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July/August 2022

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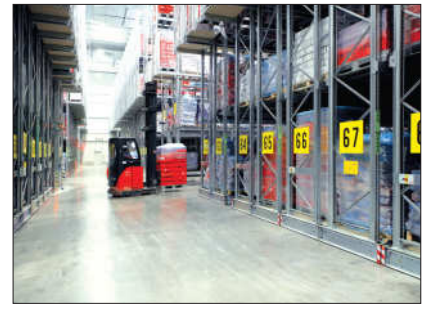

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## Farming Calendar 2022

### AUGUST

| | | |
|---|---|---|
| 29-2 Sep | Africa AgriTech<br>*www.africa-agri.co.za* | PRETORIA |

### SEPTEMBER

| | | |
|---|---|---|
| 13-15 | Morocco Food Expo<br>*www.moroccofoodexpo.com* | MOROCCO |
| 16-17 | Naivasha Horticultural Fair<br>*www.naivashahortifair.com* | NAIVASHA |

### OCTOBER

| | | |
|---|---|---|
| 5-6 | Poultry Africa<br>*www.poultryafricaevent.com* | KIGALI |
| 12-14 | agrofood Kenya<br>*www.agrofood-kenya.com* | NAIROBI |
| 27-29 | Ethiopex & ALEC<br>*www.africanlivestock.net* | ADDIS ABABA |

### NOVEMBER

| | | |
|---|---|---|
| 6-10 | SIMA Paris<br>*www.m-en.simaonline.com.com* | PARIS |
| 9-13 | EIMA International<br>*www.eima.it* | BOLOGNA |
| 15-18 | EuroTier 2022<br>*www.eurotier.com/en* | HANOVER |
| 29-1 Dec | agrofood West Africa<br>*www.agrofood-westafrica.com* | ACCRA |

*Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.*

## North and West Africa shares good practise for responsible agriculture investment

THE FAO-ITOCA REGIONAL event brought together 30 representatives from government and academic institutions, agri-entrepreneurs and agribusnesses, and non-governmental organisations from Liberia, Mauritania, Senegal, Sierra Leone and Tunisia.

"Enhancing responsible investment in agriculture that increases domestic production for food security; creates decent employment opportunities; and contributes to sustainable development is critical to recover from the effects of the COVID-19 pandemic and beyond," said Andrew Nadeau, FAO senior capacity development officer during the event, which took place in Dakar on 29 and 30 June, 2022.

Celebrated under the banner of the Food and Agriculture Organization of the United Nations (FAO) and the Information, Training and Outreach Center for Africa (ITOCA), the event focused on empowering key change agents that can play a catalytic role in policy change related to agricultural investment.

Image Credit: Adobe Stock

30 representatives joined together to assess the landscape for responsible investment in the agricultural sector.

## Fish project tackles malnutrition in Uganda

UGANDAN LAKE CATCHES are mostly dominated by three highly-nutritious fishes, known locally as 'muziri', 'ragoogi' and 'mukene'. The fishes' nutritional and economic benefits are not yet being realised due to high post-harvest losses, caused by improper handling and processing techniques, which is impacting the quality and consumer appeal of the potential product.

The NutriFish project aims to correct these wrongs, optimising the catch's potential with nutrient-packed, fish-enriched products, including a cooking sauce and maize meal for mothers and babies.

The fish sauce, which can be used in place of beans as a protein source, cooks in just 10 minutes, compared to the one- to three-hour preparation required for beans. This enables local families to cut down on energy requirements and reduce environmental impact while meeting nutritional requirements.

NutriFish has engaged street vendors who make chapatti, normally served with beans, to encourage them to sell the flatbread with the fish-enriched sauce to increase uptake.

Anaemia is also being tackled, with the low-iron deficiency commonplace in Uganda. The condition affects women of reproductive age and children under five in particular, with these groups struggling to access animal products, especially fish, due to unavailability and expense.

NutriFish has introduced a solar tent drying technology as an alternative to traditional open-air sun-drying for the fish products. The tent drying process is faster and more hygienic than traditional methods, coming with a host of sustainable benefits, too. Processed fish quality has improved, increasing shelf life from six to eight weeks to nearly five months, doubling the incomes for the mostly female processers.

Image Credit: NutriFish

Local women have seen a monthly increase to US$1,200 from fish-trading activites, thanks to the NutriFish project.

Local women now own seven boats themselves in the Ntoroko landing site on Lake Albert, enhancing their earnings to an estimated US$1,200 per month from fish-trading activities.

## Compostable crop sensors on the cards

AN INTERNATIONAL RESEARCH collaboration is planning to explore new ways of monitoring crop growth with biodegradable sensors which can be composted at the end of their lifespan.

The US$2.2mn CHIST-ERA project, called Transient Electronics for Sustainable ICT in Digital Agriculture, is led by researchers from the University of Glasgow and supported by colleagues in Canada, Finland, Poland and Switzerland. Over the next three years, the project partners will work together to develop a new type of environmentally-friendly modular sensor system.

The researchers aim to find ways to create devices built from sustainable and degradable materials with the aim of cutting down on the growing problem of electronic waste.

The devices will have two parts – a solar-powered patch which can be applied to the surface of the leaves of crops to measure key indicators of their growth and an electronic module which can wirelessly transmit the information collected by the patch to a central computer.

The team aims to make the patch completely biodegradable, and capable of nourishing the soil once it reaches the end of its period of usefulness. To do so, they will investigate how compostable electronic components might be made from everyday materials like rice husks, fibrous proteins like wool, or biodegradable polymers like starch or cellulose, combined with conductive metal nano particles made from materials like copper and zinc. It will also explore how those compostable components could be powered by similarly biodegradable organic photovoltaic materials to support the patch's tasks of monitoring pH, temperature and bio-impedance, with energy stored in a biodegradable super capacitor. Super capacitors provide a sustainable, non-toxic alternative for conventional batteries.

At the same time, the team will also be working to develop an electronic module equipped with wireless communication technology. A key priority of the design for the module is that it will be reusable and repairable to help minimise waste.

## Nutreco earns grant for sustainable feed solutions catering to small-scale producers

NUTRECO, A GLOBAL animal nutrition leader, has received a US$4.8mn grant from the Bill & Melinda Gates Foundation to accelerate the implementation of localised, sustainable complete feed production in sub-Saharan Africa, driving forward Nutreco's purpose of 'feeding the future'.

Image Credit: Adobe Stock

The grant will directly fund 21 Hendrix4U complete feed production projects.

Compound feed production across the continent is some of the lowest in the world, and some of the most expensive due to inefficiencies and infrastructure challenges. As a result, small-scale livestock producers face declining incomes and uncertain futures, unless they gain access to quality animal feed.

The grant will directly fund 21 Hendrix4U complete feed production projects initially in Ghana, Ivory Coast, Nigeria and Uganda. Hendrix4U provides a 'factory-in-a-box' for rural areas ensuring access to quality compound feed production for small-scale producers, in a financially sustainable way.

Nutreco CEO Fulco van Lede said, "More than half of the projected global population growth in the coming decades will take place in Africa, and many will face food insecurity and hunger if no innovative solutions are developed to increase the sustainable production of food in the region. Today's grant funding serves as validation of the work we are doing in Africa to equip producers with the right tools to future proof their livelihoods – and as a result, ensure high quality food and produce is accessible for communities throughout the continent."

## President Kenyatta urges KTDA to facilitate increased tea value addition

KENYA'S PRESIDENT UHURU Kenyatta has challenged the Kenya Tea Development Agency Holdings (KTDA) to initiate an elaborate plan that will ensure value addition to 90% of the tea grown in the country before it is exported.

He emphasised that tea farmers will reap maximum benefit from their labour if there is increased value addition to the tea they produce instead of selling it raw.

"The real future for tea is value adding 90% of our tea and finding direct markets from the farm to the one consuming the tea in a cup. That will be the long-term solution and that solution lies with you to set the foundation," the President said. Apart from increasing the income of tea farmers, he said value addition will also help to create more jobs for the country's youth.

Kenyatta announced this while addressing directors of the smallholder tea sub-sector where he also announced that this year the tea industry registered its best performance in the last five years. He added that the earnings of smallholder tea farmers increased by 42.4% in 2022 following the reforms initiated by the Government.

The President said the additional revenue, which will be paid to tea farmers, has risen by 44.6% in 2022. Noting that the rise of 76% is an average, he emphasised that each tea factory will pay specific rates based on its performance with some of the factories paying more than others.

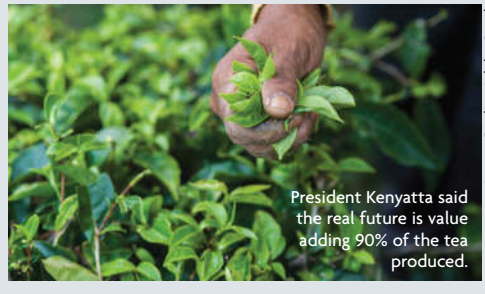

Image Credit: Adobe Stock

President Kenyatta said the real future is value adding 90% of the tea produced.

President Kenyatta expressed optimism that the improved performance of the tea sub-sector this year will boost the hope of over 650,000 smallholder tea farmers and approximately 30% of Kenyans who are employed in the wider agricultural sector.

"I am confident that once the ongoing reforms are fully implemented, the tea industry will be fully revitalised for the benefit of the tea farmers and the country," President Kenyatta said.

The President highlighted several key interventions that contributed to the increased earnings for the tea sub-sector including setting up of the minimum reserve price at the Mombasa tea auction in July 2021 that led to an increase in tea export earnings.

## Intracare launches eco hoof bandage

INTRACARE, A DEVELOPER and supplier of products for veterinary health and nutrition, claims to have come up with the world's most eco-friendly hoof bandage, which will be available worldwide soon.

The company has spent two-and-a-half years researching and developing an alternative biodegradable hoof bandage 'Intra Eco Tape', based on a natural fabric composition. The new bandage preserves its original properties such as a good stretchability, easy-tear and great adhesive properties. The product is packed ecologically without plastics and is produced without chemical colouring.

Besides the ecological benefits, Intra Eco Tape also offers the user greater value for money. One roll treats an average of three to four hooves while most offered products reach an average of two to three hooves.

## West Africa Connect boosts region's trade of mango, cassava, and ICT Services

AFTER A SUCCESSFUL edition in 2021, West Africa Connect (WestAfricaConnect.com) is back with a new event on September 20 and 21, 2022. This time, the focus is on promoting mangoes, cassava, and ICT services from West African suppliers to agribusiness buyers from West Africa, Africa, and other continents. Buyers can connect with over 150 selected fresh and processed mango and cassava suppliers as well as ICT service providers from 16 countries.

Throughout the event and thereafter, the platform will offer B2B meetings with partners and access to exhibitors' digital profiles. Buyers can source from a wide range of regional products and services, benefitting from the tailored support provided by the organisers.

## GLTC Rental ticks the right boxes for fruit season

FOR WESTERN CAPE fruit farmers, renting equipment from Goscor Lift Truck Company (GLTC) allows for on-time harvests without having to front the large capital cost of a down payment on mission-critical machinery. With that in mind, apple, grape and onion farmers in the in the Ceres/Grabouw area, Western Cape, are taking advantage of the flexible and cost-effective equipment rental facility from GLTC.

Janine Winterbach, GLTC Rental Sales Manager, said the company currently has a large fleet of machines out for the fruit season. GLTC has a wide variety of specs to offer, including the D25S-5 diesel model, the Doosan B25S-5 and Crown SC electric units. "The fleet is kept up to date, ensuring that customers have working machinery at all times without the threat of breakdowns or interruptions of work."

## Nigeria targets agro-processing as a future growth driver

AS NIGERIA LOOKS to restructure its economy to be more diversified and sustainable, agro-processing is emerging as a key tool to improve agricultural value added while also bolstering the sector's status as a driver of economic growth.

As in many African countries, agriculture has long been an important part of Nigeria's economy – not only in terms of food production, but also in terms of its economic impact and contribution to the overall workforce.

Despite its sizeable footprint, some 90% of agricultural goods are exported raw, meaning that the country misses out on crucial value-added opportunities associated with agro-processing.

It is estimated that up to 80% of profits in the agriculture sector are derived from processing and retailing raw goods. Emmanuel Ijewere, vice-president of the Nigeria Agribusiness Group and CEO of agro-processing firm best foods, estimated that for every dollar made exporting raw products in 2016, Nigeria could have earned 10-fold that value had the country processed all the commodities exported.

Image Credit: Oxford Business Group

It is estimated that up to 80% of profits in the agriculture sector are derived from processing and retailing raw goods.

### Economic impact

The lack of processing capacity means that Nigeria essentially exports its agricultural goods abroad, where they are processed and often exported back to Africa at a far higher price.

For example, it is estimated that between 2016 and 2019, Nigeria's cumulative agricultural imports, at US$7.9bn, were four times higher than its agricultural exports.

As OBG has previously noted, such situations are not uncommon in the region. For example, leading West African cotton-producing nations Benin, Burkina-Faso and Mali export 1.8 million tonnes of unprocessed cotton worth US$922mn, but import $2.4bn of finished cotton textiles and apparel.

The result of such a model is that despite a large agriculture sector and vast arable land, Nigeria remains vulnerable to food insecurity and fluctuating food prices.

These challenges were underscored by the 2014 drop in oil prices that led to a recession in 2016. Amid falling revenue, the government sought to diversify the economy and reduce the import bill by focusing on agro-processing.

### Development of agro-processing

In an effort to address the situation, in recent years Nigeria has sought to develop its agro-processing capacity.

In 2015 the Central Bank of Nigeria launched the Anchor Borrowers' Programme, an initiative to create linkages between smallholder farmers and agro-processors through a series of financing options and inputs.

The Bank of Industry (BoI), for its part, has supported the sector by providing loans aimed at developing the agriculture value chain. It is estimated that more than 6.9 million direct and indirect jobs were created through BoI initiatives between 2015 and October 2020.

## TİKA supports Tunisia's National Gene Bank


Image Credit: TIKA

TIKA has established a chemical and molecular analysis laboratory.

TURKISH COOPERATION AND Coordination Agency (TİKA) has established a chemical and molecular analysis laboratory for the identification, analysis, and registration of local fruit species, especially local olive tree species, within Tunisia's National Gene Bank, affiliated with the Ministry of Environment of Tunisia.

The project implemented by TİKA aims to ensure the conservation of olive, which accounts for a significant portion of Tunisia's agricultural production and exports; to preserve olive trees for future generations; and to increase the added value. It will consist of four phases: the location of the exact position of local olive species and their harvesting (first phase), the characterisation and morphological analyses of these olive species (second phase), the registration of the analysed olive species in the database and their labeling (third phase), and the cultivation and distribution of high-yielding olive species in nurseries (fourth phase).

## Naivasha Fair to rejuvenate Kenya's horticulture and floriculture industries

AFTER A TWO year gap due to the global pandemic, the Naivasha Horticultural Fair makes its return on 16 and 17 September 2022, in Naivasha Town, Nakuru County, Kenya. It will showcase products and services from stakeholders in the horticultural industry, primarily the flower industry and also car manufacturers, accessories and financial institutions among others.

Image Credit: Naivasha Horticultural Fair

The fair is now an established name in the industry and is also marked as one of the important events in the continent's horticultural events calendar.

The fair is now an established name in the industry and is also marked as one of the important events in the continent's horticultural events calendar. The event is said to have a history starting out as a charity event nearly 20 years ago but now has grown into a rendezvous point for the Kenyan and African horticulture featuring over 180 professional stands.

According to the organisers of the fair, Kenya has over 3,500 ha of land cultivating roses and over 1,500 ha of land growing other types of commercial flowers. Kenya radiates huge potential in the developing horticulture industry for continent and the fair provides an excellent opportunity for senior professionals, stakeholders and decision makers to market thier products.

The event is known to attract professionals from the Kenyan agriculture sector, especially small scale farmers who in the country own a major part of the thousands of hectares of arable land.

The organisers said that the fair is going to be on Friday and Saturday and will be held in the same fair grounds as per previous editions. The event will follow all COVID-19 protocols for the safety of the attendees as it is known to attract frequent audience and business from all of Africa and also Europe.

The event targets over 17,000 visitors and more than 500 exhibitors this year. It is also known to support 30 charitable institutions with the profits raised from the event. NHFair Trust is completely charitable with all the money raised going towards local or national causes, with many of them being organisations working towards causes of children, girls and women.

"A great chance for agriculture experts to educate the public, students to gain priceless skills and competence and citizens to benefit from ideas for utilising wasteland, including investment solutions," said Kahara Ngure Gerald, a visitor to the previous editions of the event.

Naivasha Horti Fair is a lot less expensive than other trade shows in Kenya, so the smaller companies can afford to exhibit.

*For more details, visit www.naivashahortifair.com*

A look at some innovations that are bringing new opportunities to the poultry industry.

# New frontiers in the defence against poultry diseases

Image Credit: Adobe Stock

Globally, a strong focus on vaccines and surveillance is evident.

AFRICA'S POULTRY INDUSTRY is set for strong growth over the next decade, according to estimates by the Netherlands-based Rabobank. It says the sector could grow at a compound annual rate of approximately 4.7% from a current valuation of US$25bn, with markets such as South Africa, Nigeria, Algeria, Ethiopia, and Morocco leading the charge.

Globally, the poultry trade faces ongoing challenges like avian diseases, making disease prevention, beginning with biosecurity, fundamental to the success of the industry.

Preventative measures against diseases include vaccination, parasite control, identifying and treating sick birds, separating multi-age flocks and practising routine biosecurity procedures between flocks and staff working with them.

## Royal GD's VIR-check is its latest innovation for assessing the effectiveness of broiler house cleaning and disinfection.

Globally, a strong focus on vaccines and surveillance is evident, especially due to the far reaching effects of the pandemic.

We take a look at some advancements that are enabling disease prevention and monitoring.

VIV Europe 2022, an event focused on 'feed to food' industry, which was held from 31 May to 2 June, hosted some innovations for safe and effective in-ovo vaccination and nutrition such as Royal Pas Reform's new technology SmartVac, disease control programmes and effective broiler house cleaning and disinfection.

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for specific viruses is the ultimate goal of any farmer involved in disease control. Royal GD, a leading organisation in animal health and animal production, makes it possible with its disease control programme, including its latest innovation VIR-check. It is the best test for assessing the effectiveness of broiler house cleaning and disinfection. This test determines the viral pressure in a broiler house. Based on 10 swabs from six- to seven-day old chicks, a quantitative multiplex PCR test assesses how many common resistant intestinal viruses the chicks picked up in the first days of life. The VIR-check score is easy to interpret with four colour coded categories (green, yellow, orange and red). This tool shows the result of farm hygiene and disinfection and stimulates to continuously improve this process. Research shows that chicks with a lower VIR-check score grow faster. If a farm improves from category red to category green, this will result in more than 100 grams of extra growth per chick in six weeks.

**New protection against E. coli**

Zoetis helps ensure breeder flocks are effectively supplying broiler hatcheries through a comprehensive portfolio of vaccines and services designed to reduce disease threats.

**The new opportunity to extend protection against E. coli infection for egg layers and breeding stock is seen as a significant advance for the poultry industry.**



Image Credit: Adobe Stock

New technologies can help the industry solve numerous challenges.

Over the past ten years Poulvac E. coli has become routinely used throughout the egg laying sector and has proved particularly helpful in protecting valuable breeding stock.

For laying and breeding pullets it was not allowed to be used in birds in lay or within six weeks before the onset of the laying period. This limitation has now been removed and replaced with an in-lay safety claim, allowing the vaccine to be used throughout lay.

The new opportunity to extend protection against E. coli infection for egg layers and breeding stock is seen as a significant advance for the poultry industry.

"The stated duration of immunity is 12 weeks, and many flock owners choose to vaccinate multiple times during the rearing period to maximum protection levels," said John Kenyon, Zoetis UK national veterinary manager, as reported in *The Poultry Site*.

"This new approval gives them much greater flexibility in protecting their birds. The timing of vaccination in rearing can now be adjusted to include use in the six weeks before start of lay with the opportunity for further use during the laying period which is now often extended from 72 to 80 weeks or even longer."

He said extending the protection could be particularly beneficial where there had been E. coli issues in the past and to react to disease occurring in a particular flock that had not responded to medication or other intervention.

**Infectious Bursal Disease**

The Infectious Bursal Disease (IBD) is associated with significant immunosuppression, increased mortality, and poor economic performance. Vaccines are the best tool to combat infectious bursal disease virus (IBDV), but vaccination needs careful monitoring. The subclinical form of the disease flies under the radar because susceptible chickens younger than two weeks of age don't show, or hardly show, any clinical signs when they become infected. Prof Sjaak de Wit, a senior researcher with GD Animal Health in the Netherlands, maintains that this "sneaky" form of IBD is a global threat to poultry producers because, if it is not mitigated by a prevention programme, the damage to poultry welfare and productivity cannot be reversed within the normal broiler lifecycle.

**Conclusion**

The best way to manage diseases in poultry production is to prevent them. Prevention of diseases includes sound biosecurity measures, vaccination, good hygiene and stress management.

New technologies can help the industry solve the numerous challenges and look forward to future opportunities that will enable it to thrive and succeed.

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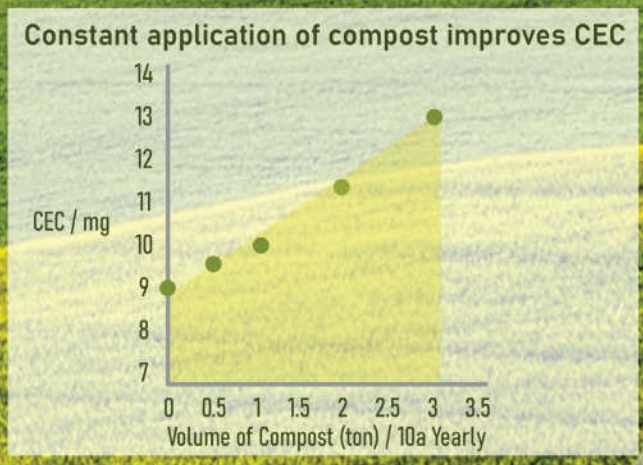


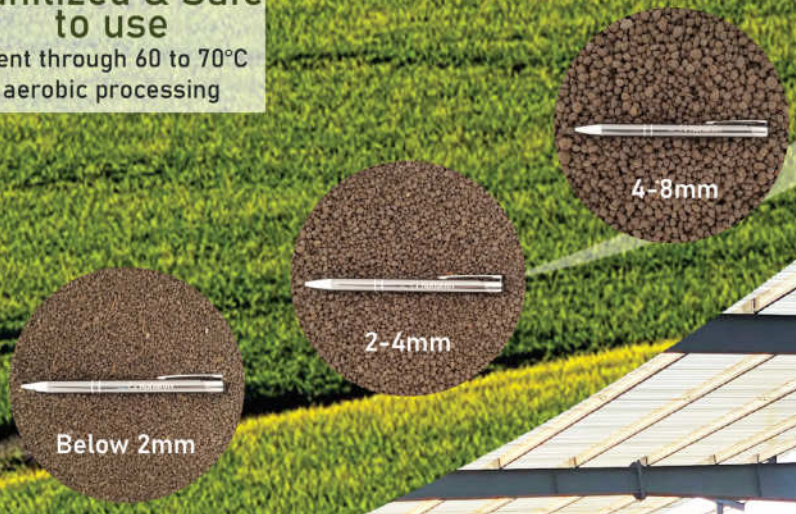


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As the poultry industry grapples with an uncertain future, quality processing solutions are proving their value.

# Delivering quantity without compromising quality

ACCORDING TO A report by Rabobank, the poultry industry is facing a difficult period following the Russian invasion of Ukraine as rising grain prices put a strain on the sector.

The higher cost of raising livestock is, out of necessity, being pushed onto the consumer, which is having a detrimental effect, especially in developing countries where food expenditure can represent a significant percentage of household spend.

These macroeconomic developments – combined with lower purchasing power post-pandemic – has the potential to lead to regional crisis situations within the industry.

However, the situation is not hopeless, as Rabobank has indicated that global poultry demand and trade will remain strong for the rest of the year with various sources predicting a CAGR growth of 4% in the following years. This could be enhanced further by a focus on efficiency to offset higher costs and supply challenges.


Image Credit: Marel

Marel's IRIS Fillet Inspector camera system visually assesses chicken fillets to meet the requirements of the customers.

### Quality alongside quantity

While efficiency and production growth should of course be targeted, quality cannot be comprised, which is where processing companies such as Marel are investing heavily to lead the way.

Earlier this year, in a demonstration of this commitment, Marel added the IRIS Fillet Inspection (FI) camera to its food quality programme for poultry processors for quality assurance of chicken fillets. Indicating its belief in the unquestionable necessity of quality, Marel's IRIS FI camera can detect defects such as bruises, fat and skin, providing the option to secure visual quality in addition to deboning systems, trimming stations and bone scanners. IRIS FI can be combined with Innova distribution software and a fillet distribution system to filter out products that don't meet criteria – enhancing efficiency.

**The wide range of solutions which offer both quantity and quality has stapled Marel as one of the most trusted suppliers worldwide.**

In a recent report showcasing the market demand variations in respect to anatomic and non-anatomic cuts, Marel demonstrated how it has continued to develop innovations to meet all customer requirements presented. For example, in response to South-East Asian processors need for anatomic leg portions (as local consumers prefer dark meat) Marel released the JL/JL-R leg processor after studying how processors produced this portion manually.

The module reproduces the hand movements necessary to ensure maximum removal of the oyster with the anatomic leg and allows for the oyster meat to be harvested – increasing yields obtained through automatic leg deboning systems.

Recognising the need for uniform cut weights for use in the fast-food industry (to ensure similar cooking times), Marel offers the ACM-NT Convenience Food cut-upsystem. In the industry, wings are cut with rosette of breast meat attached, breasts are cut into three portions and thighs and drumsticks are not cut between respective joints. The ACM-NT Convenience Food cut-upsystem can doe all these cuts automatically and has been approved by the QSR chain.

In many markets, the breast is considered the most valuable part of the chicken and virtually all bone-in breast portions are deboned into a wide variety of breast fillet products. Filleting can be done manually or automatically, the bone-in input material being a front half or breast cap. The Marel ACM-NT cut-up system can produce both and can also cut non-anatomic breast products sold bone-in.

The wide range of solutions which offer both quantity and quality has stapled Marel as one of the most trusted suppliers worldwide and this is reflected in customer feedback.

### For all to see

Allison Smith, site director at Cranswick Country Foods Fresh Poultry, who visited Marel's exhibition stand at VIV Europe 2022 said, "Personally, I take great pride in our facility's hygiene and cleanliness, therefore I am particularly enthusiastic about Marel's one-touch solution for breast


Image Credit: Marel

Marel's central theme at this year's VIV Europe was 'Connect for success', pointing out the importance of connectivity in all areas of poultry processing.

**Meyn provides knowledge, equipment, systems and services all over the world.**

deboning and the downstream processes for automated fillet handling.

"This is an enormous hygienic advantage in many aspects, one of which is being a huge labour-saving solution, up to about 16 people."

At the stand, Marel received visitors from a diverse range of countries including African contingents from Libya, Tanzania and Cameroon; demonstrating the company's reach in all kinds of markets.

Marel was, of course, not the only company operating within this space which was on display at VIV Europe. At the booth manned by Meyn, a specialist that has been fully dedicated to poultry processing for many years, visitors could explore the atmospheric terrace and learn about the company's strategies for delivering efficient and quality solutions.

The company provides knowledge, equipment, systems and services all over the world and relished the chance to reunite with familiar faces at the show in these unsettled. Sales director Robbert Birkhoff, commented, "It feels good to see our international colleagues again; meeting face-to-face is so much more satisfying for our business than all the Zoom meetings from last years. The access to the launch of our in-line dark meat deboning technology was by invitation for industry-specific relationships. It was a pleasure to present our innovation and receive positive responses from our valued customers."

With the poultry industry facing a potentially promising but challenging future, the importance of reputable providers delivering efficient, quality and hygienic processing solutions cannot be understated.

Animal health is crucial in a food chain and for livestock farmers. Much has been done recently to ensure healthy growth and prevention of diseases in animals. African Farming takes a look at some of the developments.

# New solutions on the block

HEALTHY ANIMALS ARE the foundation of healthy and growing communities. Preventing and controlling diseases grows economies, bolsters local communities, and improves the health of vulnerable populations. Here's a round-up of some developments to boost animal health.

Researchers at the McMaster University have developed a new form of rapid test to detect infections in farm animals, responding to the rising threat of dangerous outbreaks. *Science Daily* reported that the prototype has been proven effective in detecting a devastating diarrhoeal infection in pigs and can be adapted to test for other pathogens, and in other animals.

The test, created by biochemist Yingfu Li and engineer Leyla Soleymani and their colleagues, uses a small sample of saliva to detect the chemical markers of infection.

It uses technology similar to a form of test the same research team recently created to detect COVID-19 and other infections in humans. The human test is now moving toward the marketplace with public research funding and corporate support.

The animal test, once it becomes widely available, is expected to be a valuable tool for identifying and isolating outbreaks in farm settings, and for limiting the possibility of animal-to-human transmission of infections, which is believed to be the origin of the COVID-19 pandemic.

"There is a really a clear need for this technology," Li said. "There are many reasons why everyone should care about animal-infection surveillance."

The researchers have designed the aptamer-based test to be portable, accurate and quick, allowing veterinarians and other animal caretakers to identify, isolate and treat infected animals quickly.

The work has been published in the German science journal Angewandte Chemie, which has identified it as a "very important paper" – a specific and rare distinction. The research was funded by the Natural Sciences and Engineering Research Council of Canada.

The test works by mixing a small saliva sample with a chemical reagent and applying the blend to a small microchip reader, which is in turn attached to a smartphone, which displays the results in minutes.

Image Credit: Adobe Stock

Researchers at McMaster University have developed a rapid test that has been proven effective in detecting a devastating diarrhoeal infection in pigs and can be adapted to test for other pathogens, and in other animals.

Meanwhile, Evonik and its academic partners have delivered eight abstracts outlining their latest research findings in dairy cow nutrition solutions – with a particular focus on the essential amino acid, methionine – at this year's American Dairy Science Association Annual meeting.

"We're looking forward to engaging with representatives from all areas of the industry and sharing information and expertise as the sector works together to help feed our growing population in a sustainable way," said Dr Kiran Doranalli, head of Ruminant Solutions at Evonik.

Adding another example to the world of health innovations for animals is METEX NØØVISTAGO, an animal nutrition expert has announced the launch of a new solution range: inneus for pig and poultry health.

According to METEX, the inneus range of products, are solutions based on a synergistic combination of functional amino acids potentialised by specifically selected polyphenols. Inneus aims to positively influence intestinal health in order to help the host better cope with physiological and sanitary challenges such as weaning for piglets, or coccidiosis for chickens. inneus is said to be the result of an intense and fruitful research and development programme at METEX, aiming to understand the role of the functional amino acids and their synergies in the support of digestive physiology of monogastric animals.

**METEX NØØVISTAGO, an animal nutrition expert has recently announced the launch of a new solution range: inneus for pig and poultry.**

METEX said that its research and development team focused the effort on functional amino acids scientific concept, trying to design a complete solution, targeting the four main pillars of gut health; gut barrier function, immune fitness, oxidative status homeostasis, and microbiota balance.

Kostas Syriopoulos, brand in charge of inneus, said, "The objective was then to find the right combination and the right synergy, to end up with a complete solution which can be implemented at a consistent dose, reaching all key aspects of digestive health.

"We've found out the need to potentialise the specific targeting of functional amino acids with a selected polyphenol, notably to reach the hindgut and be able to positively modulate the microbiota," Kostas furthered.

Kohshin is one of the leading manufacturers of composting machines for waste treatment which converts animal manure into organic fertiliser.

# The role of recycling in manure

JAPAN-BASED KOHSHIN ENGINEERING has been developing new technologies and products to support the poultry and livestock sector. Hiroki Sumiya, President of Kohshin Engineering, speaks about the circular approach towards manure management.

**What additional value can poultry owners gain from composting birds' manure?**
The components of organic fertiliser are not always the same. Mixing the fully composted manure with chemical fertiliser will complement the advantages of both organic and chemical fertilisers, turning them into a valuable product with good quality soil improvement composition.

**Please share your thoughts on organic versus chemical fertilisers?**
I think the most important factor in making agricultural products is soil preparation. For that, it is necessary to add chemical fertiliser. However, the most important thing is to add a high-quality organic fertiliser to the soil. This will help support a pollution-free environment.

In my opinion, farm owners spend ample time to produce a high-quality organic fertiliser rather than using manure that was only dried for one to two weeks. Our goal is to develop a product that can be mixed with chemical fertiliser.

Image credit: Kohshin Engineering Co. Ltd.

Hiroki Sumiya, President of Kohshin Engineering

**What is Kohshin's view on a circular approach towards manure management? Are your customers already using a circular approach?**
Many of our customers are engaged in circular (recycling-oriented) agriculture, and we support the production of high-quality organic fertiliser through composting. We have customers that use the composted livestock manure to produce food crops including orange, broccoli, coffee, rice, grapes, corn and cassava.

Evonik's services and knowledge can help all links in the meat production chain by supplying the required amount of methionine in feed intake

# Ensuring constant supply of methionine

METHIONINE IS AN essential amino acid. This means it cannot be manufactured by livestock, and the required amount must be supplied in the feed intake. However, the manufacturing of all proteins in the body rely on methionine. This is because the process of protein production relies on the instructions from DNA being translated in the ribosome by messenger RNA (mRNA) using codons; triplets of nucleotides that code for specific amino acids, and so the primary structure of the protein.

And the first codon of every protein manufactured by higher animals, codes for methionine. With insufficient methionine available, no protein synthesis can occur. It literally stops at this first step. So what does this mean for animals? First, we think of proteins as the main component of muscle, or egg white, or milk protein. Hence, a deficit of methionine would mean less growth, less eggs, less milk. However, proteins are also key chemicals that keep an animal functioning. Some examples are:

- Enzymes: digest food, destroy pathogens and recycle dead cells in the body
- Hormones: chemical signals that regulate many body functions. For example luteinizing hormone and follicle-stimulating hormone are both involved in efficient reproduction, whilst thyroxine is involved in regulation of metabolic rate.
- Structural protein such as collagen and keratin actually define the bodily structure of animals, and help to protect it physically.

With a deficit of methionine, and its key role in all protein synthesis, the production of any and all of these compounds is potentially affected.

In reality, animals conserve methionine supply to ensure the continuation of essential functions of life; but this then means any growth or milk or egg production will be sacrificed and And this is what we see when there is insufficient methionine in the diet.

So, how much methionine does an animal need? This depends on the species – chicken, pig, cow, turkey etc; the performance expected – rapid growth, high egg production or lower production levels; management and environment.

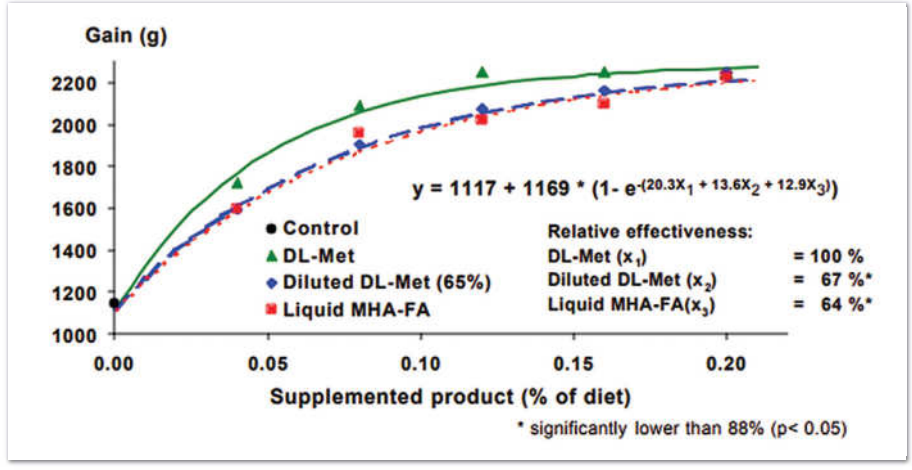


Image Credit: Evonik

The graph shows increasing quantities of DL Methionine or MHA being added to a feed deficient in methionine, along with measuring the growth of birds.

Taking all of these factors into account, we can determine the requirement for methionine. We can calculate this on a digestible basis, to actually measure the quantity of methionine actually utilised by the animal. Using this requirement, we can then look at the feed stuffs available and find the best, most cost effective way to supply this requirement; we can formulate a feed on a least cost basis.

With methionine being so vital, it is essential to calculate requirements and potential supply from feed very accurately and precisely. Too high a requirement / supply, and money is wasted. Too low a requirement / supply and the animal will not be efficient and, potentially, ill. This is where Evonik steps in as the world's leading experts in methionine requirements, possessing the world's most complete database of raw material composition.

One way to ensure requirements are met is to use pure methionine sources. There are three forms widely available: DL Methionine – for example MetAMINO from Evonik; L Methionine; and Methylhydroxy analogue MHA, also called HMTBA.

The problem is that MHA is not an amino acid and must be converted to methionine before it can do any of the jobs described above. The absorption and conversion process for MHA is not totally efficient, such that only 65% of each kg of MHA can actually perform the vital methionine tasks. This fact has been proved in numerous experiments over the past 30 years. An example of such an experiment in the image above. Here, increasing quantities of DL Methionine or MHA are added to a feed deficient in methionine, and the growth of birds measured. As a control measure, some birds were also fed on a feed where the DL Methionine had been diluted to 65% by adding starch. You can see that to achieve the same performance (in this case a gain of 2000 g) one needs approximately 0.07% MetAMINO® compared to 0.11% MHA – a ratio of approximately 65:100.

This then means that including MHA at the same inclusion level as MetAMINO will result in poorer performance; in this case about 10%. Alternatively, including MHA at the correct inclusion level is likely to increase feed cost. Either way, MetAMINO® is the more dependable methionine source.

In conclusion, it can be said:

- Methionine has a unique position in protein synthesis in the body.
- As an essential amino acid it must be supplied in the feed.
- A deficit will likely cause a reduction in commercial performance.
- Of the three sources available, DL Methionine is the most effective.
- Evonik's services and knowledge can help all links in the meat production chain to improve efficiency and become more profitable.

Enhanced production along with marketing of cattle and its by-products have the potential to improve the performance of value chains.

# Raising the steaks: All efforts in to beef up production

An ongoing study by scientists from the International Livestock Research Institute shows that poor cattle productivity limits the supply of quality beef in the market.

Image Credit: Adobe Stock

LIVESTOCK PLAY A key role in many smallholder farmer households and to many, animals are a secure source of daily food and nutrition.

According a report by Judy Kimani of International Livestock Research Institute (ILRI), in Nigeria, cattle are important livestock, given the prominence of beef consumption in the country. Around 99% of Nigeria's cattle population is kept in smallholder and pastoral systems using indigenous production methods. However, the domestic production of cattle is unable to meet the country's growing demand for beef.

One of the reasons is weak market structures for cattle in the country. An ongoing study by scientists from the International Livestock Research Institute (ILRI) shows that poor cattle productivity limits the supply of quality beef in the market and poor wholesale prices for cattle and beef are key bottlenecks in the value chain. Most meat handlers are also poorly skilled.

"Though by far the largest single market activity in the country, cattle trade is also hampered by long distances to the market and between points of production and sale," said Joshua Aboah of ILRI West Africa, who led the study. "Most cattle producers are in the north of the country, but they sell their animals in the south, which brings with it significant distribution problems and high transportation costs. These, in turn, raise market prices for ordinary consumers."

Enhanced production and marketing of cattle and its by-products have the potential to improve the performance of the value chains. To improve beef distribution channels in the country, the researchers recommended increasing the supply to abattoirs and butchers.

The study also urges producers to regulate the timing and proportion of cattle sales to curtail the tactics employed by wholesalers to exploit them.

In marketing, online auctions can serve as a virtual spot market that offers producers an alternative and efficient way to reach other actors besides wholesalers. But these strategies require substantial capacity building and market development investments to boost the producers' capacities for production, marketing and cattle inventory management.

The ongoing study aims to provide evidence to guide policies to improve livestock market efficiency and effectiveness, and the socio-economic conditions of cattle producers and other value chain actors in Nigeria.

**Beef Value Chain Forum (BVCF), a consortium formed by Namibian beef producers, has so far raised US$9.8mn to be channelled towards the establishment of a new beef processing facility targeting the export market, known as Savanna Beef Processors Limited.**

### Pushing production

To solve some of Africa's beef production issues, Beef Value Chain Forum (BVCF), a consortium formed by Namibian beef producers, has so far raised US$9.8mn to be channelled towards the establishment of a new beef processing facility targeting the export market, known as Savanna Beef Processors Limited.

The BVCF was officially inaugurated in 2021 with a growing membership base of over 500 members, with the aim to increase the profitability of cattle producers by creating a world-class brand through local value addition. Food Business Africa stated that this will be achieved through the construction of a state-of-the-art abattoir and processing facility, to tap into the world beef market.

Namibia is the leading producer and exporter of beef in Africa; however, the country has in the recent past exported more live animals as compared to value added meat. According to Meat Board of

Image Credit: Adobe Stock

According to Meat Board of Namibia, in the first five months of 2021, the Southern Africa country exported 45,623 live animals, while local slaughtering stood at 29,379 head of cattle for both export and local consumption during the period under review.

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**Strengthening ties**

Meanwhile, the Namibia High Commissioner to Ghana, Selma Ashipala-Musavyi, has given an assurance of deepened trade relations between Ghanaian and Namibian businesses, which marks the entry of the first consignment of Namibian beef imported to Ghana.

Reports from Graphic Online informed that the first official shipment of 15 tonnes of beef products from Namibia is a partnership between the Namibia Meat Corporation (Meatco) and Abanga Farm and Food Systems, Ghana, the exclusive distributor of Namibian beef in Ghana and West Africa.

Namibia is known for its export of beef and related products, while Ghana is a major meat importer. The beef from Namibia is grass-fed with no added hormones, which makes it unique.

**The Namibia High Commissioner to Ghana, Selma Ashipala-Musavyi, has given an assurance of deepened trade relations between Ghanaian and Namibian businesses, which marks the entry of the first consignment of Namibian beef imported to Ghana.**

With the high quality of breed, it is not surprising that Namibia in February, 2020, became the first African country eligible to export meat to the United States of America. Ashipala-Musavyi indicated that the maiden shipment of Namibian meat products to Ghana gave commercial meaning to the trade relations between the two countries, stressing that aside from bringing the people and especially the private sector together, it was taking place against the backdrop of the impact of COVID-19 and the ongoing conflict in Europe on the global supply chains.

She expressed the hope that the partnership between Meatco Namibia and Abanga Farm and Food Systems would mark the beginning of a long and mutually beneficial relationship between the countries.

**Bonsmara: the possible solution?**

The Bonsmara, which was developed in South Africa from the 1930s, was bred specifically for African conditions, and is the most dominant beef cattle breed in the country today. This breed of cattle is known for its high quality beef and resistance to local diseases. Due to the focus on developing a functionally efficient animal, the Bonsmara became the dominant breed in South Africa within 25 years of its establishment in 1964. Today, it still has the biggest commercial base in the country.

The breed's efficient growth benefits the feedlot industry in particular, while excellent carcasses are advantageous to abattoirs, and both have led to a positive change in the beef cattle production industry in South Africa.

While speaking to *Farmer's Weekly*, Louis Steyl, CEO of the Bonsmara Cattle Breeders' Society of South Africa explained how the breed can help mitigate climate change effects. He said, "Climate change is a reality. This is why it's so important for breeders to select animals for efficiency, with far more emphasis on regenerative agriculture. Bonsmara breeders need to focus on selecting animals that have lower maintenance requirements and produce more on smaller areas. The same goes for intensive systems such as feedlots, where there is a big focus on improving feed efficiency. This is why there are no fewer than seven feed-efficiency testing stations owned by Bonsmara breeders. The breeders focus on bettering the genetics to be able to adapt to the changing climate."

Another study has analysed data from countries to see which ones have increased or decreased their consumption of meat.

The study's results, published in *Animals*, reveal that many countries may have reached peak meat consumption. However, there is also proof of continued consumption increase in many of the emerging economy nations. The researchers said they found evidence of this when they attempted to link Gross Domestic Product (GDP) per capita to meat consumption per capita. They found a direct link between rising consumption and increased wealth in emerging economies, but no relationship in the higher income countries. Between 2000 and 2019, there were major changes in meat consumption across the globe. In 2019, poultry was the most popular meat globally speaking, followed by pork, beef, and then sheep and goat meat.

The study found that global beef consumption between 2000 and 2019 dropped by 3.9% from 22.8% to 18.9%. Consumption of beef only increased in Ethiopia, Israel, Saudi Arabia, Turkey and Vietnam.

Potassium – one of the three necessary macro nutrients, along with nitrogen and phosphorous – is required in good amount for the growth of oil palm. Dr Terry Mabbett reports.

# Pre-eminent potassium for oil palm

The potassium content of oil palm tissue remains remarkably constant at around 1.15% of dry matter throughout the life of the crop.

Image Credit: Adobe Stock

THE WHOLE POINT about well-balanced plant and crop nutrition is that all nutrients are of 'equal' importance, irrespective of the actual amounts required. The real need is for measured quantities relative to each other and mutual balance across the whole plant. However, in practice some nutrients are 'more equal than others', the nutrient with a perceived position of superiority varying for different crop plant species.

The pre-eminent nutrient for oil palm is potassium (K), one of the three macro nutrients, along with nitrogen (N) and phosphorous (P). Not only is potassium the nutrient required in greatest actual amounts by oil palm but it is also a key nutrient which appears repeatedly on the 'radar screen' when deficiencies arise and when there are imbalances involving interactions between two or more nutrients. Imbalances which feature potassium may involve macro nutrients like nitrogen, secondary or meso-nutrients such as magnesium (Mg) and even micronutrients or trace elements such as boron (B).

The concentration of the other nutrients in the vegetative tissue of oil palm (e.g. stems and leaves) decrease with increasing age, but potassium is highly unusual in this respect. The nutrient's content of oil palm tissue remains remarkably constant at around 1.15% of dry matter (DM) throughout the life of the crop, from the oil palm nursery right through to maturity and the bearing of fruit bunches. Fruit bunches contain high levels of K (0.65%) and if oil palm is to yield at even moderate rates, it must absorb between

**It doesn't come as a surprise that the oil palm is able to absorb potassium from the soil against a concentration gradient set up because the root cells invariably contain a higher concentration of the nutrient than the soil solution.**

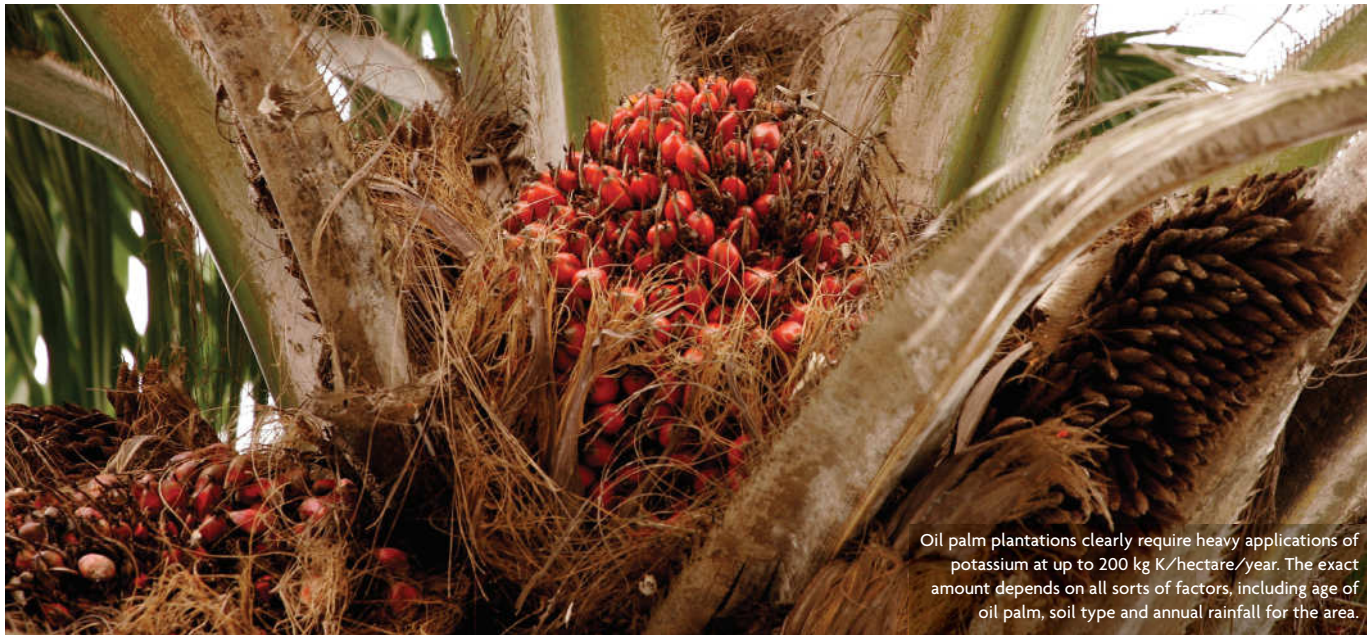

Image Credit: Adobe Stock

Oil palm plantations clearly require heavy applications of potassium at up to 200 kg K/hectare/year. The exact amount depends on all sorts of factors, including age of oil palm, soil type and annual rainfall for the area.

2,000 and 2,750 kg K/hectare over the 10 years after planting into the field.

It doesn't come as a surprise that the oil palm plant is able to absorb potassium from the soil against a concentration gradient set up because the root cells invariably contain a higher concentration of the nutrient than the soil solution. Potassium uptake is therefore linked to metabolism of oil palm because ability to take up ions against a concentration gradient requires an energy input. Potassium ions (K+) are the most abundant cations (positively charged ions) in the cytoplasm of cells and are not metabolised or bound up with complex organic molecules. This means that K+ in oil palm tissue is 'free' and highly mobile and showing a high correlation between the concentration (of K+) and the metabolic activity of the tissue concerned.

Potassium ions are responsible for activating or priming a wide range of enzymes which are responsible for catalysing biochemical reactions in the synthesis of polysaccharides such as starch and also lipids (oils). A catalyst is a substance that can alter the rate of a chemical reaction without undergoing any permanent change itself. Enzymes are biological catalysts.

Potassium is additionally required for individual steps and stages in the synthesis of proteins, including translation of genetic triplet codes into the manufacture of enzyme proteins and the insertion of inorganic nitrogen (N) into amino acids. It is also necessary for the translocation of glucose carbohydrate (manufactured by photosynthesis) from source points in the leaves to sink points (for utilisation and storage) such as fruit bunches. Potassium also hones and heightens the effect of plant hormones, including indole acetic acid (IAA) and cytokinins required for plant growth through cell division in meristematic tissues such as the cambium.

The role of potassium does not end there because it plays a key part in the osmo-regulation (uptake and loss of water) by cells, and particularly guard cells associated with stomata (pores) on the leaf surface. For this reason K+ is often called the 'gatekeeper' nutrient because it has overriding control and effect of water movement into and out of cells.

**Potassium with its overseeing and overriding role in the movement of water in and out of cells, including guard cells, ensures that the opening and closing of stomata is timed to ensure maximum photosynthesis and minimum water loss.**

The pair of guard cells that surround the stomatal pore possess unevenly thickened walls and therefore, assume a sausage (crescent) shape as they fill up with water (become turgid), revealing a wide open pore between them. A wide open pore allows free entry of carbon dioxide for photosynthesis but at the same time loss of moisture by evaporation of water vapour (transpiration). When the guard cells are flaccid (low in water) they become straight, lie side by side and close off the pore.

Potassium with its overseeing and overriding role in the movement of water in and out of cells, including guard cells, ensures that the opening and closing of stomata is timed to ensure maximum photosynthesis and minimum water loss. Potassium is therefore the key nutrient in maintaining the food manufacturing capacity of the oil palm plant through photosynthesis, especially during periods of physiological plant stress brought on by drought or soil salinity.

### Practicalities of potassium

Potassium is clearly a key nutrient for oil palm, so here are the goals and requirements for practical potassium fertilisation of oil palm. The two basic and overriding goals are to provide the palms with enough potassium fertiliser and to minimise the loss of potassium from the soil through factors such as leaching. Potassium must be provided on the basis of the right chemical in the right amount, applied in the right place and at the right times.

The most widely and intensively used potassium fertiliser is Muriate of Potash (MOP) otherwise called potassium chloride and with a potassium equivalent of 60% K2O. The reasons for this particular choice are economy of purchase with the added benefit of 35% Cl (chloride). Most soil types require two to three doses per year (one application every four to six months), although very sandy soils and peat soils should be given three to four doses per year (one application every three to four months). Applications should not be made during very wet weather conditions.

Oil palm plantations clearly require heavy applications of potassium at up to 200 kg K/hectare/year. The exact amount depends on all sorts of factors, including age of oil palm, soil type and annual rainfall for the area.

## AfDB donates US$5.4mn for food security project

Image credit: AfDB

AfDB will provide Central African farmers with seeds and fertilisers.

THE BOARD OF Directors of the African Development Bank Group (AfDB) has approved a grant of US$5.39mn to the Central African Republic. The grant will assist the production of an additional 32,000 tonnes of foodstuffs and enhance food security for 100,000 people. It will also help the Central African Republic to implement an emergency food programme to tackle the surge in food prices exacerbated by the war between Russia and Ukraine.

It will help increase agricultural productivity and production in the Central African Republic. The project will have a positive impact on the food security of nearly 100,000 people.

The grant will provide for the procurement of 1.8 tonnes of maize seed, 1.2 tonnes of rice seed and 750,000 linear metres of cassava for the benefit of farmers. This will comprise pre-basic seed (seed produced by agricultural research centres) and basic seed (seed produced by approved seed bodies). To enable producers to master growing techniques, part of the grant will be used to train workers in three national institutions active in the field of agriculture.

## JOSKIN configurator to cover its entire range

INITIALLY AVAILABLE FOR only a few machine categories, the JOSKIN configurator is now evolving to cover the entire range of products.

One year ago, JOSKIN announced the official launch of an online configurator for its range of products. With this tool, the aim of the Belgian company was clear: to use digital solutions to stay as close as possible to the farmers. Accessible on a smartphone as well as on a tablet or computer, this configurator thus completed a growing range of digital tools dedicated to the company. Through it, JOSKIN wanted to give everyone the opportunity to design their own machine.

The first machines that could be configured were the livestock trailers and aerators. They were then joined by the livestock and transport ranges. Encouraged by the success met, the JOSKIN teams continued their efforts and are now announcing the extension to the entire range of products. The configurator aims to provide an intuitive working tool, capable of guiding each Internet user in order to let them define the JOSKIN machine of their choice.

Image Credit: JOSKIN

The configurator aims to provide an intuitive working tool.

The Desmet Ballestra Group has sold, installed and commissioned more than 10,000 process units in 150 countries on five continents.

# Food, Feed and Biofuel: global tech solutions at Desmet Ballestra

Image Credit: Desmet Ballestra

Desmet Ballestra is continuously enhancing its technologies to exceed market expectations.

DESMET BALLESTRA GROUP is the world leader in the field of tailor-made engineering and procurement services covering each step of the Oils & Fats industry, from oilseed preparation and extraction to oil processing plants, including refining and fat modification processes.

Moreover, in cooperation with their oleochemicals division, Desmet Ballestra has delivered almost 100 'classical' biodiesel pre-treatment and transesterification plants all over the world. The company benefits from a great worldwide reputation due to more than 75 years of unequalled experience, a strong R&D capacity and the most extensive customer base in the industry. It has a network of 17 local subsidiaries throughout the world and a track record of setting up more than 10,000 processing units in 150 countries.

**The Group is organised around three main areas of expertise**:

- Based on Belgium's De Smet know-how as the world specialist in oilseed and edible oil processing plants, Desmet Ballestra Oils & Fats Division delivers tailor-made engineering and procurement services, from oilseeds preparation and extraction to oil processing plants including fat modification processes.

The division also conveys the Group's expertise in oleochemical technologies including biodiesel processes that have met an outstanding success thanks to their reliability, versatility and performances.

- Composed of Rosedowns (UK) and Stolz (France), respectively dedicated to oilseed pressing and animal feed/ human food plants, Desmet Ballestra Manufacturing Division provides these industries with key equipment.
- Italy's Ballestra, specialised in process plants for detergents, surfactants and related chemical industries, leads the Detergents, Surfactants and Chemicals Division of the Group and is considered as a worldwide reference in these sectors.

Present on all international market areas, Desmet Ballestra coordinates its worldwide activities making the best use of the very important technical, technological and commercial synergies existing between its operations and is able to provide globally sourced competitive services, plants and equipment. Through its full-fledge research & development centers, in Brussels and Milan, and a number of Fundamental Research programmes in various Universities and Research Centres around the world, Desmet Ballestra is continuously improving its technologies and discovering new ways to cope with market requirements. Technical innovation and privileged customer relationship are the keys of the strategy of the Desmet Ballestra Group that is able to provide the latest technologies through a fully integrated international network of companies.

The Group has sold, installed and commissioned more than 10,000 process units in 150 countries on five continents.

**Desmet Ballestra benefits from a great worldwide reputation due to more than 75 years of unequalled experience, a strong R&D capacity and the most extensive customer base.**

*For more details, contact:*
*Regional sales manager of Desmet Ballestra Group NV, Bruno De Jaeger, at ofsalesafrica@desmetballestra.com*

desmet ballestra
Global technology provider for Food, Feed & Green Fuel

The African Emergency Food Facility programme for Kenya will enable more smallholder farmers to access climate-resilient staple crop seeds and affordable fertiliser.

Image credit: AfDB

Though the Russian war has pushed oil prices, efforts are underway to mitigate the situation with the help of oil seeds.

# Tackling the oil crisis

PLANT OILS ARE a staple in households, with edible and vegetable oils being the most common. In South Africa, these oils have seen a 50% to 100% price increase after the Russia-Ukraine war. There are fears of food security and scarcity, with rippling effects that impact the poor the most.

To solve this crisis, the Board of Directors of the African Development Bank Group has approved a US$63mn loan to Kenya to significantly boost cereals and oil seeds production by over 1.5 million metric tonnes over the next two years. The loan will support the country's Ministry of Agriculture, Livestock, Fisheries and Cooperatives. It will enable the government to promptly provide affordable fertiliser and seeds to farmers ahead of the October-December 2022 short rains and into the 2022-23 long rains crop production season.

Dr Beth Dunford, the Bank's vice president for Agriculture, Human and Social Development, said, "Successful implementation of the facility will see some 650,000 farmer direct beneficiaries, resulting in the production of 1.5 million tonnes of cereals and oil seeds."

Meanwhile, the Westfalia Fruit Group has unveiled three innovative environmental and social projects at its fruit processing plant in South Africa's KwaZulu Natal province, enhancing sustainability and helping local communities in the process. The plant refines avocado oil which is used in cooking to cosmetics, and has been developing innovative ways to reduce the three separate types of waste generated in the refining operation – soap stock, spent bleach earth and avocado wax.

Soap stock is a waste product from the refining neutralisation process, consisting mainly of free fatty acids, glycerides, glycerophospholipids and water. Another by-product of refining is avocado wax, which is removed from the oil during winterisation – a process in which the oil is cooled, in order for the wax to solidify. Finally, spent bleach earth, a combination of natural dolomite clay, activated carbon and diatomaceous earth, is used to remove colour from the oil in a bleaching process. The solid waste from the process can be composted and it also contains excess oil which can be extracted as wax and, in turn, made into a biofuel.

Desmet Ballestra offers a wide range of equipment to carry out functions at different stages of oil extraction. The seed, having been properly prepared, is separated into a crude oil fraction and a protein meal fraction by solvent extraction. The company's range of extractors like the Reflex extractor, the LM Extractor and the LLL Extractor are used for this step. Next comes desolventising. The solvent-laden meal exiting the extractor contains 26-30% solvent by weight. Desmet Ballestra's's DIMAX helps with the desolventising process. The oil/solvent mixture leaving the solvent extractor is commonly referred to in the industry as 'miscella'. The purpose of distillation is to thermally separate the miscella into a liquid oil fraction and solvent vapour fraction, which is enabled by OptiSim software, with its state-of-the-art tools to achieve optimum efficiency.

A baler is necessary for farmers to make harvested crops more convenient to store, and retain nutrients. The global market for agriculture balers is expected to grow at a CAGR of 5.0% during 2021-2026.

# Make hay while the sun shines


The premium MF 1842S has excellent strength and reliability required to meet high output demands.

Image Credit: Massey Ferguson

WHEN A CROP is cut and raked into a windrow, it needs to be collected to be able to be stored and/or sold. A baler compresses this cut and raked plant material and binds it with some form of binding, like twine, wire, or netting.

A baler is used to take cut and raked crops, like hay, cotton, silage, etc, into compressed bales.

These compressed bales of plant material make them easier to transport and handle throughout the consumer cycle. A properly baled bale of crops will retain more nutrients for later use, whether it be for livestock or something else entirely.

We take a look at the recent developments in the balers equipment market.

**Case IH**

Designed for larger livestock farmers and contractors, the Case IH RB 456 and 466HD Pro Round Balers produce higher density bales in a wide range of crops, from wet silage to dry straw. For top reliability and throughput, it has been fitted with heavy duty components and fewer moving parts.

CASE IH stated that the baler is able to handle up to 30 tons per hour, the RB HD Pro has been designed to manage everything from straw and hay to haylage and silage at different cut lengths, thanks to new no-slip dual drive rolls and a wide range of knife sets selectable from the cab. An extra-wide diameter rotor helps prevent blockages, while an Active Drop Floor means any that do get through can be cleared quickly.

The Balers come in two bale size options: the RB456 HD Pro makes 120 cm-wide bales from 90-165 cm in diameter, while the RB466 HD Pro's are also 120 cm wide but from 90-190 cm in diameter. Each size comes with three rotor options: a feeding rotor, 13 cutter knives or 25 cutter knives, making six models in all.

**Massey Ferguson**

Massey Ferguson, a worldwide brand of AGCO, has announced the launch of the premium MF 1842S high capacity, in-line small square baler. This new model delivers the exceptional outputs required by contractors and professional users looking for maximum performance to make standard size bales.

**The Case IH RB 456 and 466HD Pro Round Balers produce higher density bales in a wide range of crops, from wet silage to dry straw. For top reliability and throughput, it has been fitted with heavy duty components and fewer moving parts.**

"Developed by baler specialists at the renowned Hesston factory, the MF 1842S is a premium, super heavy-duty machine, capable of making the highest number of bales to secure crop quality in tight operating windows," explains Jérôme Aubrion, director marketing, Massey Ferguson, Europe & Middle East.

The new baler, which makes standard, 14x18 inches bales, builds on the success of the market leading MF 1840, which has an enviable reputation for performance, reliability and low costs of ownership.

"Engineered to the highest standards, the new MF 1842S employs well-proven high capacity components from the MF 185 large square baler and other models sold in North America. These combine to deliver considerably higher outputs for operators needing significant extra feeding capacity, much greater outputs and higher densities, if required," Aubrion added.

The heavy-duty chassis and frame are the strong foundations around which the new MF 1842S is built. Designed to handle high loads this provides the excellent strength and reliability required to meet high output demands.

PTO power is transmitted via a new primary shaft with mid-mounted support, which ensures it remains perfectly in line with the drawbar at all times. A significantly heavier duty slip clutch protects the driveline and delivers 20% more torque than the existing MF 1840 design.

The MF 1842S gearbox is specifically engineered to handle more power and high baling loads. Proven on high capacity balers sold in the USA, it has a great reputation for its reliability and long service life.

Inherited from the highly regarded MF 185 large square baler, the 1.98 m wide pick-up comes with a great reputation. Equipped with a high speed reel, which operates at 145rpm (37% faster than the MF 1840), this feeds the crop to two large, 330 mm diameter cross augers. Together they offer exceptional feeding capacity to boost productivity.

To match the baler's high performance Massey Ferguson specifies heavy-duty and reliable Rasspe knotters on the new MF 1842S baler. Made from well proven components, these deliver superb, dependable operation and are capable of working with many different types of twine.

The company has also announced a series of improvements to its MF 2200 Series of large square balers. The newly included features and upgrades will better the durability, performance and ease of use of the five models in the 2200 Series.

According to Farm Contractor, included in the 2200 Series is the new MF BaleCreate terminal display. This allows operators to set-up and monitor important functions via three, selectable work screens. Operators can swipe between the three screens, much like a tablet, for simple yet comprehensive electronic control of the entire baling sequence.

**The MF 1842S gearbox is specifically engineered to handle more power and high baling loads. Proven on high capacity balers sold in the USA, it has a great reputation for its reliability and long service life.**

Using the BaleCreate terminal display, operators can now electronically control bale length. The system continually monitors the size of the previous ten flakes and ensures that target bale length is maintained to within half of an average flake size.

Meanwhile, the round baler is fast becoming the primary home for tractor implement management systems (TIM), with Massey Ferguson becoming the latest company to equip its machines with the technology. The new TIM specification provides high levels of automation, including stopping the tractor. Other new features across the range include automatic greasing and an entry-level touchscreen control terminal.

### John Deere

John Deere has established an allied agreement with Mike and Jason Grady of Twin Pak to better serve existing and future John Deere small square baler customers. "These agreements bring together a revolutionary patented design for small square balers with a best-in-class dealer network," said Rob Rippchen, global baling and mowing business manager for John Deere.

"We are excited to work with John Deere and more than double the productivity of farmers putting up small square bales, letting them to do more with fewer operators," said Jason Grady, CEO of Twin Pak.

A recently published Fact.MR study foresees that the demand for agriculture equipment is projected to expand at a CAGR of 4% in terms of value by the end of 2032.

Grading agricultural commodities ensures that farmers adopt quality specifications for their products, which in turn avoids market malpractices and ensures consistency in quality.

# Picking out the perfect produce

ALTHOUGH FRUITS ARE one of the world's most commonly consumed types of food, their popularity doesn't make it any easier for businesses to grow, sort and pack them.

Soaring standards required by different markets tend to call for technologies that allow businesses to maintain the quality. According to TOMRA Food, a leader in post-harvest solutions, the value of the global apple market is approximately US$79bn per year. This can profitably sustain thousands of growers and packers and allow them to stay competitive. And staying competitive is made much easier by adopting state-of-the-art sorting and grading technologies, which solve the challenges packhouses face.

TOMRA's solutions for apple packhouse operations include the TOMRA 5S Advanced sorting and sizing platform, Spectrim sorter and grader, UltraView inspection module, and Inspectra$^2$ apple grading system.

The TOMRA 5S Advanced builds on Compac's Multi Lane Sorter,

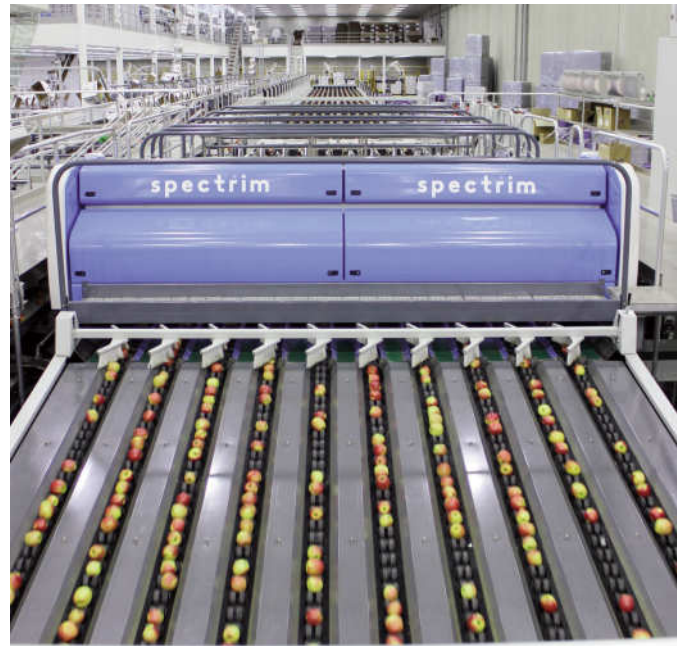


Image Credit: TOMRA Food

TOMRA's solutions for apple packhouse operations include the TOMRA 5S Advanced sorting and sizing platform.

but was redesigned from the ground up.

The platform is truly designed for hygienic operation, with toolless cleaning and sanitisation, and 100% stainless steel and food-safe polymer contact areas. Efficiencies are made possible by the machine's specialised software features and connectivity to the data platform – TOMRA Insight.

The TOMRA 5S Advanced's software features provide for optimisation and efficiency across the line and include programmes for element mixing, exact packout optimisation, and throughput control, as well as a dynamic lane balancer. These features improve productivity, quality and efficiency – and can be controlled easily via the sorter's intuitive graphic user-interface.

**AI-powered sorter**

The Sunsort AI machine, a sorter from Sunkist Research and Technical Services helps growers sort and grade citrus fruit more efficiently. The new sorter uses Google AI technology to assess the inherent quality of each piece it processes, including any potential defects.

According to the company, The machine's strength is its ability to use a proprietary imaging system to automatically identify fruit characteristics such as size, shape, weight, blemishes and even the decay that might not be visible to the naked eye. Be it citrus greening, oleocellosis, or citrus cankers, Sunsortai sorters can be trained to recognise blemishes and defects. All types of oranges, lemons, mandarins, and even grapefruit have been processed with the new sorter.

"Bringing AI to the fruit sorting process allows our packhouses to dramatically increase the speed, accuracy and efficiency of their sorting operations," said Aaron Gorsky, general manager of research and technical Services. "Sunsortai equipment can conduct a comprehensive fruit assessment and sort the piece accordingly, all in one pass. This offers substantial operational efficiencies and improvements."

**Developing farmer-friendly equipment**

A research, 'Development of a farmer friendly portable color sorter cum grader for tomatoes' published in the *Journal of Food Process Engineering*, stated that a sensor was developed with an efficient colour sorting programme, using integrated circuits along with a divergent rolling grader. The developed colour sorter-cum-size grader works on the principle of energetic reflection based on measuring the intensity of light and it comprises a feed hopper, chain conveyor, belt conveyor, three colour sensor, collecting ducts, inlet hopper, grader, outlet section, and collecting trays. The developed machine is operated by a single-phase 2 hp motor.

**Bringing AI to the fruit sorting process allows TOMRA's packhouses to dramatically increase the speed, accuracy and efficiency of their sorting operation.**

Image Credit: Adobe Stock

A sensor was developed with an efficient colour sorting programme for tomatoes.

The performance of the developed machine was analysed by measuring capacity, sorting efficiency, overall grading efficiency, and skin damage.

Based on the performance evaluation, the maximum sorting efficiency and overall grading efficiency obtained were 94.5% and 94.1%, 94.1%, and 94.6% for ripe and unripe fruits, respectively.

The researchers said the portable colour sensor-cum-grader can be used by the farmers/traders to get higher prices in the market. The capacity of newly developed equipment was approximately 40 kg/hr with an operational cost of US$0.038 per kg of tomatoes.

TOMRA Food has published a new e-book to help food processors and packers enhance efficiencies and profitability by using information gathered by sorting machines.

The booklet, titled, 'When Sorters Become Data Generating Machines', explains how businesses can "connect to possibilities" with the TOMRA Insight data platform, and the competitive advantages this gives. The e-book states that businesses can benefit from digital sorting data with minimal impact – all that's needed is wiring and a stable internet connection. The data solution's software stores and processes the data coming from sorters and presents this in near real-time in a dashboard-style monitoring and reporting system.

The partnership between JOSKIN and its distributor Bouchard Côte d'Ivoire, allows the customer to benefit from a quality service and spare parts at competitive prices.

# A winning partnership for the African market

IN 2017, THE first shipment of JOSKIN TRANS-PALM double-axle tipping trailers, especially adapted for harvesting raw palm bunches in wet areas, arrived in Côte d'Ivoire, delivered through the dealer Bouchard Côte d'Ivoire. This was the beginning of a winning partnership for both entities.

Over the years, Bouchard Côte d'Ivoire has remained true to this partnership. The company meets all demands by offering a wide range of products: single, double or triple axle, with payloads from 5 to 27 tons. From monocoque tipping trailers to dropside tipping trailers and construction tipping trailers, bale trailers, water bowsers or even slurry tankers, the range offered meets the needs and constraints of both traditional and specific farms (bananas, pineapples, palms, cassava, maize, forage). For each machine, Bouchard takes care of the delivery, start-up and technical follow-up.

For its part, JOSKIN is striving to produce machines that are increasingly specific and adapted to African countries. Roads and tracks in Africa can be treacherous, so the most suitable running gear for the customer's requirements is a must. This is why JOSKIN systematically examines all machines to ensure that they meet the demand.

The company also makes sure that containerisation is possible in order to limit transport costs.

Image Credit: JOSKIN

The JOSKIN TRANS-PALM tipping trailer first arrived in Côte d'Ivoire in 2017.

Thanks to the production capacity of its five factories, JOSKIN ensures a high level of quality and acceptable delivery times. Over the past 20 years, JOSKIN has industrialised its manufacturing processes. Each part is therefore produced in series to a precision of one tenth of a millimetre.

Each JOSKIN machine comes with a specific parts book that is also available via the joskin.com website. For Bouchard Côte d'Ivoire, this parts book is an indispensable tool for ensuring a quality after-sales service.

Thanks to the industrialisation of its production, JOSKIN offers a large stock of spare parts in order to ensure a responsive service. As a result, Bouchard Côte d'Ivoire always has the guarantee of having the right part ordered. This partnership between a manufacturer and a dealer therefore allows the user to benefit from a quality service and the delivery of spare parts at competitive prices.

**JOSKIN is striving to produce machines that are increasingly specific and adapted to African countries.**

To summarise, the quality, reliability and availability of spare parts, as well as the ability to deliver within an acceptable time frame, are key priorities for Bouchard. These ingredients undoubtedly explain the dozens of machines already sold by the dealer.

Image Credit: JOSKIN

Bouchard Côte d'Ivoire meets all demands by offering a wide range of products: single, double or triple axle, with payloads from 5 to 27 tons.

Image Credit: JOSKIN

JOSKIN offers a large stock of spare parts to ensure a responsive service.

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SEC Exports discusses the importance of efficient cold storage and intelligent warehouse design.

# The heat is on for cold storage warehousing

USING SURVEY DATA from across Africa, The Department of International Trade (DIT), identified numerous issues facing the farming and wider agriculture sector, ranging from targets to achieve food security within 20 years to support population growth, to changing consumer tastes and post-harvest efficiency.

In some territories, a staggering 40% of produce can be lost between harvest and plate, but what drives this loss? Poor equipment and inefficient processes certainly contribute, however wastage due to inappropriate storage, spoilage from stock rotation, supply chain delays and chill chain control are all contributing factors.

According to the West Africa Brief, agriculture and food production in West Africa alone is forecast to increase from US$293bn in 2020 to US$473bn in 2030; if the industry faces a 40% loss in produce through inefficiencies in storage, warehousing and distribution, what options do they have to avoid that unprecedented figure?

Increasing investment into food processing capability highlights the need to have the right process, equipment and warehouse storage infrastructure in place to cater for processed produce and frozen or chilled products. By implementing an intelligent warehouse design and carefully selecting suitable equipment for warehouse storage for ambient, chilled or frozen areas, growers and producers will optimise the use of the available space, ensuring streamlined operations and minimal food wastage.

To accommodate this urgent need, the heat is on for building efficient cold storage warehouses designed to maximise storage and distribution operations, maintain product quality and limit energy consumption. However this comes with its own set of challenges for operators in Africa, the majority of which manage warehouse storage and distribution supply chains in hot and humid climate conditions.

Many of these challenges can be overcome by implementing an intelligent warehouse design and carefully selecting equipment from sealed doors to racking and conveyors, all of which optimise the use of the available space, ensuring streamlined operations and maximised energy efficiency.

SEC Exports has over 20 years' experience in designing and installing bespoke warehouse and cold storage design solutions across Africa.

Image Credit: Dexion

When designing and operating a cold storage warehouse, factors to consider include the cost of maintaining an ambient temperature and the amount of energy needed. The internal working environment is a significant factor to keep staff protected to enable them to work efficiently in temperatures as low as -30° C. Maintaining a consistent temperature within other warehouse areas such as goods-in and dispatch, ensures product quality is unaffected. Additionally, automation and semi-automation can also improve efficiency of pallet placement, retrieval and stock control whilst minimising the time staff spend in a potentially harsh working environment.

SEC Exports has over 20 years' experience in designing and installing bespoke warehouse and cold storage design solutions across Africa using high quality storage equipment such as Dexion. Our bespoke designs are based on real operational data which are proven to be the most efficient solution for your ambient and cold storage needs. Ⓔ

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The scarcity of irrigation water is the main challenge facing the agricultural sector in many African countries. However, steps are being taken to mitigate the issue sustainably. Wallace Mawire reports.

# Strengthening the foundation of farming

CLIMATE CHANGE LEADS to competition for increasingly strained water resources. With 95% of African agriculture depending on unpredictable rains, the smart and sustainable use of the continent's water resources for irrigation will not only define Africa's future food and nutrition security, but also its adaptation to climate change.

The scarcity of irrigation water is the main challenge facing the agricultural sector in many African countries. However, steps are being taken to mitigate the issue sustainably.

The Zimbabwe Government, through the Zimbabwe National Water Authority (ZINWA), has procured 40 borehole drilling rigs to be equally distributed among the country's eight rural provinces to spur irrigation developments.

Dr Anxious Masuka, minister of Lands, Agriculture, Fisheries, Water and Rural Development said that the rigs have been deployed in Masvingo, Mashonaland East, Mashonaland West, Mashonaland Central, Midlands, Manicaland, Matebeleland North and Matebeleland South provinces of the country.

"The Presidential Rural Development Programme will touch all the seven districts of Mashonaland West Province with two boreholes being drilled in each of the 231 wards during the first phase. I am pleased to inform that these rigs are now being delivered, with what has been unveiled. When ZINWA takes delivery of more borehole drilling rigs, will we accelerate the implementation pace," Dr Masuka said.

**The Presidential Rural Development Programme in Zimbabwe will cover seven districts of Mashonaland West Province with two boreholes being drilled in each of the 231 wards during the first phase.**

Solar-powered boreholes are expected to open the way for local communities to establish horticulture gardens, drip irrigation systems and to grow high-value crops.

Image Credit: Adobe Stock

The unveiling of the rigs follows the launch of the national programme by President Dr Emmerson Mnangagwa in Mangwe, Matabeleland South Province, in December 2021.

The Rural Development Programme is an accelerator for the attainment of Vision 2030, anchored on the provision of water as a right and an economic enabler. The vision seeks to grow the country into a middle-income economy by 2030.

The Rural Development Programme is expected to transform rural communities from being largely economic spectators to largely economic actors and participants. Under the programme, the government, through ZINWA intends to drill and equip a total of 35,000 boreholes by 2025. "This means, a borehole in each of the 35,000 villages across Zimbabwe," Dr Masuka said.

Solar-powered boreholes are expected to open the way for local communities to establish horticulture gardens, drip irrigation systems and to grow high-value crops, establish fisheries, provide piped water schemes, together with washing slabs and cattle troughs.

In 2022 alone, 5,000 boreholes are expected to be drilled nationally, two per ward, and more than half of which shall have the gardens constructed the same year. Dr Masuka said that a whole of government approach will see ZINWA providing water infrastructure, the irrigation department supplying drip irrigation infrastructure and security fence, the Agriculture Rural Development Authority (ARDA), supported by the Agriculture Support Services department extending agronomy support, the Agriculture Finance Corporation (AFC) providing seed financing for cash crops growing, while the Agriculture Marketing Authority (AMA) and ZIMTRADE, the national trade development and promotion organisation extending marketing support.

The District Development Fund (DDF) is mandated to drill boreholes at all 9,600 schools in the country. The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development

has said that ZINWA will drill a borehole, one in each ward, for youth development.

Zimbabwe's National Agriculture Policy Framework for 2018-2030 on irrigation and water development states irrigation plays an important role in agriculture because it reduces farmers' vulnerability to weather and climate shocks and risks.

The framework mentions that Zimbabwe has the potential to irrigate more than 2 million hectares of land and yet, less than 206,000 hectares are currently under irrigation.

It adds that the utilisation of existing water bodies, underground water and

transboundary water bodies such as the Zambezi River and Limpopo River can make a significant contribution to food security and agricultural growth in the country, especially in drought periods. It however states that the available water bodies are currently under-utilised, mainly due to lack of investment in irrigation development, rehabilitation and modernisation.

For the agricultural sector, inadequate development, rehabilitation and modernisation of agricultural infrastructure across all categories has been a large contributor to low productivity and production, and ultimately competitiveness.

Meanwhile, similar efforts are being taken up in in Gambia too. The Food and Agriculture Organization has collaborated with the country's Ministry of Agriculture to implement 34 solar-powered water systems. This will irrigate community vegetable gardens and provide livestock watering points in villages all over Gambia. This is aimed at creating a greener future for over 6,600 community members, 90% of which are women.

**In Gambia, the Food and Agriculture Organization has collaborated with the Ministry of Agriculture to implement 34 solar-powered water systems.**

The initiative, funded by the European Union and the Global Environment Facility (GEF), was taken to provide boreholes for water-deprived community gardens. These are also equipped with solar-powered pumps that fill reservoirs kitted with filtration systems, providing clean water for irrigation and, critically, for household use and livestock

There are an additional 10 solar-powered water systems for livestock that are in advanced construction in the northern part of the River Gambia. "Before the installation of the solar systems and boreholes, we always had water challenges. Now that is in the past," said Foday Jadama, a farmer in the community. "We now have water in abundance to grow anything we desire."

Image Credit: Wallace Mawire

The Zimbabwe Government, through the Zimbabwe National Water Authority, has procured 40 borehole drilling rigs to be equally distributed among the country's eight rural provinces to spur irrigation developments.

## Green Climate Fund approves new projects

Image Credit: Adobe Stock

GCF invests in low-emission and climate-resilient development.

THE BOARD OF the Green Climate Fund (GCF) have approved US$60mn in funding to support climate-resilient projects in Benin and the Gambia promoting sustainable practices in vulnerable rural communities of these countries.

The Food and Agriculture Organization of the United Nations will offer its expertise to both projects for the sustainable management of natural resources and to help improve the livelihoods of those threatened by the impacts of climate change. GCF invests in low-emission and climate-resilient development to help vulnerable communities adapt to the impacts of climate change. It catalyses climate investments to facilitate climate adaptation and mitigation strategies in its efforts to achieve the goal of the Paris Agreement.

## With biogas and biomethane, EnergyDecentral 2022 focuses on two renewable all-rounders

ENERGYDECENTRAL, THE LEADING trade fair for decentralised energy supply, held from 15-18 November 2022 in parallel with EuroTier in Germany, will be presenting complete solutions for anaerobic fermentation of biomass and biogas processing. Numerous exhibitors will aim to offer biogas plant operators commercial concepts as an alternative to Renewable Energy Act (EEG) in Germany coming to an end, which offered a guaranteed fixed price over a period of 20 years. New technologies will enable the supply electricity, heat and fuels as flexibly as possible while also moving towards greater independence from Russian gas supplies thanks to innovative power-to-gas concepts.

"Currently, German biogas plants produce around 100 terawatt hours of gas annually, of which about 10% is processed into biomethane and fed into the gas grid," explained Marcus Vagt, DLG's renewable energy expert and project manager of EnergyDecentral.

Biomethane can be used in a variety of ways in the electricity, heat and fuel markets, depending on demand. In the long term, Vagt sees Bio-CNG and Bio-LNG as a viable alternative to fossil fuels. In addition to methane, raw biogas produced from biomass contains up to 40% carbon dioxide. Therefore, biogas must first be processed before it can be fed into the grid. The exhibitors at EnergyDecentral will be focusing on highly efficient technologies and sophisticated heat recovery systems for processing, which are installed on directly site as turnkey solutions.

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