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Livestock:

Animal biosecurity networks

Improving ecosystems

for fisheries



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United Kingdom : ☎ +44 20 7834 7676 | ✉ martyn.black@alaincharles.com

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Far Eastern Agriculture



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Editor: Deblina Roy
 Email: deblina.roy@alaincharles.com
 Editorial and Design team:
 Prashanth AP, Fyna Ashwath, Miriam Brtkova, Praveen CP
 Manoj Kumar K, Emmet McGonagle, Nonalynka Nongrum
 Rhonita Patnaik, Samantha Payne, Rahul Puthenveedu
 and Louise Waters
 Managing Editor: Georgia Lewis
 Publisher: Nick Fordham
 Sales Director: Michael Ferridge
 Magazine Manager:
 Richard Rozelaar, Tel: +44 207 834 7676
 Email: richard.rozelaar@alaincharles.com

India **SATYANARAYAN NAIDU**
 +91 98 33055655
 satyanarayan.naidu@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 **VISHNU VIJAYAKUMAR**
 +971 4 448 9260
 vishnu.vijayakumar@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, Nelly Mendes
 Infant Prakash and Hariharan PM
 Email: production@alaincharles.com
 Subscriptions: circulation@alaincharles.com

Chairman: Derek Fordham
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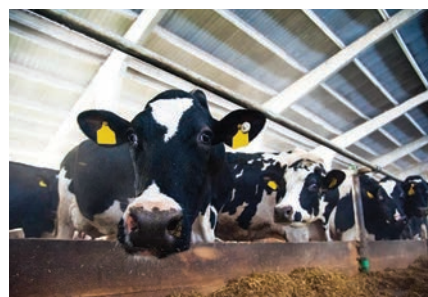
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Vietnam's agri sector aims to achieve three per cent annual growth

THE GROWTH RATE of Vietnam's agriculture sector production value in the Q1 2019 was estimated at 2.69 per cent as compared to the Q1 2018, according to Le Van Thanh, chief of the Ministry office.

In this, agriculture increased by 1.93 per cent, forestry increased by 4.32 per cent and fisheries increased by 5.24 per cent.

The GDP of agriculture in the first quarter was estimated at 2.68 per cent, in which, agriculture increased by 1.84 per cent, forestry increased by 4.2 per cent and fishery increased by 5.1 per cent.

Ha Cong Tuan, permanent deputy minister of agriculture and rural development, emphasised that the agricultural sector was determined to achieve three per cent growth in 2019.



Image credit: Sasin Tipchai/Pixabay

Vietnam is taking a number of initiatives to boost its agricultural production.

Le Thanh Hoa, deputy director of the Department of Processing and Trade for Agro-Forestry-Fisheries, said that in the field of rice export, the Plant Protection Department has made an evaluation report on the capacity of rice exporting enterprises for Chinese customs. After Chinese customs approves the enterprises, the situation of rice exports is set to grow in the coming days.

The Ministry of Industry and Trade will negotiate rice export quotas into Korea. Indonesia announced that rice reserves will run out in June, therefore, in the third and fourth quarter, this market is expected to increase rice imports. The Philippines market has opened negotiations for import contracts. With such signals, rice exports are expected to flourish.

South Korea and North Korea to cooperate on ASF prevention for livestock

DUE TO THE rapid onset of African Swine Fever (ASF) in a number of Asian countries, South Korea is set to collaborate with North Korea to prevent the contagious animal disease.

As reported in the *Trend News Agency*, a unification ministry official from South Korea said that the government is monitoring the situation and the collaboration will seek to protect both the countries livestock sector.

ASF outbreak in China and its detection in areas more than 1000 km apart within the country pose significant threat about the spread to other Asian countries anytime, according to the UN's Food and Agriculture Organization (FAO).

In a report, FAO mentioned North Korea, Mongolia, the Philippines and Thailand as countries at high risk over livestock and animal health due to the spread of ASF, noted the source.

FAO's Emergency Centre for Transboundary Animal Diseases (ECTAD) is communicating closely with the concerned authorities to monitor the situation and to respond effectively to the outbreak in the region, to raise the importance of preparedness to respond to the threat of further spread.



Image credit: Adobe Stock

FAO is closely monitoring the situation in the Asia-Pacific region.

IRRI, WorldFish and IWMI unite on rice-fish R&D project in South and Southeast Asia

THE INTERNATIONAL RICE Research Institute (IRRI), WorldFish and the International Water Management Institute (IWMI) have signed a five-year MoU agreement for joint R&D initiatives on sustainable rice-fish production systems in South and Southeast Asia.

The agreement aligns with the CGIAR 2030 Plan which is set to tackle challenges related to sustainability, nutrition, genetics, socio-economics and information and to contribute to the United Nations Sustainable Development Goals (SDGs) through greater cooperation between centres.

Under the MoU, IRRI, WorldFish and IWMI will co-develop and implement R&D activities to discover the impact of rice-fish production systems on environmental, socio-economic, and cultural values on land and waterways. The R&D projects will be developed based on themes which include constructed water bodies, rice-fish landscapes, climate resilience and water, trade-offs and foresight analysis and ICT and big data.

"This agreement exemplifies a food systems approach to transforming the global rice sector. The combined global research expertise and influence of IRRI, WorldFish and IWMI in the core elements of diets such as rice and fish, as well as land and water systems, make this strategic collaboration essential to a food systems revolution," said Matthew Morell, director general at IRRI.

Gareth Johnstone, director general at WorldFish, commented, "This partnership helps create better synergies for leveraging our individual research expertise and network strengths to accelerate the sustainable supply of nutritious fish and rice into national, regional and global food systems."

"We envision a sustainable food, nutrition, and water secure world and this strategic partnership get us closer to that goal," according to Mark Smith, deputy director general for R&D at IWMI.



Image credit: Adobe Stock

The aim is to accelerate sustainable supply of nutritious fish and rice into national, regional and global food systems.

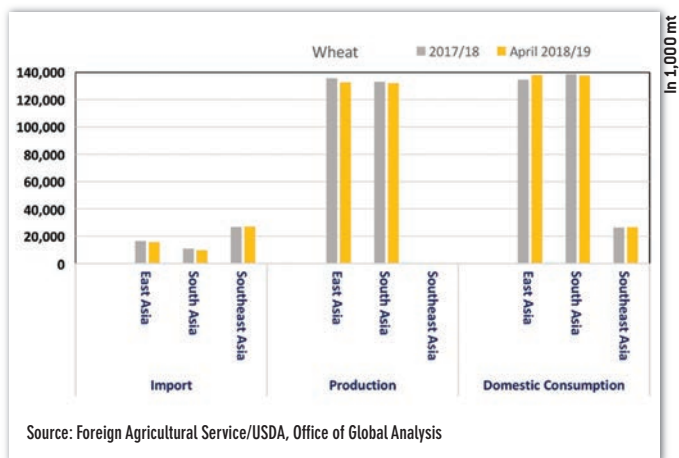
New trends in Asian grain market

A NEW UNITED States Department of Agriculture (USDA) report has analysed global grain market and trade potentials, identifying major driving factors in Asia.

Wheat

According to the USDA, global wheat consumption is down in 2018/19 mainly due to lower feed and residual use in the European Union (EU) and Iran. Global trade is down as lower imports for Bangladesh, Saudi Arabia, the UAE and Vietnam more than offset higher demand from Indonesia and Philippines.

Smaller global production leads to lower consumption and tighter stocks. Global ending stocks are projected slightly lower, but more than half of that total is accounted for by China. The stocks/use ratio for the world less China is projected at 22 per cent, the tightest in over a decade.



Beyond China, another exception to the tightening of global stocks is India, where stocks are up significantly in 2018/19 after the country harvested back-to-back record crops. With larger stocks, India has transitioned away from being a major importer, but exports are still not significant, said the USDA.

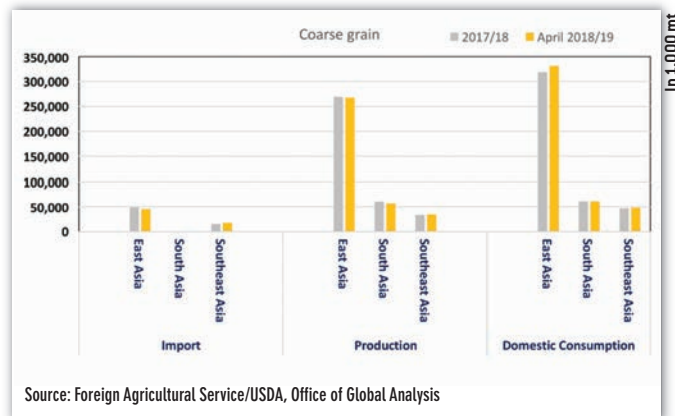
Philippines is projected to import a record seven million tonnes of wheat for 2018/19. For the past several years, wheat imports have been rising as demand for food and feed grains increases with the growing population. Although primarily a rice-based diet, Philippines preferences are shifting from corn-based products to incorporating more affordable wheat products, stressed the USDA.

Coarse grains

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) implementation and corresponding tariff cuts seem unlikely to cause Japan to change its suppliers of corn, sorghum and distiller's dried grains with solubles (DDGS) for feed purposes in the short-term as imports of these commodities are duty-free.

Though Japan currently imports a substantial amount of feed corn, sorghum and DDGS from the USA, it is possible that Japanese preferences for grains will shift over time as a result of closer ties to other CPTPP nations, particularly Australia and Canada.

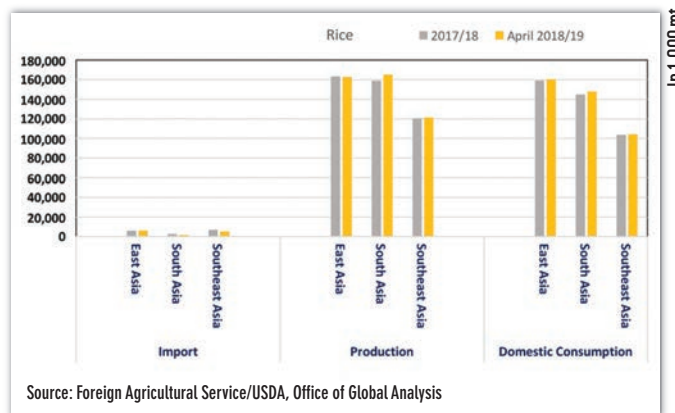
The USA food barley represents around 10 per cent of Japan food barley imports. According to Japan's official trade data, the average landed value of the USA food barley is up to 60 per cent higher than



for Australian and Canadian barley, which could represent a quality preference and a willingness to pay a premium. CPTPP creates an incrementally growing quota and gradually decreases the government markup for CPTPP-sourced barley, which could pose a threat to the USA food barley exports to this niche market, according to the USDA.

Rice

China has emerged as a significant exporter of milled rice. Medium grain trade constitutes a small portion of total global rice trade and has been dominated in recent years by USA and Australian exports.



China's exports of this class of rice had been muted and on a long-term downward trend, reflecting relatively high domestic prices. In 2018, China's exports were up eightfold from a couple years before, surpassing the quantity exported in 2003 and hitting a new record.

Indonesian rice imports in 2019 are expected to decline around 80 per cent compared to last year. Its reduced presence as a major importer is one reason for lower global trade in 2019, and this impact is expected to be felt by major suppliers such as Thailand and Vietnam. Despite a large and growing population, total consumption is expected to be steady in 2019 as Indonesians continue to shift to wheat-based products and diversify their diets as incomes grow, noted the USDA.

The 2019 crop is forecast slightly above last year's, with no major causes for concern, pointed out the USDA.

FOOD OUTLOOK

THE FAO FOOD Price Index* (FFPI) held steady in March 2019, averaging 167 points and still hovering around its highest value since August 2018. A sharp increase in dairy prices and somewhat firmer meat values were offset by declining cereal, oil and sugar price quotations.

The FAO Cereal Price Index averaged 164.8 points in March, down 2.2 per cent from February and now almost at par with its March 2018 value. Among the major cereals, wheat prices fell the sharpest, driven by large exportable supplies and a slack demand.

The FAO Vegetable Oil Price Index averaged 127.6 points in March, down 4.4 per cent from the previous month, mostly reflecting weakening values of palm, soy and rapeseed oils.

International palm oil prices contracted in March after three consecutive rises, underpinned by stock build-ups in major producing countries.

The FAO Meat Price Index averaged 162.5 points in March, up marginally 0.4 per cent from its revised value for February, continuing a trend of modest price volatility observed for several months. In March, price quotations for pig, bovine and poultry meats received some support from a surge in import demand, especially from China.



The FAO Dairy Price Index averaged 204.3 points in March, up 6.2 per cent from February, registering a third consecutive increase. In March, international prices of butter, whole milk powder (WMP) and cheese rose, underpinned by increased import demand.

The FAO Sugar Price Index averaged 180.4 points in March 2019, down 2.1 per cent from February 2019. India is expected to become the world's largest sugar producer, with the production estimates pointing to an eight-per cent increase during October 2018-January 2019.

EVENTS 2019

MAY

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 Pasay City, Philippines
www.livestockphilippines.com

27-29
Fruit Expo
 Guangzhou, China
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JULY

3-5
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www.indolivestock.com

AUGUST

27-28
African Farming's 2nd Edition Agribusiness Summit
 Abuja, Nigeria
www.agroinvestmentsummit.com

28-30
INAGRITTECH 2019
 Jakarta, Indonesia
www.inagritech-exhibition.net

Curbing plant pests and diseases

THE INTERNATIONAL PLANT Protection Convention has adopted standards on fumigation and six pests including *Xylella fastidiosa* and the oriental fruit fly.

The body charged with keeping plant pests and diseases at bay and trade in plants safe adopted new international measures to prevent pests from crossing borders and spreading.

The standards, including protocols to block highly invasive pests such as *Xylella fastidiosa* and the oriental fruit fly, were approved during the Commission on Phytosanitary Measures' (CPM) annual meeting.

FAO estimates that annually between 20 and 40 per cent of global crop production are lost to pests. Each year, plant diseases cost the global economy around US\$220bn and invasive insects around US\$70bn.



A technician checks olives for pests' infestations in Italy where Xylella fastidiosa has led to the decline of 180,000 ha of olive groves.

Image credit: FAO

INAGRITECH towards agricultural industry 4.0

WELCOMING THE 4.0 industrial revolution, the Indonesian government continues to encourage increased food production through various industries, one of which is agricultural technology.

Moreover, Indonesia is welcoming the Industrial Revolution 4.0 so that the use of technology is a necessity.

Indonesia has the opportunity to utilise excellence by increasing the scale of the domestic economy, especially in the agricultural sector.

On 22 October, the 2019 budget of the Ministry of Agriculture was approved by the House of Representatives Commission IV regarding adjustments to the Ministries and Institutions Work Plans and Budgets. There are a number of points agreed upon such as the Ministry of Agriculture's RAPBN, the Special Allocation Fund (DAK) in agriculture and the fertiliser subsidy ceiling.

The RAPBN of the Ministry of



The expo is set to boost sales and gain exposure.

Agriculture in 2019 was approved at US\$1.5bn.

The resounding big success of INAGRITECH 2018 held along with INAGRICHEM, SugarMach Indonesia, INAPALM Asia 2018 and Pump&Valve Indonesia which attracted 268 companies from 22 countries and 7,693 trade attendees from more than 25 countries, further proving as the ASEAN's most comprehensive trade show for agricultural equipment and technologies.

The expo has expressed a proven

opportunity to boost sales and gain exposure as well as meeting with important decision makers and potential buyers.

Reflecting on the success of INAGRITECH 2018 and huge demand for agricultural equipment and technologies in Indonesia, the 7th edition of **INAGRITECH 2019** from **28-30 August 2019** at **JIExpo, Jakarta**, will be expanded up to 30 per cent of exhibition area.

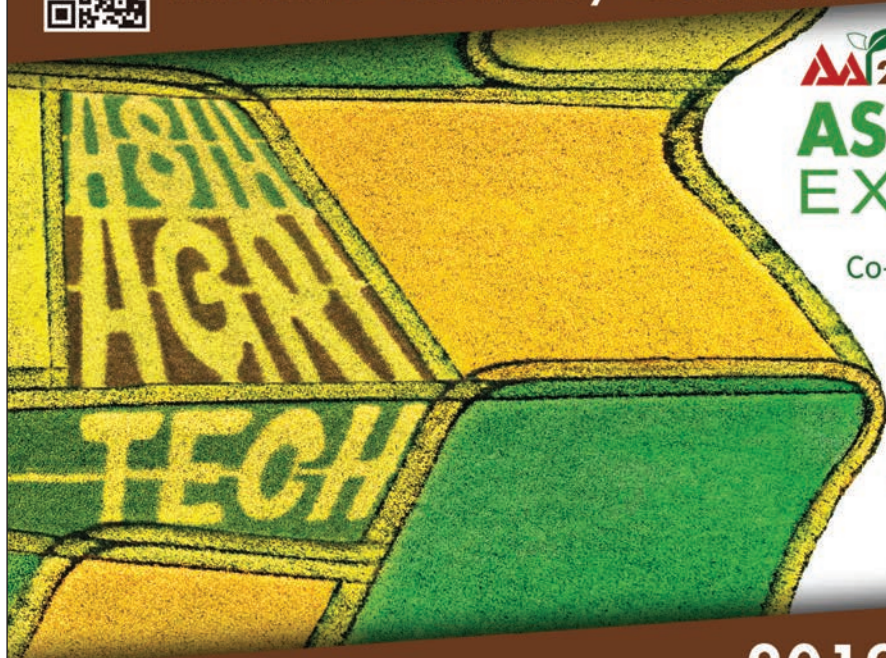
The expo will be held in conjunction with **HortiTech Indonesia 2019**, **INAPALM Asia 2019**, **INAGRICHEM 2019** and **SugarMach Indonesia 2019**. It will be definitely become one of INDONESIA's most prospective one-stop exhibitions for agricultural machinery and chemical, horticultural technology, palm oil and sugar processing technology under one roof.

For more information, please visit www.inagritech-exhibition.net



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T A I W A N

Livestock and Aquaculture Philippines is back in June 2019

Around 280 exhibitors from more than 30 countries are expected to attend the event.

MODERN MEAT PROCESSING, packaging equipment, technology and retail solutions in meat production and aquaculture technologies will be featured in the next edition of Livestock and Aquaculture Philippines at the World Trade Centre Metro Manila, Pasay City.

Organised by UBM Exhibitions Philippines, a part of UBM Asia, the event will be held from 26-28 June 2019, providing broader opportunities for exhibitors and visitors to inspect livestock nutrition, health and production, aquaculture, fisheries and seafood industries in the region.

Supported by the Department of Agriculture, Livestock Philippines is expected to bring together a wide range of decision makers including integrators, farmers, feed millers, pre-mixers, meat processors, slaughter houses, veterinarians, distributors, retailers and other industries. Livestock Philippines is co-hosted by Bureau of Animal Industry (BAI) and National Meat Inspection Service (NMIS).

Co-located with Livestock Philippines, Aquaculture Philippines is set to provide exhibitors with unique opportunity to launch new products, meet decision-makers and promote their services. The event will provide aquaculture professionals with direct access to qualified buyers and suppliers from all over the globe representing all aspect of the aquaculture industry.

Around 280 exhibitors from more than 30 countries are expected to attend the event. Some of the countries that will be represented include Australia, Belgium, Bulgaria, Canada, China, Denmark, England, France, Germany, Hungary, Indonesia, Israel, Italy, Japan, Malaysia, New Zealand, Poland, Russia, Serbia, Singapore, South Korea, Spain, Sweden,



Egg packaging and processing technologies will be showcased during the event.

Image credit: UBM Exhibitions Philippines

Taiwan, Thailand, The Netherlands, Turkey, the UK, the USA, Vietnam and more.

Industry leaders are all set to be assembled from the sectors such government (agriculture department and its attached livestock agencies), farmers, veterinarians, animal nutritionists, breeders, raisers, meat processors, feed manufacturers and millers, veterinary drugs and products manufacturers, integrators, importers, traders, researchers and academicians.

Some of the exhibitors profiles in the Livestock Philippines include animal identification tags and microchips, antibiotics and other anti-microbial, biotechnology, bio-gas facility installation, breeding techniques and management system software, computer-aided animal health and production system software, drinking nipples and water troughs, egg packaging, processing and grading machine, feed processing and manufacturing equipment and

machineries, government regulatory functions and services, insecticides, rodents and other pest control chemicals, livestock stalls, pens, cages and other housing materials, quality analysis laboratory tools and equipment, slaughterhouse tools, equipment, rendering and de-hairing machines, waste water treatment systems and many others.

Exhibitors profiles in the Aquaculture Philippines include aquaculture engineering, aquatic animal health, biosecurity, conservation and reservation aquaculture (shellfish), freshwater aquaculture and environmental impact, freshwater pond aquaculture, hatchery technology, high-functional materials made with marine life, marine resources application products, open ocean aquaculture, processing technology, seafood processing machinery, seafood transport and handling equipment, water quality and effluents, winches and deck equipment and many others. ■

Sustainable agri practices

The rapid increase in agricultural production will rely largely on more accurate crop water estimation and improvements in existing irrigation and drainage systems.



Sprinkler of automatic watering.

Image credit: Adobe Stock

TO GET THE full benefit of investments in agriculture, major effort is required to modernise irrigation and drainage technologies. Developing strategies which are appropriate for the financial, environmental and socio-economic trends of the farmers not only revitalise agri-production but also heavily uplift farmer communities in the rural areas.

A holistic approach to irrigation and drainage management can increase food production, conserve water, prevent soil salinisation and waterlogging, and eventually protect the environment.

In a paper written by Prof. Bart Schultz and Prof. Daniele De Wrachien, entitled "*Irrigation and Drainage Systems: Research and Development in the 21st Century*," it is noted that in the agricultural sector, the dwindling number of economically attractive sites for large-scale irrigation and drainage projects limits the prospects of increasing the gross cultivated area.

"Therefore, the required increase in agricultural production will necessarily rely largely on the affordability to apply new technologies, a more accurate estimation of crop water requirements and on major improvements in the construction, operation, management and performance of existing irrigation and drainage systems."

Depending on the environmental conditions, popular water applications methods are surface, basin, furrow, sprinkler, drip and subsurface irrigation."

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Principles of irrigation scheduling

Some of the considerations in planning irrigation and drainage projects include developing appropriate crop water application and transport system, reducing seepage and evaporation losses, selecting sites for soil water monitoring, land reclamation to increase efficiency of agricultural areas and others.

Climatic conditions such as solar radiation, humidity, speed of the wind and temperature are the major drivers of crop water application. These affect the energy, crop water usage, evapotranspiration and the rate of photosynthesis in a crop's environment.

Depending on the environmental conditions, popular water applications methods include surface, basin, furrow, sprinkler, drip and subsurface irrigation methods.

Surface irrigation, often referred to be as flood irrigation, is used where land has been graded and uniform slopes exist. In this system, water is applied at the corner in a field and then allowed to move over the entire surface to the other sides. The furrow method is one type of surface method which is mostly used for crops such as maize, cotton, sugar beets and potatoes.

In the sprinkler system, water is sprayed into the air through a pipe system to irrigate the entire land surface. This is suitable for row, field and tree crops. However, large sprinklers may not be appropriate for delicate crops such as lettuce as large water drops can damage the crop.

Drip irrigation is a kind of micro-irrigation system that aims to save water and nutrients by allowing water to drip slowly to the roots of plants. In this method, water can either be distributed from above the soil surface or directly into the root zone through valves, pipes, tubing and emitters. Crops suitable for drip irrigation include orchard crops such as grapes, banana, pomegranate, orange, citrus, mango, lemon, custard apple etc; oil seeds such as sunflower, oil

palm, groundnut etc and forest crops such as teakwood, bamboo etc.

For drainage systems, available options are deep and shallow tubewells, skimming wells, wide-spaced and narrow-spaced drainpipes, deep and shallow ditches, surface drainage and subsurface drainage.

Surface drainage is the removal of excess water from the land surface via shallow ditches which discharge into larger collector drains. Subsurface drainage is the removal of water from the rootzone via deep open drains or buried pipe drains.

Trends in irrigation and drainage technology

As described in the paper, some basic aspects which are important in the process of technological innovation and improvement include planning and design; management, operation and maintenance; performance assessment; constraints and environmental impacts; modernisation and integrated use of surface and subsurface water resources.

“Planning and design of irrigation and drainage systems has to deal with different aspects such as design criteria and design methods, materials, construction, maintenance, control and inspection equipment, institutional and financial aspects of system construction, operation and maintenance,” said the source, noting that these will enhance crop yield and production.

Good management, efficient operation and well-executed maintenance of irrigation and drainage systems are basic requisites for improving agricultural water management and to ensure sustained production. “To enhance system performance and assure the ongoing integrity of its facilities good management skills are required to effectively co-ordinate the physical, human and financial resources involved in the system.”

Modernisation entails increasing the original irrigation and drainage network's capacity to upgrade ageing systems to a sustainable level.”

The paper revealed, “Maintenance of irrigation networks should be carried out prior to the commencement of and/or during the irrigation season. The irrigation water is supplied in more or less

known quantities, whereas without maintenance, the crops will not receive adequate water supply. Maintenance of drainage systems is of a more preventive nature. It should be conducted before a, to a certain extent, unknown wet period, during which the drains have to fulfil their function.”

Constraints, environmental impacts and modernisation

The desired productivity can be hard to achieve if constraints on irrigation and drainage systems are not adequately addressed. According to the paper, technological problems and their adverse impacts on the environment are increasing because solutions have not been proven to be effective or because maintenance has been neglected and modernisation deferred.

All these constraints present major challenges to the sustainable development of water management for agriculture and require the combined effort of both individuals and communities. An integrated approach to irrigation and drainage is needed, aimed at increasing food production, water conservation, preventing waterlogging and soil salinisation and protecting the ecosystems.

In this regard, important areas that require constant attention are shortage of water supply at the source; poor canal regulation; poor operation and maintenance; waterlogging and salinity and water-related diseases and human health.

“There is a need to introduce more effective control structures within canal networks, to automate control, adopting modern information systems and to move towards more efficient operating practices. In this context, improved regulation of water delivery not only has the direct advantage of increasing crop yields, but also helps to control waterlogging and salinity,” emphasised the paper.

Modernisation entails increasing the original irrigation and drainage network's capacity to upgrade ageing systems to a sustainable level. “Most modern irrigation methods allow injection of fertilisers into the irrigation water, thus economising on fertiliser use and reducing soil and groundwater pollution,” noted the paper.

The paper further revealed, “As for drainage systems, modernisation measures should envisage new criteria for leaching of salts and pollutants, like pesticides and heavy metals. These criteria should achieve the right balance between agricultural production requirements and acceptable environmental impacts.” ■



Image credit: Adobe Stock

There is a need to introduce more run on control structures within canal networks to automate control and boost yield.

Spotlight on Asia's feed-to-food value chain



Image credit: VNU Exhibitions

With Asian markets in the lead, overseas visitors came from more than 120 countries.

Visitors experienced an entire feed-to-food offering at the show ground, apart from a wide range of conference and seminar programmes.

MORE THAN 45,000 professionals and industry experts visited the 2019 edition of VIV Asia in Bangkok, one of the leading international trade shows from feed-to-food for Asia.

Organised by VNU Exhibitions Asia Pacific and VNU Exhibitions Europe from 13-15 March, VIV Asia 2019 achieved seven per cent increase of visits from outside of the hosting country.

Biggest visitors' increase from overseas

With Asian markets in the lead, overseas visitors came from more than 120 countries. Around 65 per cent of the total 45,023 visits registered at VIV Asia 2019 came from outside of Thailand, confirming the

international flavour of this show where local visitors counted for 35 per cent, against the 39 per cent Thai visits audited in 2017.

China, the first visiting country after Thailand, significantly increased its attendance by 12 per cent compared to the previous edition. Following China, the top 10 visiting Asian markets were India, the Philippines, Vietnam, Indonesia, Malaysia, Bangladesh, Republic of Korea, Taiwan and Pakistan.

Exhibitor profiles increased 30 per cent in 2019, as compared to the 2017 edition."

Cambodia has positioned in the top 20 visiting countries completing more and more the ASEAN markets coverage at the 2019 show. Despite the air space closure affecting visitors' attendance right before the show dates, Pakistan managed to confirm its 11th position in the visiting countries' list. Some others in the top 20 visiting countries were Myanmar, Japan, Nepal and Iran.

With regards to the exhibiting offerings, VIV Asia has a more international flavour this time. Around 1,245 exhibitors from 62 countries covered at BITEC, a space of 31,007 sq m net (up 30 per cent from 2017) where 10 international pavilions showcased a number of new companies and brands.

In particular, the Canadian and Japanese pavilions marked their new entry into VIV Asia 2019, next to the recurring pavilions from Belgium, China, France, South Korea, Spain, Taiwan, Thailand and the USA. Finally, new exhibiting countries

represented by individual companies such as Cyprus, Ecuador, Finland, Jordan, Lithuania, Morocco, Myanmar, Paraguay, Tunisia and Uruguay.

Greatly satisfied expectations

Out of 10 points, the satisfaction rate reached 8.1 points among VIV Asia exhibitors and 8.6 among the visitors, according to a survey done by the organisers in the 10 days following the show.

The visitors spent more time at the showground, with second and third day re-visits increased by three per cent compared to 2017.

Several organised delegations, with the support of expert industry partners from China, Cambodia, Iran, the Philippines, South Korea, Nepal and other countries, had the chance to visit the show and to join tailor-made activities including guided tours at the show ground and special session selections.

Complete food value chain on display

Visitors experienced an entire feed-to-food offerings at the show ground, apart from a wide range of conference and seminar programmes to learn, network, and share knowledge.

Around 86 sessions were presented by partners, exhibitors and organisers. Around 200 high-level international speakers discussed on topics such as nature of farming in tropical areas, prevention of animal diseases, performance increase in pigs and poultry while reducing medication, shrimp farming technology and many others.

The visitors further talked about inspirational best practices and innovative technology for risk control and stress

reduction, market trends, regional policies, as well as technical and commercial topics.

Educational sessions

Educational and informative sessions were attended by a total of 5,396 visits over the three days at BITEC.

On the first day of the show, the Swine Raisers Association of Thailand organised a conference on “ASF: The disruption of ASEAN pig industry,” which received the biggest audience of 333 delegates.

Food engineering, processing of poultry and eggs, red meat, fish and dairy products were the major focus”

On the second day, the Federation of Asian Veterinary Associations (FAVA) organised a session on “AMR: from science to policy,” which attracted 231 attendees.

The “China connects” seminar, jointly organised by VIV Qingdao and VIV worldwide on the first day, welcomed 162 delegates. The session served as the networking platform to deepen the cooperation between Chinese animal husbandry and food industry and global industries.

The recent developments of the African Swine Fever (ASF), with a dangerous outbreak spreading from China to Vietnam right before the show dates, had the Thai government campaigning for farmers not to attend the show as a measure of containing the outbreak and protecting the swine sector in ASEAN. Certainly this had an

influence on show numbers.

On the other hand, the show represents a great opportunity for industry operators to build the knowledge on how to better manage these diseases, and thus the impact on the overall exhibition attendance was limited considering the relatively small drop in visits.

The food engineering related conferences were “MEAT 360° trend & innovation,” “Asian Food & Tech Trends” and “Food Engineering Conference.” The sessions received 319 visits. Food engineering including processing and handling represented 10.5 per cent of VIV Asia 2019 total show space, with 93 per cent increase compared to the previous edition.

The exhibition space showcased 24.5 per cent of farm production, six per cent of breeding and hatching companies, six per cent crop-tech and feed-tech solutions, 37 per cent feed ingredients and additives, 14 per cent of animal health enterprises and two per cent media and consultancy companies.

With a strong line-up of 100 companies featuring some of the global players in the primary and further processing of protein-based food, the newly branded food engineering section officially took off at VIV Asia 2019, aiming to become a significant pillar within the VIV portfolio.

Asian Personality Awards

As a way to acknowledge the importance of showing continuous dedication and passion for the industry’s developments and the VIV events, VIV worldwide together with Positive Action Publications hosted the Asian Personality Awards during the opening ceremony. The five personalities acknowledged this year were Rafael Monleon, Noplit Sermaksasitorn, Axel Arras, Alain Recroix and Prof Thaweesak Songserm.

Thinking ahead

VIV Asia launched a new VIV trade show and forum focusing on feed, pharmaceuticals and genetics in the animal protein production.

VIV health & nutrition Asia 2020 is the upcoming niche event by VIV worldwide, which will focus on the innovations in nutrition, pharmaceuticals and high-tech animal health solutions. The new show will be held in the same location of VIV Asia, at BITEC, on the even years, said the organisers.

The next edition of VIV Asia will be held in 2021. ■

For more details, click on www.vivasia.nl



Image credit: VNU Exhibitions

Sugarcane – getting to grips with Pokka Boeng disease

Dr Terry Mabbett has outlined possible strategies to control Pokka Boeng disease in sugarcane farming

TROPICAL CROP DISEASES such as coffee leaf rust and cocoa black pod are world-renowned for the damage they cause, but other crop diseases may be little known outside of those areas where significant yield losses are sustained. One such disease is Pokka(h) Boeng disease of sugarcane caused by the fungus *Fusarium moniliforme* and present in the sugarcane growing areas of India and Indonesia, especially where a hot dry season is followed by a warm wet season.

Pokka Boeng was originally described in Java. The name is a Javanese term denoting a malformed or distorted top, which is the fate of sugarcane suffering from this disease.

Pokka Boeng disease barely registers in other sugarcane growing areas of the world. Many in the agricultural community at large will not have even heard of Pokka Boeng disease of sugarcane, not because the causal pathogen is an obscure fungus. In fact, *Fusarium moniliforme* is well known as a pathogen of cereal crops like maize and wheat. A producer of highly toxic chemicals called mycotoxins is responsible for human disease if these fungal toxins get into the food chain via contaminated cereal grain. Here lies the vital reason why *Fusarium moniliforme* causes disease in sugarcane. Sugarcane is a much larger plant than either maize or wheat but like them is a ‘grass’ belonging to the same plant family, the Gramineae.

“Vigorously growing and young sugarcane crops at three-to seven-months-old are more susceptible to infection than older sugarcane stands.”

Symptoms of the disease

Majority of commercial sugarcane varieties are susceptible to Pokka Boeng disease. Vigorously growing and young sugarcane crops at three-to seven-months-old are significantly more susceptible to infection than older sugarcane stands. Three essentially different types of disease symptomatology are seen and recognised in the progress and development of Pokka Boeng disease.

Chlorotic phase – This is the first symptom to show as chlorotic (yellowing) areas towards the base of young leaves with subsequent malformation and distortion of these rapidly expanding immature leaves. Bases of affected leaves often appear narrower in dimension than the bases of correspondingly healthy leaves. Affected mature leaves will typically develop and display irregular reddish stripes and specks within chlorotic areas of a leaf. Leaf sheaths can also be affected in the same way, with chlorosis and accompanying reddish colourations.

Acute phase or top-rot phase – This is the most advanced and serious phase of the disease in which the young spindles (emerging leaves) are killed and subsequent death of the entire top of the plant.



Leaf infections and necrosis may continue to move downwards in the plant, penetrating cane stalks via the growing point. Affected leaves become progressively malformed and distorted with red colourations.



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The entire base of the spindle becomes rotten and dries up to cause a 'Top-Rot' of the young and tender plant tissues at the top of the sugarcane plant.

Knife-cut Phase – This is usually associated with the top rot phase and characterised by several transverse cuts in the rind of the cane stalk. Pattern of cuts is so precise that the 'incisions' look as though the plant tissue has been cut and excised with a sharp knife. Stripping the leaves off of the stalks will reveal large, horizontally-running and conspicuous cuts.

Disease transmission

Infection invariably occurs at the tops of sugarcane plants, which then become the main source of fungal inoculum (spores) for the spread of disease. Pokka Boeng is an airborne disease with primary transmission by air-currents (wind) and subsequent secondary transmission through infected sugarcane setts or seed pieces (the planting material), irrigation water, rain splashes and soil.

Pathogen viability and disease control

The use of healthy planting material and sugarcane varieties resistant to this disease is essential. Canes (stalks) showing 'top rot' or 'knife cut' should be rogued out from the fields. Integrated Disease Management, which will employ all available methods and techniques (including chemical control using fungicides), is invariably the most appropriate way to manage crop diseases such as this particular disease of sugarcane.

Fusarium moniliforme can be disseminated (spread) horizontally by airborne spores or crop debris and vertically from infected planting material (sugarcane setts) in the soil. As such, it is important that sugarcane farmers use disease-resistant varieties in tandem with applications of fungicide. *Fusarium moniliforme* is a robust fungus and plant pathogen surviving for up to 12 months on sugarcane debris under field conditions. Maximum survival is 11 months at 30 cm soil depth with cool and dry conditions favouring survival of the fungus on plant debris.

Fusarium pathogens have traditionally been difficult to control by fungicide spraying. That said a number of fungicides have demonstrated significant control of Pokka Boeng disease of sugarcane when used as foliar sprays. These include fixed copper fungicides, dithiocarbamate fungicides and actives from the MBC group of

Copper fungicides and dithiocarbamate fungicides have demonstrated significant control of Pokka Boeng disease when used as foliar sprays.”

fungicides. Farmers will find that two to three sprays using spray intervals of 14 days will reduce multiplication of the fungal pathogen and thereby maintain the yield and quality of their sugarcane. Where fungicide spraying will be required it is important to plant sugarcane setts (seed pieces) at a sufficiently wide spacing both within and between rows so that plant protection operations can be carried out.

A nutritional dimension for copper

Fixed copper compounds including cuprous oxide are used around the world on a wide range of crops to control both fungal and bacterial pathogens. However, there are additional and crucial plant nutrition dimensions to this metallic element. Copper is an essential plant nutrient required in 'trace amounts' and for this reason classified as a 'micronutrient' or 'trace element.' Deficiency of any essential plant nutrient including copper will cause 'deficiency symptoms' in the crop. In fact, a deficiency of copper was the first trace element disorder to be studied in sugarcane, being first identified and investigated in the sugarcane fields of Queensland in Australia.

Copper is more plant-available in acid soils and as the soil becomes alkaline copper availability (to plant roots) declines due to stronger copper adsorption in the soil. Copper is held onto tightly by clay particles and organic matter and as such is not normally subject to leaching from the soil.

Copper deficiency will initially show up in sugarcane as small, dark green patches called 'islands' in the interveinal areas of leaves. The most obvious symptom of copper deficiency is drooping leaves. Copper deficiency causes cane stalks to become rubbery with reduced tillering, shorter internodes and against a general reduction in plant vigour. Leaves become chlorotic (yellow) and are eventually bleached. Copper has a vital role at the tissue and cellular levels because this trace element is integrally involved in chlorophyll formation and photosynthesis. ■



Copper is an essential plant micronutrient for the healthy growth and development of sugarcane, as well as being a useful fungicide for the control of Pokka Boeng disease.

Growing up in a smart home



Commercial poultry production needs an appropriate environment-controlled system of housing, to increase productivity, maintain high flock health status and minimise the risk of disease outbreaks.

POULTRY REQUIRE A dry and draft-free environment. Some of the basic necessities that need to be provided to take care of these include feed, water, fresh air, light, darkness, proper thermal environment, protection – from the elements, predators, injury and theft – and proper space.

Therefore, effectively managing housing and climate conditions in broiler production satisfy the birds’ thermal requirements, while reducing the total cost.

In a paper written by Michael J Darre entitled “*Housing and Environmental Management of Poultry*” from the University of Connecticut, it is emphasised that poultry and other animals function normally when they exist in harmonious balance with the other living forms and the physical and chemical factors in their environment.

As birds should be reared in high, well drained areas, adequate space is required for breeding and windows of the coop should allow maximum exposure to the sun throughout the year”

Housing

In the medium- and small-scale commercial housing, which are more popular than the large-scale commercial poultry farms in the developing countries, the owners rely on housing design and equipment to exert substantial control over the climate provided to the birds, in a cost-effective manner.

According to the UN Food and Agriculture Organization (FAO), environmental intensities can be addressed if the design of the poultry house is appropriate. These include adequate space for the birds for

feeding, exercise, breeding, nesting and roosting; preventive measures to stop rodents, snakes and other predators from digging under the walls and floors; adequate cooling effect in the coop during summer time; supply of nutrition-enriched food supplements and good-quality water etc.

Supplementary heating systems play a crucial role in poultry environmental management, mainly during the brooding phase. As most of the developing countries are located in tropical areas, minimal heating is required to keep the birds cool and provide optimum environmental conditions.

Chicks need to be reared in isolation, in a clean in disinfected environment. As baby chicks cannot properly regulate their body temperature for a few days after hatching, they require a heat source. Heat lamps, brooder stoves, hovers and infrared heaters can work well in such cases.

“Depending upon the number of birds to be housed, almost any type of building that provides controlled ventilation, such as windows and doors, can be used. Birds should be reared in high, well drained areas. The windows of the coop and, outside run should face south to allow maximum exposure to the sun throughout the year. This helps with warmth in the winter and dryness during the rest of the year,” noted the study.

Ventilation management

Ventilation is the most important tool to ensure ample oxygen supply, while removing carbon dioxide, dust, moisture, ammonia and other waste gases. Ventilation allows exchange of air and helps control the temperature of the pen.

Natural or gravity-fed ventilation with windows, flues and slats are getting popular among the poultry owners in many of the developing nations. It is important to remove excess moisture and ammonia from the coop, especially in cold weather when ventilation is at a minimum. In a small coop (less than 150 sq ft of floor space), the poultry owner can use a bathroom fan in the ceiling and slats in the walls or windows to remove excess moisture in the winter, he suggested. For a large number of birds, forced air ventilation can be used.

In the large-scale commercial system, correct air distribution can be achieved using a negative pressure ventilation system, according to FAO. "Evaporative cooling pads can be placed in the air inlets to keep birds cool in hot weather. Tunnel ventilation is the most effective ventilation system for large houses in hot weather," said FAO.

Ventilation is seen to be the most practical way to lower high humidity, which can significantly affect the birds' health. Apart from heat removal, ventilation prevents wet, caked litter and ammonia problems in the broiler houses.

Green and blue lights improve growth, while red and orange lights stimulate egg production"

Temperature and feed intake

Adequate feed and water supply, along with housing and climate control, helps in birds' welfare and maximising economic performance. Additionally, there is a close relationship between the temperature and feed intake in broiler breeding processes.

Birds tend to increase feed uptake if the temperature is too low and reduce feed uptake if the temperature is too high, in order to convert the feed and water into energy they use for body maintenance. Therefore, poultry farmers are required to preserve a controlled climatic condition in the pen to ensure maximum temperature effects for birds' welfare.

"Birds need free access to fresh feed. Feeders can be made of wood, metal, or plastic, but it is important to provide about two to three linear inches of feeder space per bird and up to six inches for meat type birds and turkeys. Fresh water should always be available, inside or outside. Keeping the lip of the water level with the back of the bird is essential," described the study.

Importance of lighting

"Poultry require artificial lighting to maintain egg production during the short days of winter. Poultry are long-day breeders and we normally provide laying hens about 16 hours of light per day



It is important to provide around two to three linear inches of feeder space per bird and up to six inches for meat type birds and turkeys.

throughout the year," commented Michael J Darre.

The two types of artificial lighting are incandescent and fluorescent. "Incandescent globes are cheaper to install, but have lower light efficiency and a shorter life. Fluorescent lights are three to four times as efficient and last about ten times as long, but have variable performance in cold weather," described FAO.

The colour of the light rays, too, has an effect on birds' productivity. "Green and blue lights improve growth, and lower age at sexual maturity, while red, orange and yellow lights increase age at sexual maturity, and red and orange lights stimulate egg production," noted FAO.

The broiler birds can be reared under low-intensity lighting (five-10 lux), which can keep them calm and prevent feather pecking. During early brooding timing, 25 lux can be used to stimulate feeding.

Lighting programme is much more critical for the maintenance of egg production, layers and breeders. "Where artificial lighting is possible, a constant day length, of between 12 and 16 hours per day, during the rearing period has been shown to result in a delayed onset of lay, and is the preferred rearing treatment. Shortening day length or too little light will discourage egg production, and must be avoided once the birds are in lay," said FAO.

Hygiene and waste management

Micro-management of hygiene and litter/waste materials is vital for poultry production. Cleanliness in sheds, surroundings and in the equipment increases flock health status and limits any kind of microbial contamination, reducing vermin and fly loads.

For this, periodic sanitisation is a must to curtail the risk of disease outbreaks. A routine vaccination programme should be established, complying with the regulatory protocols, to maintain healthy flock production planning. ■

Building a healthy ecosystem to combat diseases



Image credit: Adobe Stock

Commercial production requires proper disease management techniques.

The global aquaculture products market is estimated to rise in value from US\$29.3bn in 2018 to US\$52.3bn, registering a CAGR of 7.5 per cent in the forecast period from 2019-2026, according to Data Bridge Market Research, the international market research firm.

FOR COMMERCIAL SUCCESS, an aquaculture operation should maintain fish at a controlled environment where fish must not only survive, but grow rapidly. Fish health management is successful if effective preventive measures are taken, rather than treatment afterwards.

During crowded and commercial production, a vast range of pathogens such as bacteria viruses, fungi and parasites can easily infect the fish. Factors such as low dissolved oxygen, nutritionally inadequate feeds and excessive handling can reduce the natural disease defence mechanism among the fish and lower the ability to protect against any contagious diseases.

As a large number of fish farmers in Asian countries such as Indonesia, Philippines, Vietnam, Thailand, North Korea, South Korea, Bangladesh, India,

Japan, Sri Lanka, China and other coastal Asian nations mainly depend on aquaculture for sustainable living, it is of utmost importance to adopt innovative strategies to promote food security, improve earning from fisheries and implement proper aquaculture health management in these regions.

Types of fish disease

Taking a look at health-related issues in fish production, Ruth Francis-Floyd, professor and extension veterinarian, College of Veterinary Medicine and Programme in Fisheries and Aquatic Sciences, University of Florida, categorises fish diseases in two types: infectious and non-infectious. Infectious diseases are mostly caused by contagious pathogens, either present in the environment or carried by other fish. Infectious diseases are categorised as

parasitic, bacterial, viral or fungal diseases.

Parasitic diseases: These are frequently caused by protozoa, small microscopic organisms present in aquatic climate. Protozoans affecting fish can cause irritation, weight loss and eventually death.

Bacterial diseases: Bacteria can cause several fatal diseases among fishes such as columnaris (by *Chondrocyclus columnaris* and *Cytophaga columnaris* in freshwater), furunculosis (by *Aeromonas salmonicida* in salmon), tail and fin rot (by *Aeromonas salmonicida* and *Aeromonas liquefaciens*), vibriosis, dropsy (by *Pseudomonas punctata*) and tuberculosis (by *Mycobacterium*).

Viral diseases: The symptoms are often similar to those of bacterial diseases. Some of the common viral diseases include koi herpesvirus disease, viral haemorrhagic septicaemia (VHS), infectious haematopoietic necrosis (IHN) etc.

Fungal diseases: Common fungal infections in fish productions are cotton wool fungus (*Saprolegniasis*), ichthyosporidium, *Exophiala* species etc.

Non-infectious diseases are caused by

environmental factors, lack of nutrition or genetic anomalies, said Ruth Francis-Floyd.

Avoidance of disease

A paper by NRAC and United States Department of Agriculture (USDA) NIFA from Cornell University College of Veterinary Medicine entitled “General Fish Health Management” has highlighted that maintenance of suitable water quality greatly reduces various stress factors to which fish are exposed, which in turn, reduces the likelihood of many disease problems.

According to the paper, critical water quality parameters include temperature (particularly sudden and dramatic shifts), dissolved oxygen, pH, alkalinity, hardness, nitrogenous wastes (NH₃), nitrite and potentially toxic substances such as heavy metals, pesticides, carbon dioxide (CO₂).

“Water quality should be monitored frequently and corrective measures initiated if conditions become stressful (for example, if dissolved oxygen is below three ppm for warm water fishes or five ppm for cold water fishes).”

Commenting on the importance of nutrition-enriched feed in disease resistance, the paper noted, “Feed should be purchased from a reputable supplier, stored in a cool and dry place and used in a timely manner (typically within 90 days or longer per the manufacturer’s instructions).”

“To reduce the trauma of handling, make sure all necessary materials such as nets, hauling tanks, weighing scales and

Maintenance of suitable water quality greatly reduces various stressors to which fish are exposed.”

adequate personnel are immediately available. Use of salt (1,000–2,000 ppm) in transport tank water can reduce stress when fish are moved. The transport water must also be properly aerated or oxygenated. Handle the fish gently and for as short a time as possible. If possible, do not handle fish that are already stressed or when environmental conditions are marginal (such as too hot, too cold, inhospitable),” revealed the paper.

Responding to disease problems

In ponds, cages and raceways, fish are usually invisible, except when feeding. Therefore, it is important for the aquaculturist to note the feeding behaviour of the fish being cultured even when automatic feeders are used, noted the study.

The first response to a disease is abnormal behaviour in fisheries. A culturist should become familiar with the normal behaviour of the fish. Some of the common behaviour changes if affected by diseases are that fishes stop feeding, swim near the water surface, dart or scratch on objects etc.

Professional assistance should be taken if abnormal behaviour persists for several days. Water quality data should be provided to the diagnostic laboratory as well as information concerning the fish in question such as symptoms, number of fish afflicted etc, the study further added.

The manner in which fish specimens are prepared and shipped will influence what information can be obtained when the specimens are examined by the fish health specialist.

“Working with a live fish will provide the diagnostician with the best opportunity to gain useful information regarding the fish disease. The fish can be examined for live parasites. Identification of living parasites can be aided by observing and characterising their movement,” said the study.

“Microorganisms (bacteria and viruses) can be cultured from specimens that are delivered to the diagnostic laboratory alive, and the sensitivity of bacterial pathogens to potential treatment chemicals can be determined. A histopathological examination can be performed on properly prepared organs and tissues. Tissue changes that are indicative of disease can be identified. It is critical that the tissues be preserved properly to insure that they represent the disease process and not decomposition after death,” the study stressed.

Treatment of diseased fish

The US Food and Drug Administration (FDA) has approved some fish disease treatment drugs.

Terramycin (Oxytetracycline hydrochloride) is an antibiotic used to treat internal bacterial infections. It is used for the treatment of bacterial hemorrhagic septicaemia, pseudomonas disease in channel catfish, ulcer disease, furunculosis, pseudomonas disease and for the control of coldwater disease.

Romet-30 is used for the treatment of furunculosis in salmonids and enteric septicemia in channel catfish.

Aquaflor is available under a veterinary feed directive (VFD) issued by a licensed veterinarian in the course of the veterinarians’ professional practice. This drug is mainly used for the treatment of Edwardsiella ictaluri infection in channel catfish and Aeromonas salmonicida and Flavobacterium psychrophilum infection in salmonids. Formalin-F, Paracide-F, Parasite-S (formalin) is used for the treatment of several external parasites. ■



The coop for feeding fish in east of Thailand sea.

Image credit: Adobe Stock

Safeguarding animal health

Implementing strict biosecurity measures in animal farms can prevent epidemic transboundary animal diseases.

BIOSECURITY IS THE strategic practice to eliminate biological risks in livestock farming. It is considered as the most important factor to stop disease breakout among animals, from animal to human or human to animal.

As biosecurity steps in a farm prevent animals from being infected with or spreading pathogens (a virus or bacteria), it is of the highest priority to enforce such practices in a consistent way. Otherwise, there is major threat of disseminating animal and plant diseases, which will eventually



Image credit: Adobe Stock

Correct management practices can keep animals healthy and disease-free.

lead to economic consequences.

Losses from disease outbreak inside the farm can result in loss of valuable animals, reduced productivity and increased costs in labour and treatment. For example, in 2002-03, exotic Newcastle disease outbreak

in the USA caused destruction of more than four million birds and around US\$170mn to control the case, according to the US Department of Agriculture's Animal and Plant Health Inspection Service (APHIS).

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Wake-up call for Asian farm owners

More recently, in the surroundings of the African Swine Fever (ASF) outbreak in the Asian countries, particularly in China, it is of immediate importance to implement strict biosecurity measures to prevent such diseases among Asia's animal farms.

ASF is a wake-up call for Asia's overall animal disease prevention and control, revealed the livestock industry experts. The farm owners should apply restrictive measures and tighten monitoring of the situation to control the spread of any such contagious disease.

According to a paper published by Michigan State University Extension, when an illness is caused by a pathogen, it can spread quickly through a herd or flock. Some pathogens travel through the air (after a sneeze, for example) and some travel from pen to pen or even farm to farm on people's shoes or on the tools or equipment they move from one site to another.

On livestock farms, some of the biosecurity activities include animal and feed management, sanitation practices (employee, equipment and transport vehicles), handling of animal compost and removal of deal animals. The farm managers need to act on areas such as keeping distance of the visitors from core livestock areas; maintaining cleanliness inside the farm; frequent farm monitoring to look for signs of infectious diseases; safeguarding the rest of the animals from sick flock; periodical vaccination programmes to keep the animals safe, and others.

“The environment and equipment that animals come into contact with need to be properly sanitised and disinfected.”

The Biosecurity CHIP

The Michigan State University Extension has broken down biosecurity related to animal and human interactions into four basic principles in the word “CHIP.”

C for cleanliness – Cleanliness starts with keeping both animals and the equipment. Sharing grooming equipment is one of the most common ways that pathogens spread, because their surfaces can be easily



Breeding indoor housing farms should be tidy and clean.

Image credit: Adobe Stock

contaminated with hair, dander and other debris.

“Human health and personal hygiene are also part of the cleanliness step of biosecurity. Ringworm, E. coli, salmonella and other pathogens can pass from animals to humans and humans to animals,” according to the extension.

Therefore, it is necessary to avoid reusing equipment without properly cleaning it between animals (for example, by soaking it in a six per cent bleach solution, then rinsing it thoroughly). Additionally, it is important to make sure that the items such as trailers, feed and water buckets are safe, clean and have been properly disinfected before using them. **H for history** – The first step in disease prevention is to be as familiar as possible with the general animal health and management practices of the operation. Knowing the diseases that animals have been vaccinated against is another way to prevent a variety of pathogens and be more prepared for future health concerns.

It is further suggested to check with all visitors to the farm to see if they have travelled to an area that may be infected with a pathogen such as foot and mouth disease (FMD) that could spread to the animals.

I for isolation – According to the extension, when new animals arrive on the farm, it is necessary to keep them separate

from other animals for at least 14 days, and if possible, 30 days.

The goal is to reduce the number of animals that would get sick if a newcomer brought a contagious disease into the facility. “When returning from a show or other off-farm event, initially keep the returning animals separate to avoid passing along any infections they may have been exposed to,” revealed the Michigan State University Extension.

“Keep your clothes and shoes or boots separate, too. Don't wear the same boots you wear in your barn to a show or fair, if possible. Diseases like the deadly Porcine Epidemic Diarrhea virus (PEDv) are spread via fecal matter, and shoes and boots are the most common carriers of manure, and therefore, the pathogen.”

P for proper management practices – Proper animal management practices include observing animals for signs of sickness, conducting appropriate vaccination programmes and providing proper animal nutrition.

Controlling visitors' access to areas where the animals are housed and often travel is another important management practice. As some pathogens can travel on clothes and on humans, extra precautions are necessary if there is an animal disease outbreak in the farm area or anywhere the animals are travelling to. ■

Biosecurity principles

- Wash hands with soap and water after handling animals
- Keep clothing and shoes clean to help prevent the spread of pathogens
- Be sure that shoes and boots (of both farm workers and visitors) are clean before and after visiting any farm
- If you're not sure visitors' shoes and boots are clean, requiring everyone to wear disposable plastic boots is a good biosecurity safeguard
- Do not share farm equipment with other farms unless it is properly cleaned and disinfected
- Dispose of the carcasses only in the approved disposal pit to stop contamination

Marel Poultry unveils Q-Wing automation solution for poultry processing

MAREL POULTRY HAS developed Q-Wing, chicken wing part grading and distribution solution, to intensify the automation level in a poultry processing plant.

Given the globally growing shortage of skilled labour, the solution is in response to demand from the market for higher wing yields and less manual labour.

To provide huge demand of chicken wing parts across the global market, processors need to have a focused wing cutting, batching and distribution process that produces both higher volumes and more consistent quality, with the least cost and hassle, explained the company.

Integrated in the ACM-NT cut-up system, the Q-Wing comprises a selection of wing cutting modules, an IRIS visual grading system, logistics and Innova controlling software.

As the poultry processors see wing part sorting as a very labour-intensive process, Q-Wing aims to automate many manual operations and increasing wing yields.

The IRIS camera system is seen to visually assess the quality of the wings in the line. “If, for example, only the left first joint is damaged, the left second joint can still be processed as an A grade item and so can all right wing parts. This will dramatically help secure consistent quality and raise wing profits,” according to the company.

The logistic system comprises multiple conveyor belts, leading to



Image credit: Marel Poultry

The IRIS camera system is seen to visually assess the quality of the wings in the line.

separate packing stations for the different A grade and B grade drumettes, wingettes and whole wings. In addition, the Q-Wing is set to improve the assessment process, aiming to enable processors to assign maximum value to wing products.

New Holland Agriculture’s high horsepower product ranges at SIAM 2019

NEW HOLLAND AGRICULTURE’S high horsepower tractor ranges including TC5.30 combine harvester, TD3.50 and T8.410 tractors were on display in the Salon International de l’Agriculture (SIAM) 2019 in Morocco from 16-21 April 2019.

The company, together with its importer S.O.M.M.A., a part of Auto Hall Group, presented its machinery for the visitors to discover the products on display and guide them through services available for supporting their farming business.

The TC5.30 combine harvester with features including unloading tube and bigger grain tank aims to deliver improved performance in a variety of crops and conditions, saving time and money of the farmers.

The TD3.50 tractor model in the sub-50 hp segment is expected to help small tractors and designed to operate with minimal demands for fuel and maintenance.



Image credit: New Holland Agriculture

New Holland TC5.30 combine harvester.

In the high horsepower segment, the T8.410 tractor model was on display along with the T6050 and T6090 tractor models. The long wheel base of the T8 tractors aims to provide high stability on the road and in the field with good manoeuvrability for large scale agricultural operations.

The company’s TD Straddle Series such as TD5 Series, TT Series, the versatile TD4040F orchard tractor and the BC5000 small square baler were on display during the SIAM show.

In addition, New Holland Agriculture, a brand of CNH Industrial, has launched FarmMate, a digital application for farmers in Asia, the Middle East and Africa (AMEA). The app, available for IOS and Android smartphones and tablets, aims to support New Holland’s customers in their daily activities with agronomic advice and useful tools.

FarmMate users are expected to find detailed information on New Holland’s equipment and how it can benefit their farming operations, as well as insights on farming practices, news and dedicated services that will improve their overall after-sales experience with the brand.

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Indian state plans fruit processing plants to speed up mango exports

INDIA'S TELANGANA STATE is planning to set up scientific fruit processing-cum-treatment facilities to ensure quality standards while exporting mangoes to the USA and European markets.

As both the markets have stringent regulation requirements while importing the seasonal fruit, mangoes require quality processing and treatment to export to these marketplaces. The proposed fruit treatment plants aim to meet these requirements while improving the shelf life of the fruit.

According to Agricultural and Processed Food Products Export Development Authority (APEDA), a lack of required treatment facilities has been a major hurdle in its exports, although the variety has huge demand in the USA, European and other Far-East markets.

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Measures to save fish population in Nepal's rivers

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The study recommends fish screening framework for identifying the scale of impact on fish by a development project.

Right measures should be adopted in fisheries projects in Nepal to prevent rapidly declining fish stocks in the country's rivers.

SPECIAL MEASURES ARE needed in hydro and irrigation projects in Nepal to arrest rapidly declining fish stocks in the country's rivers, according to a new study from the Asian Development Bank (ADB).

As a number of population in the Asia-Pacific region largely depends on fishing activities, proper measures should be adopted to improve the industry and livelihood of the farmers.

"Early findings of this study suggest that the fish population in Nepal's river basins with dams are in sharp decline," said Deepak Bahadur Singh, senior environment officer at ADB and co-author of the study entitled "The Impact of Dams on Fish in the Rivers of Nepal."

"Some technical considerations while building dams or other such projects can go a long way in saving the fish population. Providing a fish ladder, building a fish passage, and a fish bypass channel, are some examples."

In addition, breeding fish in hatcheries

and annually releasing them upstream and downstream of the dam to maintain their populations could also be effective, says the study. The study also recommends a "fish screening framework" for identifying the scale of impact on fish by a development project and adopting typical mitigation measures.

Regional cooperation between Bangladesh, India and Nepal could help conserve the valuable and threatened aquatic fauna."

The study assessed the operation of selected hydropower and irrigation systems with dams to divert water. The systems included the Kali Gandaki, Marshyangdi, Middle Marshyangdi, Kulekhani, Khimti,

and Trishuli hydropower projects, and the Babai irrigation project. The study also reviewed international good practices, particularly in South Asia, on mitigating the impacts on fish while constructing projects with dams on rivers.

According to the study, regional cooperation between Bangladesh, India and Nepal could help conserve the valuable and threatened aquatic fauna by ensuring the animals' transboundary movements for feeding and reproduction. A few tributaries in each major river basin could also be declared aquatic life protection areas, or even a fisheries national park.

ADB Country Director for Nepal Mukhtor Khamudkhanov noted, "A broader understanding of the importance of healthy fish habitat to maintaining balance in the ecosystem and food chain and generating economic and social benefits from fisheries will go a long way in promoting environmentally sustainable development."

The study concludes that a strong legal provision and a dedicated government agency to enforce the rules and regulations are crucial in protecting fish habitat in the country. ■



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