foreseen to rise from US$1.9bn to US$8bn in the industry by 2023. Agricultural robots may be created to finish an assorted exhibit of undertakings in the following three to five years.

Harvest and soil monitoring advances will likewise be salient applications going ahead as environmental change is continuously investigated and assessed. One exploration study announced that environmental change assessed from 1980

to 2008 brought about a 3.8% worldwide decrease of maise and a 5.5% decrease of wheat.

The measure of information that can conceivably be caught by advancements, for example, robots and satellites will consistently give agricultural organisations another way to foresee changes and recognise openings.

"We foresee that satellite machine vision applications (for the climate, crop well-being, anticipating crop yield, and so on) will turn out to be increasingly ordinary for enormous industrial farms in the coming 5-10 years," said Borkar.

The most famous uses of AI in farming fall into three significant classes:

Agricultural robots – Companies are creating and programming self-governing robots to deal with fundamental agricultural assignments, for example, reaping crops at a higher volume and efficiency. Agricultural robots serve the purpose to automate mundane and repetitive tasks for farmers. They aid farmers to focus on reducing wastage and improve overall yield produce. The most common applications of agricultural robots are in:

- Field mapping
- Harvest management
- Weather forecasting
- Soil management
- Irrigation management

Yield and soil monitoring – Companies are utilising computer vision and profound learning algorithms to deal with information caught by drones or software-based innovation to screen harvest and soil well-being. AI in agriculture is providing cutting-edge technology for harvesting, crop, soil and yield monitoring due to daily upgrades.

The technologies which are AI-based help improve efficiency in all field related activities. AI and IoT based technology also manage the challenges faced by various industries, including various fields in the agricultural sector like crop yield, irrigation, soil content sensing, crop-monitoring, crop harvesting, weeding, as well as soil monitoring.

The utility of machine learning algorithms in connection with images captured by drones and satellites enables AI technologies to forecast weather conditions and analyse crops sustainability. The machine learning algorithms help warn farms about the presence of harmful pests

Image credit: FarmERP.

Sanjay Borkar, co-founder and CEO of FarmERP.

or diseases with data such as:

- Temperature
- Precipitation
- Wind speed
- Solar radiation

Through the use of geo-sensing and geo-mapping technology, drones can monitor the health condition of soils, yield and crops. This plays a major role to help farmers to make sure about the right time for sowing and the actions that must be carried out to save the crops. Correct soil conditions and timely insecticides play a very crucial part for high yield produce and better productivity.

Predictive analytics – Machine learning models are being created to follow and anticipate different natural effects on harvest yield, for example, climate changes.

Machine learning exists throughout the whole crop harvesting and crop growing cycle. Machine learning commences with a seed being planted in the soil, from the soil preparation, seeds breeding and water feed measurement - and it ends when robots pick up the harvest determining the ripeness of the seed with the help of computer vision.

> **"The use of geo-sensing and geo-mapping technology, drones can monitor the health condition of soils, yield and crops."**

It also plays a vital role in field conditions management with the following steps:

- Soil management
- Water management
- Crop management
- Yield production
- Crop quality
- Disease detection
- Weed detection

Subsequently, aside from these broad applications of AI in agriculture, farmers must be equipped with training that is exceptional to guarantee that the advancements are utilised and consistently improving. This will assist with demonstrating the value of these technologies as time goes on.

Moreover, broad testing and approval of arising AI applications in this area will be basic, as farming is affected by natural factors that cannot be controlled, not normal for different businesses where danger is simpler to display and anticipate. "We envision that the rural businesses will observe consistent adaptation of AI and will monitor this trend," Borkar added.

Through the inception of innovation, farmers can extend their purchaser base, arrive at an exceeding number of customers, and surge their productivity too. Online trading platform, E-Mandis, are picking up as well and are running after the production of a uniform public marketplace for horticulture practices, in turn, expanding the customer base for farming companies and individual farmers who would then be able to bargain (hypothetically) directly with the whole nation.

These are a few ways in which innovation is incorporated with agribusinesses and can help individual and smallholder farmers, alongside giving help to the whole supply chain, with setting advantages to contracting farmers, corporates, R&D establishments, funding agencies, trade bodies, farmer producer company's and government bodies as well.

The path forward for future farming processes and farmers, alongside different agri-related sub-verticals, is by all accounts advanced and useful for agriculture stakeholders spread across the value chain. It is significantly useful for smallholder farmers and labourers too, converting them into proprietors. ■

Starting off 2021 with planting innovations

The need for improved efficiency and high labour costs in agricultural operations is driving farmers towards farm mechanisation.

PLANTING MACHINERY, WHICH is a part of farm mechanisation and agricultural automation, helps farmers improve farm productivity. Various government and non-government organisations around the globe are introducing several initiatives to improve agricultural practices and productivity. Governments are providing subsidies to farmers to purchase agricultural machinery and equipment, including planting equipment. They are also promoting the use of advanced technologies and mechanised equipment, even in small household farms.

According to market research by Technavio, the global market for planting equipment is set to grow by US$4.28bn in 2020-2024 at a CAGR of more than 6%. The growing emphasis on farm mechanisation, together with funding for the increasing deployment of precision farming equipment and technology, is expected to boost the market growth.

A round-up of innovations released by manufacturers for planters, drills and seeders designed to improve planting results.

Planting Master Potato+

Mahindra & Mahindra Ltd's Farm Equipment Sector (FES) has launched its advanced precision potato planting machinery, the 'PlantingMaster Potato +'.

Designed and developed in collaboration with Europe-based partner Dewulf, a global leader in potato machinery, the new PlantingMaster Potato + has been developed to suit Indian farming conditions, to offer higher yields and enhanced quality.

In 2019, Mahindra and Dewulf have partnered with progressive farmers in Punjab to introduce the new precision potato planter technology. These farmers have reported a 20-25% increase in yields, over traditional methods after using this system.

Hemant Sikka, president, farm equipment sector, Mahindra & Mahindra, said, "As the world's second largest potato producing nation, advanced farm machinery is needed to drive up yields and improve quality. With the 'PlantingMaster Potato +', we are bringing this technology to Indian farmers to drive productivity and quality improvements in potato farming. As we launch this product, the precision planter is also available on a rental basis in some markets, and offered through easy financing for purchase, making this new technology accessible to Indian farmers."

4905 True Speed planter

Kinze Manufacturing is expanding its new high-speed planting technology with a second 4905 True Speed planter model for the 2021 season. Kinze has announced plans to introduce the 4905 planter in a 24-row model for 2021. "The 16-row configuration was originally planned for 2022, but testing went so well we are pleased that we are able to move up our timeline and make this model

The new generation of Fendt Xaver combines the advantages of compact swarm robots with the performance of precision planting's seed unit.

available to farmers next season," said Kinze president Susanne Veatch.

"Both configurations enable farmers to double the number of acres they plant in a typical day or cover the same acres in a more timely fashion," Veatch said. "The technology also supports operations trying to expand because farmers can plant more acres with the same size planter."

The True Speed system, developed by Kinze, consists of a new high-speed electric metre and seed delivery tube enabling corn and soybean farmers to plant at speeds up to 12 miles per hour while maintaining precise singulation and seed spacing. Both 4905 configurations feature Kinze's easy-to-use Blue Vantage display and Blue Drive electric drive, as well as the Kinze 05 planter series upgrades designed to increase the wear life of many components, simplify maintenance, improve performance and reduce the overall cost of planter ownership.

The new generation Fendt Xaver

The new generation of Fendt Xaver combines the advantages of compact swarm robots with the performance of precision planting's seed unit and the integrated FendtONE digital platform. The latest generation of the Fendt Xaver comes with an embedded solution developed by the AGCO Group, a seed unit from precision planting.

The vSet solution quickly spaces the seed with utmost precision. With the help of an electrically driven control system, individual grains are deposited with centimetre-accuracy at a pre-defined distance in the row. The grains are dropped in the furrow by a flexible firmer. Thanks to the now three-wheeled concept, the last wheel drives the robot and acts as a gauge wheel. When it passes over, it compacts the soil gently to the side and above the seed, closing the soil around the seed grain to ensure the moisture supply and initiate germination.

1745 MaxEmerge 5 Planter

When it comes to new planters, bigger isn't always better or required. For today's corn and soybean customers who require planter-applied fertiliser, a split-row configuration and narrow transport, John Deere has introduced the 1745 MaxEmerge 5 Planter.

> **"With the 'PlantingMaster Potato +', we are bringing this technology to Indian farmers to drive productivity and quality improvements in potato farming."**

The 1745 Planter can be quickly folded for transport, right from the cab. Once folded, its compact size tracks within the duals of the tractor for stable, narrow transport under 13-foot (3.9 m) high.

"The 1745 is an economical planter in a split-row configuration that's capable of planting soybeans on 15-inch (38 cm) rows and corn on 30-inch (76.2 cm) rows. Customers told us they want to be able to apply dry or liquid fertiliser while planting corn, a technique that can boost yields by approximately 10 bushels per acre when compared to the conventional method of broadcasting nitrogen fertiliser," Ryan Hough, marketing manager, planting and seeding for John Deere said. "The 1745 Planter addresses these requirements."

When fitted with optional RowCommand individual-row control, the 1745 Planter can help customers reduce their seed costs by 4.3% on average compared to not using RowCommand.

Fendt Momentum planter

Agricultural equipment manufacturer AGCO Corporation has introduced the Fendt Momentum planter. This new planter is made up of three independent, intelligent sections that operate automatically, ensuring the row units on each section maintain the ideal seeding depth.

The planter's patented sensor-controlled hydraulic system monitors the angle of the row-unit parallel arms to automatically adjust toolbar height, keeping the arms level and the row units properly engaged with the soil as ground conditions and terrain change.

The vertical contouring toolbar flexes up and down as much as 65.9 inches to follow the contour of the field and ensure the row units properly engage with the soil.

"Row crop producers know an evenly emerged, picket-fence stand planted during the 'ideal planting window' is a critical first step for optimum yields," said Alex Lundgren, product manager, Global Crop Care, Seeding & Tillage at AGCO. "However, at planting there are many agronomic and operational challenges that can be beyond their control. That's why it is important to control what we can, when we can." ■

The 1745 Planter can also be fitted with the optional John Deere SeedStar XP monitoring system.

Image credit: John Deere

Smart technologies for biosecurity

The Ceres Tag platform uses the capabilities of Globalstar to produce a small and light weight (just over one ounce) smart ear.

Image credit: Adobe Stock

With the outbreak of COVID-19, biosecurity has become even more important in controlling and eliminating the spread of diseases.

BIOSECURITY IS CRUCIAL and essential for safe and profitable production of all kinds of livestock. Actions and measures taken to prevent animal diseases are crucial to ensuring food safety.

Recent technological advances leading to changes in livestock biosecurity:

Satellite livestock smart ear tag

Globalstar has signed a commercial agreement with Ceres Tag to supply satellite services to the livestock industry through the world's first and only smart ear tag for traceability provenance, biosecurity, health, animal welfare, production improvement and theft reduction.

The Ceres Tag platform uses the capabilities of Globalstar to produce a small and light weight (just over one ounce) smart ear tag that attaches to the animal and automatically sends the data to the cloud via the Globalstar Satellite Network.

David Smith, CEO of Ceres Tag, said, "With more than billion cattle in the world and a similar number of sheep and goats, we now have a low-cost limitless way to monitor our animals. There has never been a more important time to know where your food has come from than during this pandemic."

The partnership enables Ceres Tag to supply an automated daily recording of animals, including world exclusive capabilities on pasture feed intake, which is primary to determining feed efficiency, genetic selection and managing of greenhouse gas. Traceability, biosecurity, performance, health and welfare have never been under more scrutiny than they are now.

Disease mitigation technology platform

Farm Health Guardian, a new real-time disease mitigation technology platform, is now available for pork and poultry producers and integrators. Brought to market by Be Seen Be Safe, the innovative system accurately and quickly tracks and shuts down disease spread within minutes of the first report of disease symptoms.

Tim Nelson, founder and president, Be Seen Be Safe, said, "Quick and efficient disease containment is critical to the safety and sustainability of the livestock and poultry industry and the people who work within it. Even with the best individual farm biosecurity protocols, livestock and poultry systems are vulnerable to the devastation that disease outbreaks can cause. With this proven technology, we are able to reduce the impact throughout the production network by containing an outbreak before it spreads."

The Farm Health Guardian patented system tracks and records all movement in and out of production facilities in real time, providing fast, easy, confidential ways to record all staff, visitor and vehicle movement. The system uses multiple technologies to record this movement, including an app for contactless digital pre-screening, paperless check-in, vehicle passport and GPS tracking.

Dan Di Salvo, Maple Leaf Foods vice-president infrastructure and security, stated, "The collaborative partnership Be Seen Be Safe and Maple Leaf Foods made the journey and solution successful, easy-to-use and even more. It's a major step forward in support of industry best practices in assuring continued, safe, quality food production that will continue to meet the growing global demand for food." ■

Getting the know-how of feed passage in broilers

Image credit: Adobe Stock

Thorough examination of the affected birds is required to investigate the cause.

Feed passage in poultry continues to be an occasional problem in poultry integrations. Therefore, it is crucial to keep an open eye, as many factors need to be considered while investigating the problem.

"FEED PASSAGE" OR the passage of undigested feed in the feces of broilers, is a common problem in broiler integrations on a sporadic basis. In this syndrome, the health of the birds is not adequate and there is a serious loss of productivity, which leads to deficient growth and poor feed conversion rate.

In some cases, feed passage is observed at the time of different diseases, particularly those diseases that cause lesions in the tissues of the digestive system and those affect the composition of intestinal flora.

Some of the causes of feed passage syndromes in broiler include heat stress, dietary salt intake, Coccidiosis, Ascarids and Cestodes, Bacterial Infections, Mycotoxins, Tannins, Biogenic Amines and others.

As reported in a paper written by Gary D. Butcher, Amir H. Nilipour, and Richard D. Miles, entitled *Feed Passage in Broilers—A Complex Problem*, published in the University of Florida IFAS Extension (https://edis.ifas.ufl.edu/vm090), feed passage in broilers occurs in individual farms or, in some cases, in entire integrations. The disease is not being observed on a global basis as in the past. The tendency for broiler managers, from past experiences, is to immediately blame the feed quality. However, the lack of consistency of the problem in farms suggests other factors may need to be considered.

Signs of the feed passage syndrome include:

- The droppings are not in shape and the uric acid is white.
- Undigested feed can be visible in the droppings, sometimes have yellow or orange colour. In some cases, these are watery.
- Lack of uniformity can be noticed among the birds.

"Identifying the specific cause(s) of feed passage in an integration may be difficult, as many complex factors need to be considered. In some cases, several factors work in concert and limit the broiler's ability to digest and/or absorb feed, resulting in the passage of undigested nutrients. Investigation of the cause(s) requires gross examination of the affected poultry, examination for presence of intestinal parasites, bacterial culture, virus isolation, histopathology and toxicological testing.

These diagnostic capabilities are not readily available to many integrations; thus identifying the cause of the problem often is based on more subjective observations. It is clear that management practices can play a major role in preventing this problem. Feed passage directly affects the most important broiler economic performance parameters, feed conversion and body weight. When feed passage is observed in broiler houses, evaluating basic management practices may be the most efficient manner to resolve the problem," noted the paper. ■

CP inaugurates Southeast Asia's largest poultry complex

CPV FOOD CO, a subsidiary company of CP Vietnam Corporation, has inaugurated the largest exporting chicken complex factory – CPV Food Complex Project in Binh Phuoc, Vietnam. This is the largest complex of breeding and processing chicken for export in Southeast Asia until now.

The project has an initial investment capital of US$250mn, with a capacity of 100 million broilers per year (after 2023). CPV Food Binh Phuoc creates the extra breakthrough in Vietnam's livestock industry; provides high-quality chicken meat products and food safety to domestic consumers and for exports: Japan (45%), Europe (35%), Asia (10%), and Middle East (10%). The project is expected to bring in foreign currency of US$100mn per year in stage 1 and US$200mn per year in stage 2.

CPV Food Binh Phuoc had started operation and had the first export chicken batch since 2020, leading Vietnam into major poultry food producing countries in the world.

"Investing in Vietnam for more than a quarter of a century, we deeply comprehend the macroscopic policy of the Vietnam Government and the direction of the Ministry of Agriculture and Rural Development in promoting Vietnam to become a food manufacturing country which meets international standards and

Image credit: CPV Food

CPV Food Binh Phuoc had started operation and had the first export chicken batch since 2020.

increase exports. With the strength and successful experience in exporting poultry meat over 20 years of CP Group, we confidently set out mission of the self-sufficient chain project to export poultry meat, from Vietnam. The mission of 'Improving food quality in Vietnam, contributing to carry Vietnam on the map of branded poultry meat exports in the world," Montri Suwanposri – president of CPV said.

Micro-irrigation for fruit trees, shrubs and vegetables

Micro-irrigation is especially pertinent for higher value crops such as orchard-grown fruit crops and row crops including a wide range of fruit, flower and vegetable crops cultivated both outdoors and in greenhouses. Dr Terry Mabbett reports.

Successful micro-irrigation requires high-quality water source as well as efficient delivery to the crop plants.

Image credit: Dr Terry Mabbett

MICRO-IRRIGATION IS DEFINED as the application of water to less than 100% of a crop area. The term micro-irrigation covers both drip/trickle irrigation systems and micro-sprinkler/micro-jet irrigation systems.

Each has advantages and disadvantages and can be modified and adapted to different crops, soil types and climatic conditions. As a general rule, drip irrigation systems find the widest application in row crop vegetables and bush/vine crops, while micro-sprinklers are most popular in fruit orchards and groves.

Micro-sprinklers for fruit tree crops

Micro-sprinkler irrigation systems are designed to deliver and distribute water as a fine rain-like shower of drops. Water is generally transported to and through the field via a network of tubes for delivery to micro-sprinkler devices to give localised but highly efficient and effective irrigation.

The main difference in delivery through a micro-sprinkler or a micro-jet is the water jet rotating in the former while being static in the latter. Micro-sprinkling is traditionally used for 'straight' irrigation of crops and also as an adaptable multi-purpose system for fertigation and chemigation, frost protection in orchards and evaporative cooling in greenhouses.

Water requirements for a micro-sprinkler system are usually calculated and determined from evaporation rate from the crop and/or soil, or by measurements of soil water content. Early tests conducted by the Israeli Agricultural Extension Service showed that the efficiency of micro-sprinklers at between 94-97% was higher than for any other comparable method of irrigation. Such ultra-high efficiency was attributed to uniform wetting of the irrigated area and to correctness and exactness of the volume of water used.

> **"Micro-sprinklers apply the amount of water needed by the plants to a set volume of soil."**

Micro-sprinklers apply the amount of water needed by the plants to a set volume of soil. This strategy allows uniform development of the root system and dense spread of roots throughout the entire volume of wetted soil. When micro-sprinklers are the main means of water application throughout the year, trees are

assured of a continuous and adequate supply of water and nutrients.

This is in complete contrast to orchards and groves, where tree crops are predominantly rain-fed and only need irrigation for relatively short but critical periods of time during the dry season. In this situation, the tree's root system develops according to the distribution of natural rainfall. Only the micro-sprinkler with its modular design and wide range of options is capable of supplying the required quantity of water and nutrients accurately and efficiently to the already developed root system during this critical dry season period.

The uniform rate of irrigation provided by micro-sprinkling means it is relatively easy to calculate the amount of water required by each tree. Given the low water volume applied, there is no problem with water 'runoff' or water 'ponding' on the surface of the soil, and irrigation rate is easily matched to soil type and climatic conditions. And through the application of optimum amounts of water, there will not be any seepage out beyond the root zone nor problems of aeration within the root zone caused by water-logging of the soil. Furthermore, uniform wetting of the soil by using micro-sprinklers makes for easier use and application of soil monitoring equipment and instrumentation.

The pattern of root distribution is a close, and complete reflection of the distribution of water in the soil, and numerous field trials comparing micro-sprinkling and other methods of irrigation (including classical drip irrigation) in orchard crops show distinct differences in the pattern of root distribution.

In the micro-sprinkler treatment, the roots are evenly distributed in the area/volume of wetted soil and grow to a depth of some 80cm, as well as being far greater in number. On the other hand, roots in classical drip irrigated treatments are concentrated in a relatively shallow and small volume of soil beneath the dripper. Furthermore, micro-sprinkling produces a superior tree canopy/root system relationship that is much better balanced.

Only some 40-80% of soil surface area is wetted with micro-sprinklers in mature orchards but may be adjusted according to the pattern and extent of root development without incurring of any extra costs. In addition, the shape of the wetted surface area may be altered from a full circle to a half circle or strip shape. A small full circle (progressively enlarged) is commonly used for small young trees as they grow and develop.

The actual sprinklers are connected to the lateral via a flexible tube, thus allowing underground installation of the distribution pipes. This assists in the prevention of damage typically caused by birds and rodents. Each micro-sprinkler unit may be equipped with a flow regulating device to ensure an even rate of water supply to each tree irrespective of any differences caused by water head pressure or 'lay of the land'.

Visual inspection of micro-sprinkler irrigation systems is easy and rapid, taking considerably less time than for inspection of several emitters at every tree for the typical drip irrigation system. The considerably larger mesh filter employed in micro-sprinklers allows longer operating times before filter cleaning is required.

> **"Micro-sprinklers are particularly appropriate for marginal lands."**

Image credit: Dr Terry Mabbett

Micro-irrigation is widely used in bush crops and integrated with plastic mulch as seen for the blackcurrants (Ribes) shown here.

Micro-sprinklers are particularly appropriate for marginal lands and saline water resources for which they outperform other irrigation systems, often by as much as a third. Salinity is a key factor, and one of the main aims of any irrigation system is to avoid the accumulation of salinity related salts in the root zone of the tree. And

this becomes overriding in importance when farmers are forced to use brackish or saline water for irrigation.

Saline water and soil cause damage to the root system, which in turn negatively affects transpiration rate, photosynthetic efficiency and therefore crop yield and fruit quality. Experiments that have used a saline water supply (E.C. 2.8 mmhos) show that the level of salinity in the root zone is less under micro-sprinklers than drippers. It is much better to control salinity of the soil by periodic flushing with water than by continuous irrigation with large volumes of water, which will invariably lead to soil aeration problems in the longer term.

Use of micro-sprinklers additionally allows the introduction of fertilisers into the system and application by what is commonly known as fertigation. Not only does this provide more measured nutrient application targeted at different and changing seasonal and crop developmental requirements (economising on fertiliser), but also reduces overall labour requirement. Even nutrients with comparatively low soil mobility are suitable for application through micro-sprinklers.

Drip irrigation for row crop vegetables

Drip or trickle irrigation systems are ideal for row crop vegetables. They were initially developed sixty years ago but did not find widespread application until the advent of polyethylene plastic mulches some twenty years later. Drip irrigation applies small amounts of water on a daily basis to the root zone and can be designed to irrigate any size of vegetable production unit.

There are four major components which are:

- Delivery system comprising line source dripping tube
- Filters (sand, disc or valve)
- Pressure regulators (spring or valve)
- Valves (hand-operated, hydraulic or electrical.

And two different options which are:

- A controller (basic clock or computer).

> **“Plastic mulch and drip irrigation complement each other.”**

Image credit: Omex Agrifluids

Micro-irrigation is standard practice in greenhouse cropping and especially in arid and semi-arid climates where water resources are limited. Cucumber crop watered by micro-irrigation is shown here.

- Fertigation system (electric pumps, hydraulic pumps, venture systems etc).

Plastic mulches have been used successfully on a wide range of vegetables (and fruit) including tomatoes, cucumbers, melons, squash, eggplant, ochra, peppers and strawberry. Traditionally there are three colour types used depending on climate and benefits required:

- Black plastic mulch to retard weed growth and to warm the soil
- Clear plastic mulch mainly in colder regions because it warms the soil even more, although herbicides are required to control weeds that can grow under the clear film
- White or white-on-black plastic mulch which is most popular to reduce soil temperature in hotter climates

More recently a wider variety of colours including blue, yellow and silver have been employed to deter insect pests or encourage natural enemies through visual colour stimulation.

Plastic mulch and drip irrigation complement each other, so it is worth looking at the advantages of each.

Advantages of plastic mulch over bare soil are:

- Higher bed temperature leading to more rapid crop growth and development and consequently earlier harvests and yields.
- Reduction in water evaporation from the soil to maintain a more uniform soil water profile with consequent reduction in irrigation frequency and volume.
- Fewer weed problems because light levels reaching the soil are reduced, and because weeds generally fail to survive under the mulch. Exception is for clear plastic mulch.
- Reduction in fertiliser usage because soil losses through run off and leaching are reduced.
- Lower levels of ground compaction because soil under the mulch stays loose, friable and well aerated to provide adequate oxygen to the roots.
- Elimination of root pruning except within inter-row area (no mulch) which can be kept weed free with herbicide.
- Cleaner fruits and vegetables with less fungal and bacterial rots because mud splash is eliminated.
- Mulches reduce frequency of water-logged drowned crops and other stresses caused by free water laying on and around the crop.

Advantages of drip irrigators over over-head irrigation systems are:

- Lower levels of water may be used to achieve the same results. Generally speaking drip irrigation halves water usage compared with overhead systems.
- Reduced pressures and lower flow rates and less power are required which means lower energy usage and cost for pumping.
- Generally less disease because foliage and fruit is not unnecessarily wet for long periods of time.
- Labour and operating costs are generally lower and more automation is possible.
- There is no wastage of water deposited between the rows and therefore less weed growth.
- General field-operations can continue unhindered because the inter-row walk-ways are always dry.
- More efficient and targeted application of fertiliser direct to the root zones is possible. ■

POULTRY BUYERS' GUIDE 2021

Section One - Supplier listings by categories
Section Two - List of suppliers
Section Three - Contact details of agents in Asia

PLEASE MENTION FAR EASTERN AGRICULTURE WHEN CONTACTING YOUR SUPPLIERS

Section 01

All Equipment
Henke-Sass, Wolf GmbH
KSE Process Technology B.V

Breeding Equipment
Plasson Ltd Israel

Cages - Broiler
Big Dutchman International GmbH

Cages - Layer
Big Dutchman International GmbH

Climate Systems
Big Dutchman International GmbH
Plasson Ltd Israel

Disinfection Products
Eurofeed Technologies S.p.A.
Intraco Ltd. n.v

Egg Collection, Handling and Transport
Big Dutchman International GmbH

Exports
Eurofeed Technologies S.p.A.
Henke-Sass, Wolf GmbH

Feed
Eurofeed Technologies S.p.A.
KSE Process Technology B.V

Feed Additives
Eurofeed Technologies S.p.A.
Intraco Ltd. n.v
Unipoint AG

Feed Additives, Natural
Eurofeed Technologies S.p.A.
Unipoint AG

Feed Ingredients
Eurofeed Technologies S.p.A.
Intraco Ltd. n.v
Unipoint AG

Feeding Systems
Big Dutchman International GmbH
Plasson Ltd Israel

Feeds, Concentrates, Premixes
Eurofeed Technologies S.p.A.
Intraco Ltd. n.v
KSE Process Technology B.V

Handling Equipment
KSE Process Technology B.V

Health Control
Henke-Sass, Wolf GmbH
Malaysian Vaccines & Pharmaceuticals Sdn Bhd

Health Products
Eurofeed Technologies S.p.A.
Henke-Sass, Wolf GmbH
Socorex Isba SA.
Malaysian Vaccines & Pharmaceuticals Sdn Bhd

Medicators
Henke-Sass, Wolf GmbH

Mould Inhibitors
Eurofeed Technologies S.p.A.

Processing - Killing and Defeathering
Marel Poultry

Salmonella Control
Eurofeed Technologies S.p.A.

Sanitation
Eurofeed Technologies S.p.A.
Intraco Ltd. n.v

Slaughtering Equipment
Marel Poultry

Turnkey Operations
Marel Poultry
Plasson Ltd Israel

Veterinary - Vaccinators
Henke-Sass, Wolf GmbH

Veterinary Instruments
Henke-Sass, Wolf GmbH
Socorex Isba SA.

Watering Equipment
Plasson Ltd Israel

Section 02

Big Dutchman International GmbH

PO Box 1163
Vechta, 49360, Germany
Tel: +49 444 78010
Fax: +49 444 7801237
Web: www.bigdutchman.de
E-mail: big@bigdutchman.de

Worldwide Big Dutchman is the market leader in housing and feeding systems for poultry production. Big Dutchman offers modern cages for laying and rearing as well as for breeders. Manure belt ventilation, complete range of equipment for floor management, drinking systems, climate control, alternative housing systems for laying hens and housing and feeding systems for turkeys and broiler are further examples from the complete Big Dutchman program.

Agents:
Bangladesh - AFS Enterprise
China - Big Dutchman (Tianjin) Livestock Equipment Co. Ltd. Beijing Branch Com.
India - BD Agriculture India Pvt. Ltd.
Indonesia - PT BD Agriculture Indonesia
Japan - Nakajima Seisakusho Co. Ltd.
Japan - Tohzai Sangyo Boeki Inc.
Korea - Ganong International Co. Ltd
Korea - Samsung MS
Malaysia - BD Agriculture (Malaysia) Sdn Bhd
Myanmar - BDA Agriculture (Myanmar) Ltd.
Pakistan - Eastern Veterinary Services
Philippines - BD Agriculture (Philippines) Inc.
Singapore - Morgan Enterprise
Taiwan - Bartholomew Lo, Siu-Man
Taiwan - Global Ace Trading Co.
Thailand - BD Agriculture (Thailand) Ltd.
Vietnam - BD Agriculture (Vietnam) Co., Ltd.

Eurofeed Technologies S.p.A.

Via Luigi Einaudi, 12
25030 Brandico (Bs), Italy
Tel: +39 0306864682 / 0309973064
Fax: +390306866560 / 0307772419
Web: www.eurofeed.it
E-mail: info@eurofeed.it

Eurofeed Technologies S.p.A. is an Italian Company that produces and trades feed additives all over the world. We are GMP+Certified.Eurofeed Technologies' portfolio includes: Acidifiers-Antimicrobials-Antioxidants-Aromas-Enzymes-Energising-Elettrolyte-Micotoxin Binders-Mold Inhibitors-Natural Adjuvant In Coccidiosis Prevention-Natural Diarrhea Prevention-Natural Growth Promoter-Nucleotides-Organic Trace Elements-Pellet Binders-Pet Food-Sanitizing-Vegetable Protein Concentrates-Vitamins

Henke-Sass, Wolf GmbH

Keltenstraße 1, Tuttlingen
78532, Germany
Tel: +49 7462 9466118
Fax: +49 7462 94665208
Web: www.henkesasswolf.de
E-mail: stefan.knefel@henkesasswolf.de

Henke-Sass, Wolf (Tuttlingen/Germany) is a leading manufacturer with more than 90 years of experience in designing and producing veterinary syringes, needles and application systems.

Everything for the poultry users from one source! Single/double automatic vaccinator for day-old chicks: enables injection of two different vaccines with only one penetration. HSW UNI-MATIC® - 0,1 ml- 1 ml; no o-ring to reduce maintenance issues; failure free valves ensure injections without interruption. HSW FINE- JECT® disposable needles-extra short sizes e.g. 18Gx1/2", 20Gx1/4", 22Gx3/8". HSW ECO® needles- re-usable metal hub needles; extra short sizes e.g.19Gx1/2", 20Gx1/2". Wing Web Vaccinators- ideal for pox and other micro-dosage injections; enables a total dosage per vaccinator of 0.001 ml and 0.01 ml.

Agents:
Indonesia - Pesona Scientific
Korea - Yushin Corporation
Philippines - P & J Agricultural Trading
Taiwan - Ennchih Co. Ltd.

Intraco Ltd. n.v

Jordaenskaai 24, Antwerp,
2000, Belgium
Tel: +32 3 2269850
Fax: +32 3 2269852
Web: www.intraco.be
E-mail: intraco@intraco.be

Intraco Ltd. is the specialist in feed concentrates, premixtures, protein meals, feed additives. Primary business is finding an optimal balance of all local parameters, thus providing customer-made, comprehensive solutions which optimize yields in a profitable and responsible way. HI-CONCEPT: Integrated Hygiene Solutions ADD-OPTIMALS: Innovative feed additives

KSE Process Technology B.V

Rondleg 27, Bladel, 5531 AJ, Netherlands
Tel: +31 497 383 818
Fax: +31 497 383 840
Web: www.ksegroup.com
E-mail: info@kse.nl

KSE Process Technology is a specialist in dosing and weighing technology for animal feed. We offer a robust portfolio of equipment and factory automation for all dosing ranges with a specialty blend of knowledge in the animal feed industry, built on over 80 years of experience.
KSE supplies machinery for each step within the production process from intake of raw materials to solutions for the distribution of finished products.

Agents:
China - Yisun Engineering & Machiners Co.Ltd.

MALAYSIAN VACCINES AND PHARMACEUTICALS SDN BHD

Lot 11182, Batu 21, JalanPuchong, Kajang
Palau Meranti off Cyberjaya
Puchong, Selangor, Malaysia
Tel: +60 03-8061 5701
Fax: +60 03-80612551
Web: www.mvp.com.my
E-mail: drfarah@mvp.com.my / mvpmarketing@mvp.com.my

MVP is the "sole veterinary vaccines manufacturer" that produces MYVAC brand of live and inactivated vaccines that are safe and effective in protection against debilitating diseases such as Newcastle Diseases, Infection Bronchitis, Gumboro Diseases, Fowl Pox, Duck Pasteurellosis and Fowl Cholera. The vaccines are produced in accordance to GMP that requires significant standard of safety, quality and efficacy.

Agents:
Indonesia - Biomedical Technology Indonesia
Malaysia - Zagro Chemicals SDN BHD
Philippines - Universal Robina Corporation
Thailand - Advance Pharma

Marel Poultry

PO Box 118
Boxmeer, 5830 AC,
Netherlands
Tel: +31 48 5586111
Fax: +31 48 5586222
Web: www.marel.com/poultry
E-mail: info@plassonlivestock.com

Marel Poultry is the global supplier of poultry processing equipment, providing inline systems and solutions for each process stage and every capacity level. The product range includes live bird supply, stunning, killing, scalding, de-feathering, evisceration, giblet harvesting, chilling, grading, cut-up, deboning, X-ray bone detection, portioning, production software and service contracts.

Agents:
Australia - Marel Stork Food Systems Australasia (Pty) Ltd.
Bangladesh - Axon Ltd.
China - Marel Beijing Trading
Indonesia - Marel International BV
Japan - Marel Japan Co., Ltd.
Philippines - Marel Food System Ltd
Philippines - Vemaval Incorporated
Singapore - Advance Farm Systems Pte Ltd.
Sri Lanka - Bodum Engineering Solution ltd
Taiwan - Ever Prima Co. Ltd.
Thailand - K-Plus Engineering Co. Ltd.
Vietnam - Peja Vietnam

Plasson Ltd Israel

Maagan Michael
D.N. Menashe
3780500
Israel
Tel: +972 73 2413001
Web: www.plassonlivestock.com
E-mail: info@plassonlivestock.com

Agents:
China - Plasson (Qingdao) Livestock Technology co., Ltd.
Japan - Tohzai Sangyo Boeki Inc.
Japan - Yamamoto Corp.
Philippines - Belmont Agricorp
Philippines - Jemcy Enterprises
Singapore - KENG KOOI INTERNATIONAL PTE LTD
Thailand - Kasethpand Industry-KSP Equipment Co. Ltd.

Socorex Isba SA

Chemin de Champ-Colomb 7a
Ecublens, 1024 , Switzerland
Tel: +41 21 6516000
Web: www.socorex.com
E-mail: socorex@socorex.com

Unipoint AG

Gewerbestrasse 2
Ossingen
CH-8475
Switzerland
Tel: +41 52 3052041
Fax: +41 52 3052042
Web: www.unipoint.ch
E-mail: info@unipoint.ch

Klinofeed® is the unique feed-additive with a high capacity to bind Ammonium and Mycotoxins. Klinofeed is the original product, EU-registered by Unipoint AG, as feed additive No.: 1g568.
Please ask us about Klinofeed: info@unipoint.ch

Section 03

Australia

Marel Stork Food Systems Australasia (Pty) Ltd.

Unit 1, 53 Neumann Road,Capalaba, 4157
Tel: +61 7 39003000
Fax: +61 7 39003033
Web: www.marel.com/australia/
E-mail: info@marel.com

Bangladesh

AFS Enterprise

Banani,Dhaka,
1213
Tel: +880 2 9858404
Fax: +880 2 9858547
E-mail: wasusalam@hotmail.com

Axon Ltd.

Apt. 18, House 541
Road - 12,
Baridhara DOHS
Dhaka,
1206
Tel: +880 2 8417331
Fax: +880 2 8417330
E-mail: info@axon-group.net

China

Big Dutchman (Tianjin) Livestock Equipment Co. Ltd. Beijing Branch Com.

13/FI, Tower A
Wangjing Building No. 9
Wangjing Zhonghuan Nan Road
Chaoyang District/Beijing
100102
Tel: +86 10 64761888
Fax: +86 10 64761999
Web: www.bigdutchmanchina.com
E-mail: bdcnsales@bigdutchman.com

Marel Beijing Trading

No. A608, Yeqing plaza
Building A, Yeqing Plaza 9
Wanqing north Street, 100102
Tel: +86 10 89472150
Fax: +86 10 89472350
E-mail: china.poultry@marel.com

Liuting Airport Industrial Par

Qingdao, Shandong
Tel: +86 185 63961068/532 67762109
Web: www.plasson.cn
E-mail: serah@plasson.cn

Yisun Engineering & Machiners Co.Ltd.

Shanghai
Tel: +86 185 0215 9823
Web: http://www.yisunem.com
E-mail: ss@yisunem.com

India

BD Agriculture India Pvt. Ltd.

No. 8-2-293/82/A/666
Road No. 34, Jubilee Hills
Hyderabad, 500033
Tel: +91 40 33163112
E-mail: bdindia@bigdutchman.com

Indonesia

Biomedical Technology Indonesia

TmnKencana, No 3 Bogor, West Java.
Tel: +62 (856) 7158567
Web: http://www.blst.co.id/
E-mail: bti.blst@gmail.com

Marel International BV

Stork House, Jalan Rawa Pandan No. 19 B
Tomang Raya, Jakarta, 11430
Tel: +62 21 56974008
Fax: +62 21 56959071
E-mail: indonesia.poultry@marel.com

Pesona Scientific

Komplek Kopo Mas Regency
Bandung, 40225
Tel: +62 22 5430583
Fax: +62 22 5430314
E-mail: cvpesona@bdg.centrin.net.id

PT BD Agriculture Indonesia

Green Office Park 6,
Wing A
3rd Floor
Zone 6
Jl. Grand
Boulevard, BSD Green Office
Park, BSD City, Tangerang, 15345
Tel: +61 21 29580286
Fax: + 62 21 29580275
E-mail: bdai@bigdutchman.com

Japan

Marel Japan Co., Ltd.

162, Morita Takuchi, Okubo
Akashi City, Hyogo
674
Tel: +81 78 9341610
Fax: +81 78 9340204
E-mail: info.poultry@marel.com

Nakajima Seisakusho Co. Ltd.

Nagano City, 33 Ai Shinonoi
Nagano Pref.
388-8004
Tel: +81 262 921203
Fax: +81 262 931611
E-mail: info@nakamatic.co.jp

Tohzai Sangyo Boeki Inc.

2-Chome, 17 Yushima
Bunkyo-Ku, Tokyo, 113-0034
Tel: +81 3 38154491
Fax: +81 3 38154456
E-mail: it@tohzai-sangyo.co.jp

Yamamoto Corp.

66-2 Kamihina-Shi
Hozu-Cho
Kyoto
Tel: +81 771 251451
Fax: +81 771 251453
Web: www.yamamoto-corp.jp
E-mail: k-shimoo@yamamoto-corp.jp

Korea

Ganong International Co. Ltd

349-1
Cheonhyun-Dong
Hanam-shi
Kyunggi-Do
South Korea
465-816
Tel: +82 23 4366790
Fax: +82 31 7926305
Web: www.ganongbio.co.kr

Samsung MS

29-23
Bakdalro 275gil

Anyang-si, Kyunggi-do

430-849
Tel: +82 31 4037291
Fax: +82 31 4037295
E-mail: ds2hns@hanmail.net

Yushin Corporation

7F
751 Bldg.

Kangnam-Ku

KR Seoul
135-010
Tel: +82 2 5682525
Fax: +82 2 5693113
E-mail: ryushin@netsgo.com

Malaysia

BD Agriculture (Malaysia) Sdn Bhd
No.9 Persiaran Astana/ KU2
Bandar Bukit Raja, Klang, 41050
Tel: +60 33 3483555
Fax: +60 33 3483828
E-mail: bdasia@bigdutchman.com

Zagro Chemicals SDN BHD
27, Jalan PJS 3/34, Taman Sri Manja, 46000
Petaling Jaya, Selangor
Tel: +60 7783-0766
Web: www.zagro.com.mm

Myanmar

BDA Agriculture (Myanmar) Ltd.
No.(94), 4th Street (South)
Ward (East Gyogone)
Insein Township, Yangon, 11012
Tel: +95 1 640799
Fax: +95 1 640824
E-mail: bdmm@bigdutchman.com

Pakistan

Eastern Veterinary Services
Office 7, 2nd Floor, Allied Commercial Plaza
Chandi Chowk, Murree Rd, Rawalpindi
Punjab, 46000
Tel: +92 514927362
Fax: +92 514927361
E-mail: estrnbio@dsl.net.pk

Philippines

BD Agriculture (Philippines) Inc.
39th floor Joy Nostalg Center
#17 ADB Avenue,
Ortigas Center
Pasig City, 1605
Tel: +63 2 3692962
Fax: +63 2 5014956
E-mail: bdphl@bigdutchman.com

Belmont Agricorp
Legaspi Tower 100, Legaspi Village
Makati City
Tel: +63 2 8159861
Fax: +63 2 8127905
Web: www.belmontagri.com
E-mail: belmont@belmontagri.com

Jemcy Enterprises
609 Brgy. San Miguel
Tel: +63 917 5040095/916 6066757
Fax: +63 43 7782290/3182490
E-mail: info@jemcyenterprises.com

Marel Food System Ltd
#1 Langka Road, FTI Complex
Taguig, Metro Manila
Tel: +63 2 4020601
Fax: +63 2 8383913
E-mail: asia.poultry@marel.com

P & J Agricultural Trading
184, St. Antonio Ave.,
Manila
Tel: +63 2 6410053
E-mail: bobby@pjagri.net

Universal Robina Corporation
8thFlr Tower Bridge town
E. Rodriguez Ave., C5 Road, Ugong Norte, Quezon City
Tel: +63 395-2783
Web: www.urc.com.ph

Vemaval Incorporated
#1 Langka Road,
FTI Complex
Taguig, Metro Manila
Tel: +63 2 8384647
Fax: +63 2 8384540
E-mail: vemaval@info.com.ph

Singapore

Advance Farm Systems Pte Ltd.
No. 57, Ubi Avenue 1
#07-1
Ubi Centre, 408936
Tel: +65 67486613/17
Fax: +65 67457687
E-mail: kmpow@advancefs.com.sg

KENG KOOI INTERNATIONAL PTE LTD
204 PETIR ROAD #04-62
670204 SINGAPORE
E-mail: kengkooiinternational@gmail.com

Morgan Enterprise
Bedok Centre, 914614
Tel: +65 93832534
E-mail: tanchinleong2001@yahoo.com.sg

Sri Lanka

Bodum Engineering Solution ltd
no 20/11 epitanulla lane,
pitakotte
Tel: +94 11 4510719
Fax: +94 11 2827957
E-mail: bodum@sltnet.lk

Taiwan

Bartholomew Lo, Siu-Man
#50, Floor 8-1,
Chung Ching 1 Street
Jen-Te Shiang - 717,
Tainan Hsien
Tel: +886 9 39375876
Fax: +886 6 2709332
E-mail: bart@bigdutchman.com

Ennchih Co. Ltd.
No. 310 Chung Shan S. Rd,
Taoyuan Hsien
Tel: +886 347 58168
Fax: +886 347 53803
E-mail: ennchih3@ms6.hinet.net

Ever Prima Co. Ltd.
4th Floor, No. 77, Le Shan Street,
Nei Hu Chu, Taipei
Tel: +886 33821717
Fax: +886 2 26270211
E-mail: info.poultry@marel.com

Global Ace Trading Co.
11-F-1,
No. 239,
I Hsin
1st Rd.,
Kaohsiung
Tel: +886 7 3335481
Fax: +886 7 3314190
E-mail: simon9@ms23.hinet.net

Thailand

Advance Pharma
97 Yenchit Road,
Tungwatdon
Sathorn Bangkok,
10120
Tel: +62 7808800
Web: www.advancepharma.co.th

BD Agriculture (Thailand) Ltd.
Block F7 & F8
41/76 - 77 Moo 6 Bangna
Trad Rd. Km 16.5,
Bangchal
Bangplee, Samutprakarn,
10540
Tel: +66 2 3496531
Fax: +66 2 3496535
Web: www.bigdutchman.co.th
E-mail: bdt@bigdutchman.com

Kasethpand Industry-KSP Equipment Co. Ltd.
100 Mu 3, Soi Suksawad 76
Bangjak, Prapadang
Samutprakam, 10130
Tel: +66 2 8176410
Fax: +66 2 8176439
Web: www.kpithailand.com
E-mail: vorowut@kpithailand.com

K-Plus Engineering Co. Ltd.
299/132 Areeya Mandarina
Sutthisarn Winijchai Road
Samsennok, Huaykwang
10310
Tel: +66 2 2748673
Fax: +66 2 7196092
E-mail: kplus.engineering@gmail.com

Vietnam

BD Agriculture (Vietnam) Co., Ltd.
Saigon Royal Building
91 Pasteur Street
Ben Nghe Ward
District 1
Ho Chi Minh City
Tel: +84 8 39390948/49
Fax: +84 8 39390951
E-mail: bdvietnam@bigdutchman.com

Peja Vietnam
Unit 806, Me Linh Point Tower
2 Ngo Duc Ke Street
8th Floor
1st District
Ho Chi Minh City
Tel: +84 8 8293503
Fax: +84 8 8251021
E-mail: info@pejavietnam.com

BKT introduces three new V-FLEXA sizes

TYRE MANUFACTURING COMPANY BKT has introduced three new V-FLEXA sizes. VF 600/65 R 26.5, VF 650/55 R 26.5 and VF 560/60 R 22.5 are the new solutions which are part of this radial tyre range designed for agricultural trailers.

However, it is not just a question of new sizes: the expansion of this range is a further step towards more sustainable agriculture, a necessary and essential condition for the future of the sector.

BKT has for some years adopted for its solutions increased flexion (IF) and very high flexion (VF) technologies. Products which include IF technology can transport 20% more weight with the same air pressure as standard tyres. VF (Very High Flexion) technology instead lets the tyre transport 40% more weight at the same air pressure as a standard tyre, as happens for solutions in the V-FLEXA range.

Presented at Agritechnica 2019, V-FLEXA is a radial tyre dedicated to agricultural trailers. The latest-generation Flotation product features a tread with three belt layers in HD (Heavy Duty) steel which provides greater strength to the casing and hence resistance against damaging attacks. Its extra-large tyre print enables perfect load distribution, but still operating delicately on the land where necessary, thus avoiding soil compaction and maintaining the value of crops. Self-cleaning, durability and low rolling resistance complete the qualities which characterise products in this range.

Image credit: BKT

V-FLEXA is a radial tyre dedicated to agricultural trailers.

Chore-Time unveils direct-drive ENDURA Fan

CHORE-TIME, A LEADING global provider of complete end-to-end systems for poultry and egg production, has introduced direct-drive models of its innovative ENDURA Fan. The new 57-inch direct-drive fans meet grower requests for low maintenance while maximising energy efficiency through variable-speed capabilities.

With no belts, pulleys or bearings, the direct-drive motor eliminates the need for regular greasing, as well as other common maintenance needs on ventilation systems. For further reliability, the proven ENDURA Fan design materials were strategically selected to provide corrosion resistance, high strength, and maximum durability in both extreme high and extreme low temperatures.

The direct-drive ENDURA Fans is said to efficiently produce one of the highest airflow ratings in the industry. Variable speed functionality allows growers to achieve further energy savings by slowing the fan whenever the air flow requirements allow. Fan speed is controlled automatically by a CHORE-TRONICS 3 Controller, in combination with a variable frequency drive.

Greater efficiency comes from the use of Chore-Time's HYFLO Shutters featured on the ENDURA Fans. HYFLO Shutters do not suffer the typical 12-15% loss of efficiency and air speed typical of dirty louver-style shutters, so air speed is maintained to the end of the flock, when it is needed most.

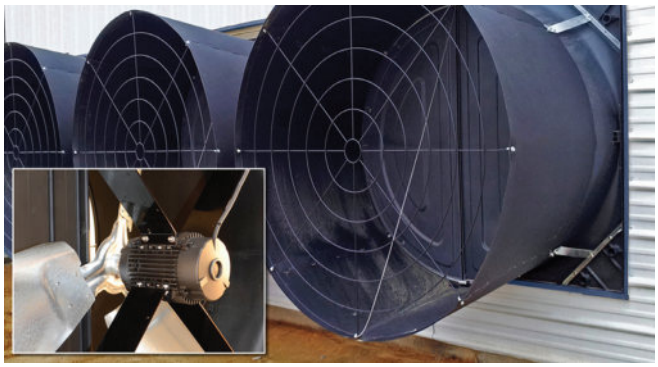


Image credit: Chore-Time

The units are engineered to have a slight downward tilt, making them self-draining.

Reader Information Service

Issue 1 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.

Surface Rates:	**1 year:**	£57	US$111	Euro €93
	2 years:	£97	US$189	Euro €158
	3 years:	£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

- ☐ 01 Government: municipal services, diplomatic, (UN, International Agencies)
- ☐ 03 Educational/Research Institutes
- ☐ 06 Commercial Services: banking, finance, insurance
- ☐ 08 Import/Export Agents and Distributors
- ☐ 09 Farms and Plantations
- ☐ 11 Food Processing: poultry, dairy, cereal, fruit, vegetables, etc
- ☐ 12 Aid Organizations
- ☐ 13 Agricultural Equipment and Material Manufacturers: irrigation, agro-chemicals
- ☐ 16 Others: please specify:

4. Type of produce

- ☐ 01 Rice
- ☐ 02 Grain
- ☐ 03 Fruit
- ☐ 04 Cocoa
- ☐ 05 Coffee
- ☐ 06 Cotton
- ☐ 07 Rubber
- ☐ 08 Palm Oil
- ☐ 09 Palm Kernels
- ☐ 10 Sugar Cane
- ☐ 11 Feedstuffs
- ☐ 12 Groundnuts
- ☐ 13 Vegetables
- ☐ 14 Cassava
- ☐ 15 Dairy Cattle
- ☐ 16 Beef Cattle
- ☐ 17 Sheep/Goats
- ☐ 18 Pigs
- ☐ 19 Poultry
- ☐ 20 Fisheries

The resort also houses a greenhouse where flora and fauna suitable for local conditions are grown utilising resources from the region.

Image credit: Adobe Stock

Raising sustainable agriculture awareness in Cambodia

Cambodia is focusing on reviving its agricultural sector for the sustainable development of the entire agricultural value chain.

AROUND THE WORLD, the COVID-19 pandemic has reset fundamental assumptions underpinning various industries. In Cambodia, environmental conservation is now an important feature in recovery efforts for the agriculture sector, and Neak Oknha Chen Zhi and Prince Group are spearheading change in the sector.

Agriculture is a mainstay in Cambodia employing more than a third of the workforce, and the current crisis is an important moment for the sector as it faces an opportunity to "build back better", according to CGIAR, the world's largest agricultural research network.

Developing countries like Cambodia depend on agricultural exports and need to move away from traditional farming practices that utilise fertilisers, pesticides, water-intensive processes and legacy farming methods that contribute to increased deforestation and soil erosion.

In 2020, Chen Zhi and Prince Group launched the Ecological Agriculture Plantation at Prince Manor Resort in Phnom Penh, Cambodia, an agricultural hub at a new real estate development that will implant the seed for change and give Cambodians a chance to learn modern farming techniques. The Ecological Agriculture Plantation is one of the major attractions at Prince Manor Resort, an international eco-resort spanning 136,000 sq m that was officially launched in October 2020.

At the resort, visitors will see sustainable agricultural practices and how modern technology is employed and managed by international and Cambodian agriculture experts. For example, the 10,000-sq m plantation has a 24-hour intelligent monitoring system that controls humidity, temperature, sunlight, carbon dioxide and more. It also has reverse osmosis water filtration and intelligent water and fertiliser integrated systems. The resort also houses a greenhouse where flora and fauna suitable for local conditions are grown utilising resources from the region.

The plantation will serve as an educational tool for visiting students, families and other stakeholders. As a responsible corporate conglomerate, Chen Zhi and Prince Group launched the resort to support the long-term development of the local tourism and agriculture industries in Cambodia.

With nearly nine-tenths of the resort consisting of forested land, Prince Manor Resort will also serve as a model for sustainable development efforts in Cambodia's fast-growing economy. Other facilities at the resort include flower gardens, an amusement park, a water park and several lodges.

Even before the pandemic, farmer incomes in Cambodia had been hit by extreme weather that led to floods and droughts, and drop in prices of important agriculture commodities like paddy rice, cassava and other vegetables as well as declining soil productivity.

The construction of the Ecological Agriculture Plantation by Chen Zhi and Prince Group is a small but important step to help Cambodia's agriculture sector. The plantation will facilitate visits and discussions helping drive further collaboration between industry bodies, the government and private enterprises in Cambodia. ■

Nuova CoreTech

High performance, customized evisceration

The CoreTech makes sophisticated Nuova technology available to poultry processors with a vision.

- Highly efficient, consistent, reliable evisceration
- Positions viscera pack over the back of the product
- Grows with the market by doubling the number of units
- Easily upgradable to a full-featured Nuova (rehanging of viscera pack for manual or automated giblet harvesting)

Contact us to find out more:
info@marel.com
marel.com/coretech

TRANSFORMING FOOD PROCESSING

marel