

African Farming

and Food Processing

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Tractor survey

Stepping up the power

Cultivation for cut roses

Managing downy mildew

Towards a greener future

Exclusive interview with
Renewvia Energy



Poultry production focus for VIV Europe 2018. p12

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Case IH unveils new 2000 Series Early Riser planter



Image credit: Fendt



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African Farming and Food Processing

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Farming Calendar 2018

JUNE

4-5	African Farming's Agroinvestment Summit www.agroinvestmentsummit.com	LONDON
20-22	5th Agritec Africa www.agritecafrica.com	NAIROBI
24-26	Africa's Big 7 www.africabig7.com	JOHANNESBURG

JULY

12-13	Aviana Kenya 2018 www.avianaafrica.com/kenya	NAIROBI
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AUGUST

2-4	Value Added Agriculture Expo www.valueaddedagri-wa.co.za/en.htm	ACCRA
8-9	Farm-Tech Expo Kenya www.farmtech-expo-kenya.com	NAIVASHA

OCTOBER

10-13	6th Addis AgroFood & Pack www.addis-agrofood.com	ADDIS ABABA
22-25	IAOM MEA Conference & Expo www.iaom-mea.com	NAIROBI

NOVEMBER

26-28	African Agri Investment Indaba www.agri-indaba.com	CAPE TOWN
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Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

Agri SA launches water desk

AGRI SA ANNOUNCED that it had formally launched a dedicated Water Desk that will focus on the need to ensure equitable access to water for farmers across South Africa. This initiative is in response to a host of external challenges facing agricultural water users, including severe drought, climate change and under-maintained infrastructure. The situation is all the more urgent given several policy proposals that may simultaneously increase the cost of water while reducing the availability to farmers.

The Agri SA Water Desk will, amongst other things, focus on water policy and legislative proposals such as the draft National Water and Sanitation Master Plan and the National Water Resource Strategy. The desk will give inputs to the Water Research Commission on research priorities and will act as a forum for top water experts to share their insights in a meaningful way.

London Agroinvestment summit starts from 4 June

WHEN MULTIPLE GROUPS combine their skills and resources, they can achieve much more than what they can when they work alone. With this in mind and to overcome the challenges, African Farming in association with 151 Products Ltd is bringing the African Farming's Agroinvestment Summit to London from 4-5 June 2018. This summit is designed for an array of stakeholders like government officials and representatives, importers, distributors, agribusiness owners, C-level executives from food companies, trade union members and manufacturers/suppliers of various agricultural equipment, machinery and services. The summit will also focus on creating a cohesive platform for trade and investment opportunities by attracting key investors and buyers from across the globe. The objectives of the summit include deployment of agro-machinery and technology via OEM partnerships, local assembly investment, challenges and opportunities in West Africa and funding for agro-development and value addition.

United Nations urges the world to act now to save lives in West Africa's Sahel

DROUGHT, HIGH FOOD prices and conflict are set to drive millions of people into acute hunger and malnutrition in parts of West Africa's Sahel, if the global community does not act now, three United Nations agencies warned.

The Food and Agriculture Organization (FAO), the UN Children's Agency (UNICEF) and the World Food Programme (WFP), said that poor rainfall in pastoralist areas of southern Mauritania, northern Senegal, and parts of Mali, Niger, Burkina Faso and Chad in 2017, had ruined livestock and harvest and affected livelihoods, leading to an early onset of the hunger season.

The Sahel region has also seen increased insecurity and an intensification in armed conflict that is disrupting basic services and livelihoods, affecting social cohesion and forcing tens of thousands to flee their homes.

Five million people will require food and livelihoods assistance through what is expected to be the worst lean season in four years, according to the latest food security analysis – Cadre Harmonisé – released in March. Assessments show that many families would have exhausted their food reserves in April. Normally, this would happen between June and September.

"We are hearing of people cutting down the number of daily meals and children dropping out of school," said Abdou Dieng, the regional director of WFP for West Africa and Central. "Those are telling signs



A reduction in pasture availability has led to early transhumance this year, up to four months earlier than usual

of a looming disaster that the world cannot continue to ignore."

Across the six countries, over 1.6mn children are at risk of severe acute malnutrition this year, 50 per cent more than in the Sahel's last major nutrition crisis in 2012. Food insecurity, inadequate dietary practices at home for young children and mothers, lack of access to safe water and sanitation, as well as armed conflict and population displacement, cause high levels of malnutrition among children.

UNICEF, FAO and WFP have developed a joint response to cover food needs, protect livelihoods and fight malnutrition in the short term to address immediate needs and reduce the impact of the looming crisis. The three UN agencies are calling for urgent support from all partners, including donors, to help mitigate the current and impending deterioration in the Sahel.

Image Credit: Adpbe Stock

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Near East and North Africa countries drawing a roadmap towards zero hunger

COUNTRIES OF THE Near East and North Africa (NENA) region face common challenges in regard to achieving improved food security, nutrition and inclusive agricultural development. Recent conflicts and civil instability in some countries, as well as rapid population growth, increasing urbanisation, low growth in food production, scarce and fragile natural resources, and the threat of climate change have been compounding the situation, the UN's Food and Agriculture Organization (FAO) has warned.

"Building resilience and sustaining peace are key to attain zero hunger and improve people's well-being in the NENA region. Without this, the region cannot end hunger, achieve food security and improved nutrition and promote sustainable agriculture, which are key to achieving the Sustainable Development Goals (SDGs) by 2030. In the presence of hunger, every other human need falls through," said Abdessalam Ould Ahmed, FAO Assistant Director General and Regional Representative for the NENA.

This came during FAO's 34th Session of the Regional Conference for the Near East (#NERC34).

"FAO has stayed and delivered in countries riddled by conflicts. Our teams have worked tirelessly to advance the resilience agenda, supporting not only emergency operations but also sustainable livelihoods, capacity building and sustainable management of natural resources," added Ould Ahmed during his opening speech in NERC34.

FAO's work in conflict and non-conflict countries has been under the framework of the three regional initiatives: water scarcity, small-scale family farming, and building resilience for food security and nutrition.

Since their launch, the regional initiatives have guided the work of the organisation in NENA and have provided a reference for the country programming frameworks. Support to the members countries



The regional initiatives have guided the work of the organisation in NENA and have provided a reference for the country programming frameworks

have come in many forms, namely, advocacy, policy development and capacity building, exchange of knowledge and experiences, and support to country-specific projects and programmes.

The conference's agenda discusses the agricultural transformation in the region and the challenge of youth employment and migration; agroecology and adapting to climate change in arid and semi-arid areas; the challenge of sand and dust storms in NENA; and regional cooperation to address transboundary plant, animal and fish pests and diseases through the One Health approach.

"These are matters that are high on the FAO global agenda but are also of particular relevance to the region and each one of our member countries," said the assistant director general.

Programme to improve Liberia cocoa sector officially launched

SOLIDARIDAD WEST AFRICA and the European Union have launched the Liberia Cocoa Sector Improvement Programme (LICSIP) of Cuttington University in Suakoko, Bong County. The event brought together more than 400 smallholder cocoa farmers who are currently participating in the programme, as well as other stakeholders of the cocoa sector. LICSIP is implemented in partnership with the Liberia Ministry of Agriculture and mainly funded by the European Union.

The Liberian minister of agriculture, Dr Mogana Flomo, who formally launched the

programme encouraged cocoa farmers to embrace the programme. "As we launch LICSIP today, I entreat all Liberian cocoa farmers and actors to give their utmost support to the programme as cocoa can mean a lot to livelihoods and our national economy," said Dr Flomo.

LICSIP is a four-year programme, which seeks to create a vibrant, competitive and profitable cocoa economy driven by farmer groups or associations and private sector supply chain actors, within a robust national regulatory and institutional framework.

Solidaridad West Africa implements LICSIP under the auspices of its Liberia country office. "With our vast experience in developing sustainable cocoa supply chains in West Africa, Solidaridad will promote yield intensification through farmer education and provision of services, and facilitate an enabling cocoa policy environment that helps to improve cocoa quality to make it attractive for the international market", said MacArthur Pay-Bayee,

country representative of Solidaridad in Liberia.

European Union Ambassador Hélène Cavé said the objective of LICSIP is to put Liberia on the map again for sustainable cocoa production. "We are hoping that by the end of this project we will see chocolate produced with sustainable Liberian cocoa on the shelves of supermarkets in Europe and around the World".

She emphasised that there are no reasons why Liberia has to lag behind other countries in the Region and in the world on cocoa production. LICSIP falls under the EU-Liberia Agriculture Programme, which is part of the 2014-2020 National Indicative Program for the 11th European Development Fund. The project targets about 5,000 smallholder cocoa farmers, with at least 30 per cent women. LICSIP will support the planting of about 3,800 acres of improved cocoa. Bong, Nimba and Lofa are the primary counties involved. The core implementation strategy of LICSIP is to promote farmers' access to a bouquet of production support services that lead to farm intensification, rehabilitation of moribund farms, on-farm diversification through the set up and operation of Centres for Cocoa Development.



The project targets about 5,000 smallholder cocoa farmers



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Sales of tractors with more power and performance are increasing in many African countries as farmers seek to boost efficiency.

Image Credit: Fendt

Fendt 1000 series tractors with outputs of 400hp plus are now available in Africa.

Increasing tractor power

THE OBVIOUS BENEFIT from an increase in tractor power is that it can improve work rates and help to reduce labour costs, but the results can also include better timelines to ensure that more of the field work is completed in the best soil and weather conditions.

Sales of new tractors with engine outputs above 100hp have increased by about 20 per cent in Africa during the last two years, according to Case IH.

Their high horsepower models featuring in the upward trend include Magnum series tractors equipped with the advanced constantly variable or CVT transmission and with power outputs from 250 to 380hp. There is also an increase in sales of the 9 models in the Case IH Steiger and Quadtrac tractor ranges with articulated steering and with up to 608hp available. Much of the extra demand in the high horsepower sector comes from large farms under corporate ownership, says Case IH, and these include some owned by overseas companies investing in African agricultural development. As well as the horsepower rise, there is also increasing interest in tractors with

advanced technology and precision farming, says Case IH. This includes more customers who are choosing the Case IH Advanced Farming System or AFS equipment that includes GPS linked features such as auto-steer, field levelling and remote monitoring, technology that can boost efficiency and reduce operating costs.

While the upward power trend has developed in the commercial farming sector and is expected to continue, there is also a government policy in some African

countries aimed at encouraging the sale of small tractors in a programme to improve the mechanisation of the smaller family owned farms. The result, a Massey Ferguson spokesman explained, has been an increase in the sales of tractors in the 40 to 75hp range sourced mainly from factories in China, India and Turkey, and these are offsetting the upward trend in big tractor sales.

Much of the success achieved in Massey Ferguson's recent tractor marketing in



Sales of the big Case IH Quadtrac models are included in the increasing demand for more tractor power

Image Credit: Case IH

Africa has come from the Global Series models, a range of specially developed 'workhorse' tractors which were recently introduced with a mechanically simple specification. The first of the Global Series models arrived in 2015 when the MF4700 tractors were announced with engine outputs from 75 to 95hp. They were followed by the MF5700 series with 100 and 110hp engines, with the 120 and 130hp MF6700 models completing the current range in 2016, and they are all powered by 3 or 4-cylinder engines made by AGCO, the Massey Ferguson parent company. As well as the Global Series, the Massey Ferguson range covers wheeled tractors with power outputs from 75 to 400hp, all equipped with rear linkages with electronic control and offering lift capacities ranging from 3000 to 12,000kg.

Tractors built in Germany by the Fendt company, are new arrivals in the tractor market in Africa. Fendt, like Massey Ferguson, is part of the AGCO group and the NAMPO event was chosen for the African launch of the high horsepower Fendt 1000 series tractors. The four models are powered by six-cylinder MAN engines with outputs from 396 to 517hp, and they



Image Credit: John Deere

The recently introduced 5EN 'narrow' tractor from John Deere is designed for special crop production including vineyards and fruit

are all equipped with a CVT transmission and the three-point linkage has 12,920kg maximum lift capacity.

While interest in high horsepower tractors is increasing, the 2017 additions to the John Deere range in Africa was the narrow version of the 5E model utility tractor

available in 76 and 90hp versions and called the 5EN. It was another of the new arrivals at last year's NAMPO show, and it will be marketed initially in sub-saharan African countries. The 5E is at the top end of John Deere's popular 5 series utility range which includes three and four-


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cylinder engines with outputs from 35 to 90hp, a power range that can suit small and large farms and it also meets the requirements for government tenders. The narrow 5EN model is designed mainly for specialist fruit and vegetable production, and in South Africa it will attract vineyard owners in important wine producing areas.

Recent arrivals in the Deutz-Fahr tractor range include four models in the new 4E utility series with engine outputs from 65 to 97hp. They all have three-cylinder engines equipped with turbocharging and electronic fuel management, and the standard version of the synchro shuttle transmission has 12 forward gear ratios and three in reverse, with the options list including a 15-gear version. The new tractors are available with two or four-wheel drive and they are offered with a platform or a cab. Further up the power range, Deutz has also announced additional models for the 6 series which now includes four and six-cylinder engines with rated outputs from 126 to 212hp. Maximum rear linkage lift capacities are from 5,000 to 10,000kg and the long list of transmission options offers a 30-speed power shuttle, with a 54-speed version including slow-speed creeper gears available on some models.

The New Holland tractor range, built by a company in the Italian based Fiat group, offers tractors covering power outputs from 55 to 557hp. Recent additions to the range include the entry-level T4-S series with three models providing 55, 65 and 75hp



The new T4-S tractor range from New Holland provides power outputs from 55 to 75hp

Image Credit: New Holland

outputs from 2.9-litre turbocharged engines with three cylinders. They are all available with transmission options that start with a basic synchro shuttle drive system with 8 speeds forwards and in reverse, a 12-speed version is also available, and adding the slow speed creeper option increases the number of speeds to 20 each way. The rear linkage has mechanical draft control and the maximum lift capacity is 3000kg. New Holland has also introduced additional models for their T5 series which now offers

outputs from 75 to 117hp using 3.4-litre engines with electronic fuel management.

Historically much of the world's tractor and farm machinery development and manufacturing has been concentrated mainly in Europe and North America, but more recently other countries have established their own production facilities and have expanded rapidly. An example is India which is now among the world's biggest tractor manufacturing countries, helped by a huge domestic market for small tractors plus increasing export success.



Massey Ferguson's Global Series tractors are designed with simple, no-frills specifications

Image Credit: Massey Ferguson

The Indian-based Tractor and Farm Equipment (TAFE) company started small scale tractor production in 1960 and now ranks as the third biggest manufacturer worldwide with output currently totalling more than 150,000 tractors per year, and they also manufacture a wide range of farm machinery under the AgriStar name. Tractors are sold through about 1000 dealers in more than 100 countries, with a number of African countries featuring prominently on their export list.

TAFE has close links with Massey Ferguson, and some of the tractors they build carry the Massey Ferguson name. There are 11 tractor models sold under the brand covering the 36 to 100hp range and equipped with three or four-cylinder engines. They include the 51hp 5450DI model with a 2.7-litre engine, a gearbox with 8 forward speeds and 1450kg lift capacity on the linkage. The top TAFE model is the 1002 producing 100hp from a 4-litre turbo engine with intercooling, and four-wheel drive.

Production from Turkey's rapidly expanding tractor industry includes the ArmaTrac range which features engines supplied by Deutz and by Perkins with power outputs from 50 to 110hp. Their 04

The new 4E utility tractors from Deutz provide outputs from 65 to 97hp



Image Credit: Deutz

series model range includes the entry level 504E tractor powered by a three-cylinder Perkins engine developing 50hp and the specification includes a synchro shuttle gearbox with 12 speeds forwards and in reverse plus a rear linkage with manual

draft control and 22,00kg capacity. All the other 04 series ArmaTrac models have four-cylinder engines, a 16-speed transmission supplied by ZF, and on tractors from 95hp upwards the linkage has electronic draft control and lifts 5,000kg. **E**



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VIV Europe 2018 is scheduled to take place from 20-22 June at the Jaarbeurs-Utrecht exhibitions complex, only about 30 minutes by direct train or road from Amsterdam and its international airport.

VIV Europe to feature smart poultry production theme

VIV EUROPE WILL celebrate its 40th anniversary as a business platform series that has become renowned worldwide for combining excellent professional information with a superb visitor-friendly location.

The expo, held at the Jaarbeurs-Utrecht showground in The Netherlands, is known as the global feed-to-food Olympics of the animal protein sector.

A major part of VIV Europe 2018's focus will be a special exhibition hall given the label of 'Sharing Data = Better Poultry'. Its central concept relates to the wider Big Data approach within the global agriculture, explained VIV worldwide marketing manager Elena Geremia.

"We want to open a discussion about the benefits achievable by sharing data along the poultry supply chain rather than simply collecting them for a more narrow analysis," she said.

The expo, held at the Jaarbeurs-Utrecht showground in The Netherlands, is known as the global feed-to-food Olympics of the animal protein sector.

"The special section at the show will put the spotlight on innovations from more than 30 exhibitors relating to Big Data poultry applications.

"Next to those exhibits will be a display of one of the first Dutch examples of putting the idea into practice by the successful use of data-sharing in a poultry chain. Called Kip van Oranje, which could be translated as Orange Chicken, the organisation connects innovative poultry producers with distributors and suppliers along the chain to decide collectively on the process from farm to consumer. Given VIV Europe's reach across all segments of animal protein supply, from meat, eggs and milk to aquaculture, the obvious question is why we have chosen poultry as major focus. The show's home country, The Netherlands, has always been a big source of innovations in poultry, and therefore we saw this as the logical place to start," she added.



VIV Europe 2014 received 20,212 visitors from 136 countries and featured almost 600 companies

Four food events under one roof

In addition to VIV Europe 2018, three co-current events including GFIA Europe, European Halal Expo and World Milk Expo will be held. GFIA stands for Global Forum of Innovations in Agriculture, with its wide-ranging focus on developments across agri-foods that includes crops and horticulture as well as meat, dairy and fish. The 2018 GFIA Europe is dedicated to a review of essential sustainable technologies in food production.

The new European Halal Expo will cover halal in all sectors, with special attention to its application in the production of food, cosmetics and pharmaceuticals. World Milk Expo 2018 is another newcomer, an international event for the whole global dairy chain.

Convenient venue adds to visitor appeal

The first trade fair under the VIV Europe name appeared in 1978 at the Jaarbeurs-Utrecht exhibitions complex- which is again the show's home in June 2018. The whole site has been thoroughly modernised to further enhance the benefits of a comfortable, compact layout and is located only around 30 minutes from Amsterdam by direct train or road.

At its most recent previous edition, in

May 2014, VIV Europe received 20,212 visitors from 136 countries and featured almost 600 companies.

"There are so many good reasons for visiting The Netherlands in June, starting with VIV Europe!" says Ruwan Berculo, Director of VIV worldwide. "The venue is very convenient and can be reached easily from all parts of the world. Travelling from Amsterdam Schiphol airport to Jaarbeurs-Utrecht is only a short journey. For visitors arriving by train, the showground is within walking distance of Utrecht Central rail station. Even better for 2018, Utrecht has now launched a new Utrecht Region Pass that will make travel to and from the city especially easy for our foreign visitors.

"Please also inform all football fans that we have not forgotten their need to stay informed about the FIFA 2018 World Cup! We have arranged a special viewing theatre inside the show with Big Screens where our guests can watch all three of the soccer matches held daily at the tournament in Russia."

VIV worldwide is the business network linking professionals from Feed to Food. The combination of VIV trade shows, VIV online 24/7 and VIV trade summits shapes a unique platform that offers boundless opportunities to the animal protein supply chain players. **E**



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This year's event attracted more than 22,000 visitors and featured more than 270 local and international agri equipment and services suppliers. Nawa Mutumweno reports.

Agritech Expo Zambia: Going from strength to strength

AGRITECH, ZAMBIA'S PREMIER outdoor agriculture expo, has blossomed into a must-attend event for all who have a passion for farming and related activities in the country and beyond.

Indeed, it has over the past five editions brought to the fore technologies, innovations and developments that are set to shape agriculture in the country and the region.

Through its intervention, farmers are keeping abreast with ultra-modern agricultural trends and equipment, adopting smart agriculture practices and skills, and increasing their yields.

Thus, it was no surprise that thousands of visitors – farmers, agricultural professionals, exhibitors, industry leaders, government officials, VIPs, etc– converged at GART Research Centre in Chisamba, central Zambia, to enjoy the showpiece that has become the talk of the region and yonder.

	2014	2017
Visitors	7,423	18,045
Exhibitors	104	242
International Pavilions	0	7
Countries represented	19	39

Source: www.agritech-expo.com

Expo has grown in stature over the years:

This year's event attracted more than 22,000 visitors and featured more than 270 local and international agri equipment and services suppliers. International pavilions included Germany, Zimbabwe, Czech Republic, United Kingdom, Finland, and the European Union (EU).

In setting the tone for the expo, Zambia National Farmers Union (ZNFU) president Jervis Zimba had this to say: "We have to grow agriculture. This year's Agritech Expo would avail the latest technologies and agro innovations and machinery that would help the farmer pick up the pieces and start on a fresh agro-trajectory." Indeed it did!

He called on all stakeholders to move with the trends, re-galvanise their energies and start approaching agriculture differently, adding that lessons picked from the expo should be applied on farms to lift agriculture to higher levels, fight poverty, hunger and diseases.



The expo was officially opened by Zambian President Edgar Lungu

"The agricultural sector continues to be the backbone of Zambia's economy as it contributes to the growth of the economy and also to exports. The sector remains the main source of livelihood and employment of the majority of people in rural areas and needs the support of policy makers, especially government," he said.

New features at the expo included the Agritech Event App (which allowed one to keep up to date with the show's latest development; create one's daily agenda; and set up meetings with other registered attendees during and after the show); Livestock Workshops (through which farmers learnt how to care for various livestock and familiarised themselves with animal nutrition, health, breeding and waste management); Musika Green Zone

Agricultural sector continues to be the backbone of Zambia's economy as it contributes to the growth of the economy and also to exports

(bringing together key players in the environment market and suppliers of low-cost post-harvest solutions for small and emergent farmers. Developing a 'green farm' was the major aim of this innovation); Mowing and Baling Demos (focused on quality mechanisation for mowing and baling purposes); and Nethouse Showcase (state-of-the-art nethouse technology and designs).

There was a strong focus on livestock, live equipment demonstrations, aquaculture showcases and free AgriTEACH interactive training workshops, covering various topics.

"These workshops reflect where agriculture in Zambia is going and showcases business opportunities for farmers of all scales, whether in livestock, crops, technology or irrigation. It is all about practical knowledge sharing and putting into practice. Visitors can once again see the latest innovations and services in the market to take their farming operations to the next level," said expo sales director Liam Beckett.

One of the major highlights of the expo was the signing of the Sustainable Commercialisation of Zambia's Smallholder Farmers Programme between the European Union and the Zambian government.

The grant valued at US\$102mn will support business-oriented smallholder farmers, enabling them to graduate from low productive subsistence-based agriculture towards more diversified and market-oriented farming while increasing their income.

The programme will promote the development of inclusive value chains and support entrepreneurial smallholder farmers to link up to private sector enterprises and service providers. It will enable smallholder farmers to have better access to inputs, finance, markets, and extension and to become valuable actors within the value chain.

The Finland Stand accorded interested parties an opportunity to meet Finnish companies and explore avenues for cooperation and funding possibilities. An avenue was also provided for business

matchmaking under the auspices of the Finnpartnership Programme to look for business partners for projects in Zambia.

The Czech Republic is exploring the expansion of its engagement in Zambian agriculture, focusing on technology, machinery, and feeding. One of the companies represented was Zetor Tractors, whose Zambian distributor is Agriserve Agro Limited. It presented special offers of highly equipped tractors which proved popular with farmers. "We are committed to the development of Zambia's agricultural sector up to 2020," said Tereza Cerna from the country's Ministry of Agriculture (Trade and International Cooperation Department).

At the ZimTrade Pavilion, 10 Zimbabwean firms showcased fertiliser and agro-chemicals, as well as agricultural machinery and implements. The other offering was three demonstration plots with maize, soybean and groundnuts at various stages.

Interesting opportunity in wildlife

Super Game Dealers, a first time exhibitor, is currently the largest mass capture organisation in Namibia, scheduled to move an estimated 7,000 head of game in 2018 inside that country, as well as to Angola, South

Africa, Uganda, DRC and hopefully Zambia.

"We are looking to expand our markets more into the international arena, and want to give countries that have lost wild animals due to wars, droughts and famine an opportunity to re-establish wildlife in their countries," said Jan Blaauw, partner in the company.

Zambia's agri sector

The country's agriculture sector is indeed booming and poised for sustainable growth. It is a fact that the livestock sub-sector, especially the smallholder dairy, beef and small livestock markets, have so much more to offer the economy than they currently do. The legumes sub-sector is also ripe for expansion and the irrigated crop market is still operating way below potential. "What each of these need is a combined effort of input and technology providers, traders and processors to offer a 'holistic' market opportunity to both large and small farmers to make investments in these sectors," said Rob Munro, director of Strategy at Musika.

Government support

The expo was officially opened by President

Edgar Lungu in a speech themed "Resilience part of Zambian nature: Applauding every step forward towards the modernisation of Zambian agriculture".

President Lungu said the government will continue implementing the electronic voucher system under the Farmer Input Support Programme (FISP) as it provides effective support to smallholder farmers.

"Diversification remains on top of the agenda and agriculture is a priority sector that we want to develop as the mainstay of the economy," he pointed out.

And minister of agriculture, Michael Katambo, said the government is committed to creating an enabling environment in which farmers should thrive.

"Our intention is to motivate farmers so that they are able to adopt new technologies and other modern farming methods that they should apply locally," he enthused. With the necessary synergy between the government, the private sector and all other relevant stakeholders in the value chain, Zambian agriculture is set to transform the economy. The theme: 'Working together to build a stronger Zambian agriculture sector' underscores this. ¹

Spotlight on agricultural mechanisation at EIMA International in Bologna

THE 43RD EDITION of EIMA International, the agricultural mechanics exhibition coming up at the Bologna Trade Fair from 7-11 November, is one of the world's most important events in the sector. FederUnacoma, the Italian Federation of Manufacturers of Agricultural and Groundskeeping Machinery and Associated Components, is responsible for the organisation of EIMA International planned for around 2,000 industries.

The exhibition area extends over more than 300,000sq m. The footfall is expected to exceed the 2016 edition numbers. The visitors will include farmers, business people, contractors and mechanisation technicians as well as representatives from universities and governments.

The format for the review calls for 14 merchandise categories and five specialised salons.

The major attractions of the events include:

EIMA Components: A great exhibition event bringing in more than 800 components manufacturers

EIMA Green: Focused on gardening and the maintenance of greenery for professionals in the field apart from hobbyists and enthusiasts

EIMA Energy: Covering the bio-energy supply chain, a sector attracting great interest due to ecological considerations and the reduction of greenhouse gas emissions

EIMA M.i.A: Multi-functional farming with special reference to the maintenance and protection of land.

In addition to these four, the 2018 edition will bring in a fifth, the EIMA Idrotech Salon totally dedicated to irrigation technologies and the management of water resources.



FederUnacoma is organising the event

The review will draw general public as well as official delegations from across the world. These are organised by FederUnacoma and ICE, the Italian Trade Agency.

EIMA International is not only a great promotional and commercial exposition but also a cultural event involving interactions through more than one hundred conferences and meetings on new technologies, research, agriculture economy and policies for the development of the agro-industry supply chains in the main agricultural regions around the world.

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

Evaluating fibre sources for gut health management in piglets

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

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

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

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

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

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

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

Fibre in weaner nutrition

Weaner nutrition is a challenge as the animal is immature in regard to gut function and immune system. Weaning results in alterations in gut morphology (villus atrophy), insufficient activity of digestive enzymes, disturbed intestinal absorption and increased permeability of gut mucosa. The effects often become visible in decreased feed intake, diarrhoea and reduced performance. Especially in weaner



Image Credit: Adobe stock

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

diets, insoluble fibres show positive effects on performance, gut development and structure. Supplementing weaner diets with insoluble fibre can give nutritional support for the animals in a very critical phase. This becomes obvious in results (Table 1) from a study by Hedemann et al. (2014) compared a weaner diet low in dietary fibre (DF 7.3 per cent) with high dietary fibre diets (DF 14.5 per cent) where the fibre source was either soluble (pectin) or insoluble (barley hulls) respectively.

The feed intake and weight gain in piglets receiving the diet high in soluble DF were clearly reduced compared to the low DF diet while the parameters were improved with the supply of highly insoluble DF. In addition, the insoluble dietary fibre also supported the gut integrity by increasing the villi length.

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

Fibre sources

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

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

2nd Gen. LC is derived from fresh wood, and serves as a functional and prebiotic ingredient to reduce diarrhoea in piglets and improve performance. The micronization (average particle size 50-120 μ m)

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

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

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

ensures a high number of inert particles with a large surface area, which helps to regulate peristalsis. This prevents the ascension of pathogens, and shifts microbial fermentation to the rear section of the colon. Adding to this physical mode of action, the insoluble

Weaning results in alterations in gut morphology (villus atrophy), insufficient activity of digestive enzymes, disturbed intestinal absorption and increased permeability of gut mucosa.


fibre of the 2nd Gen. LC is partially fermentable, promoting the production of butyric acid in the hindgut. Butyric acid is highly beneficial for intestinal tissue and dealing with anti-inflammatory effects.

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

The results indicate that the addition of

2nd Gen. LC may be recommended to promote the development of the gastrointestinal tract (GIT) and health, and to improve growth performance. This is supported by current results from broilers that indicate that 2nd Gen. LC acts anti-inflammatory in the gastrointestinal tract, visible by the reduction of pro-inflammatory cytokines (Zeitz et al, 2018). The anti-inflammatory effect may be attributed to an enhanced butyric acid formation in the hindgut.

Summary

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

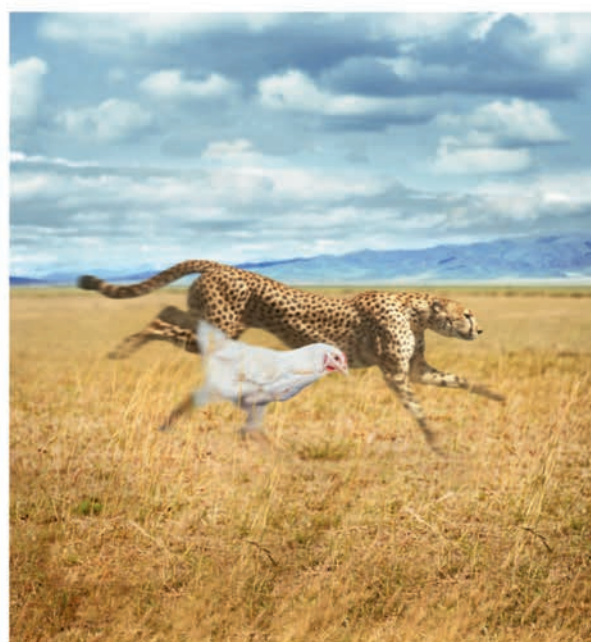
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Renewvia Energy is helping underserved communities and businesses in rural Kenya access the energy they need to improve their lives and bolster their economy.

Renewvia Energy: Building a greener, cleaner future

RENEWVIA IS BUILDING a network of solar microgrid stations that will provide clean, efficient, and affordable energy on a pay-as-you-go basis, says CEO Trey Jarrard.

Tell us about the origins of Renewvia energy and its motto

Renewvia Energy Corporation began developing solar power systems in 2008 in various financeable domestic geographies. The plants were capitalised with everything from Solar Renewable Energy Credits, federal cash grants, state cash grants, state tax credits, utility production based incentives, utility cash grant incentives, federal accelerated depreciation and power purchase agreements. Renewvia developed arrays on warehouse rooftops in the NE US, multi-family parking canopies in the West and master metered commercial real estate properties, manufacturing facilities, school's buildings and sorted agricultural entities all over the country and abroad.

Renewvia has built microgrids in the Marianas Islands and various remote regions in Kenya. The company is evaluating more than 100 solar microgrid development sites in Nigeria, Kenya, Ghana, Mozambique, Tanzania, Senegal and Uganda. Every remote plant will provide power to the individuals and businesses of the trading centres and villages through a prepaid structure.

Renewvia adds value to the client's businesses, provides above market returns for investors and improves quality of life for people in power challenged areas.

What's the role of renewable energy in shaping the future of agriculture?

Agriculture is positioned to realise the highest value from solar based on an operators ability to power critical equipment at times when solar power is available for processing and pumping. Solar can be used to store energy when a surplus exist in the form of pumping water and in batteries to be used when needed. Another critical role solar power generation can facilitate for the future of agriculture is the replacement of diesel generation to create power. Most



Renewvia has built microgrids in the Marianas Islands and various remote regions in Kenya.

agricultural entities have or are developing aggressive sustainable practices. Replacing a litre of diesel for every 3kwh of solar generated reduces carbon emissions by substantial percentages.

Renewvia adds value to the client's businesses, provides above market returns for investors and improves quality of life for people in power challenged areas.

Tell us about your work in Kenya

Renewvia has and is developing community microgrids in communities that are not serviced by the Kenya Power Utility, not eligible to be serviced by the utility for the next 20 years and have never had an affordable and reliable source of power. Renewvia has been recognised as an Independent Power Producer in the

country and will be connecting thousands of individuals to Renewvia microgrids this year and ongoing. Additionally, Renewvia owns and operates commercial arrays in Kenya.

Can you outline the benefits farmers get by installing your panels touching upon the carbon footprint and savings?

The main benefits are economic in the form of offsetting diesel for power production, reduced logistics management by lowering the need for diesel and reducing the carbon footprint by more than 100 tonnes per year for every 100kw of annual production.

In much of Africa, the rural farming communities do not have access to the grid or to a grid that is reliable. Farmers are reliant on fuel for many reasons from powering tractors and equipment, to creating power for pumps and processing. Incorporating solar vastly reduces the farmers reliance of diesel and results in less challenges in management and logistics for the general operations.

Tell us about your future expansion plans

Renewvia has operating subsidiaries in three sub Saharan countries (Kenya, Nigeria and Uganda). Currently, Renewvia is funding development and operations and in parallel in the financial markets raising debt and equity to increase development velocity, geographies, project size and overall operations. Other geographies being evaluated for commercial and rural electrification are Rwanda, Zimbabwe, Ghana, Tanzania, Senegal, Mozambique and Ethiopia.

Renewvia Energy has been recognised as an Independent Power Producer in Kenya and will be connecting thousands of individuals to Renewvia microgrids this year and ongoing.

Can you briefly introduce your products and services?

Solar microgrids, hybrid microgrids (microgrids connected to utility) and distributed commercial solar power plants.



Image Credit: Renewvia

Trey Jarrard, CEO, Renewvia Energy

Are your products affordable for smallholder farmers? How do you plan to penetrate the African market?

Renewvia is financing the development of solar for all size entities in agriculture and commercial sectors. If the CapEx cannot be accommodated, Renewvia finances the system to varying extents and sells the power to the offtaker. For rural electrification or community microgrids, Renewvia is an Independent Power Producer thus

alleviating any capital event for the community and individual subscriber. The subscribers buy power when needed and as much as needed.


What makes Renewvia stand out?

Willingness to risk corporate balance sheet to prove the resilience of the sub Saharan rural marketplace. Renewvia is taking financial risk ahead of conventional financial institutions and infrastructure companies to prove the market.

What's the next big thing in the pipeline?

The technology for generating, storing and distributing power is proven. We are putting emphasis on efficient and economical storage and rural solar power projects.

Going forward, how critical is clean energy in making the planet a better place to live in?

Clean energy is a building block for protecting the environment and acting responsibly. Fossil Fuels can't be eliminated but can be reduced. Clean energy will continue to proliferate as cost continues to decline and result in reduced emissions in the field of power generation. 









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

Opportunities for dried distillers grains in livestock diets



Image Credit: Adobe stock

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

In order to gain further acceptance by the industry, we need to better characterise this valuable co-product. Part of this characterisation includes improving how we estimate the energy of DDGS. The ethanol industry has evolved during the past decade to

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

Previous research

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

As previously mentioned, the ethanol industry has evolved to become much more efficient and sophisticated. This evolution included improvements to equipment, advancements in yeast technology, as well as modifications of production conditions such

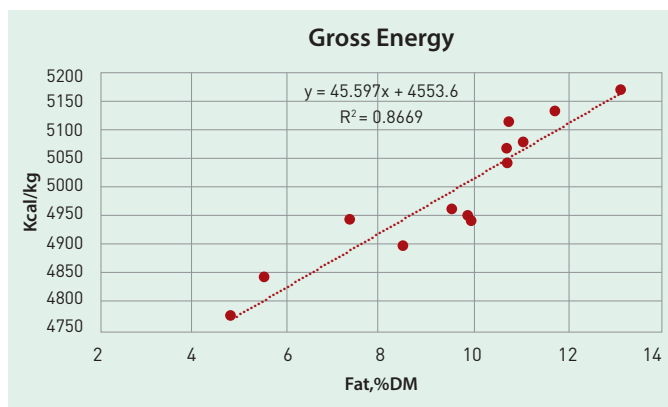


Figure 1. DDGS fat content vs. gross energy



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as fermentation times and temperatures. Each modification can potentially change the nutritional characteristics of the DDGS and as a result, we end up with variability in the DDGS supply.

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

Current research

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

As hypothesised, we found that when we analysed the DDGS based on ethanol process, we saw a much more accurate (r -squared of 0.99) predictive equation (figure 3). This equation represents an improvement on predicting energy. However, this approach limits the application of the equation to only DDGS produced using the same process. The other insight gained from this research involved how well current equations predicted the energy of the DDGS we used for this research. Both equations resulted in acceptable r -squared values of 0.71 and 0.84 (figure 4). However, both equations also underestimated the amount of energy of the DDGS samples.

Importance to the industry

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

The other advantage with a better nutrient characterisation addresses the inclusion of DDGS. In the majority of formulation strategies, the use of DDGS represents cost savings. As a result,

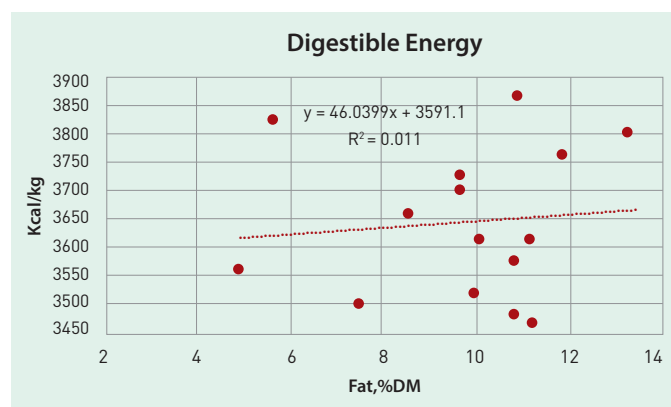


Figure 2. DDGS fat content vs. digestible energy

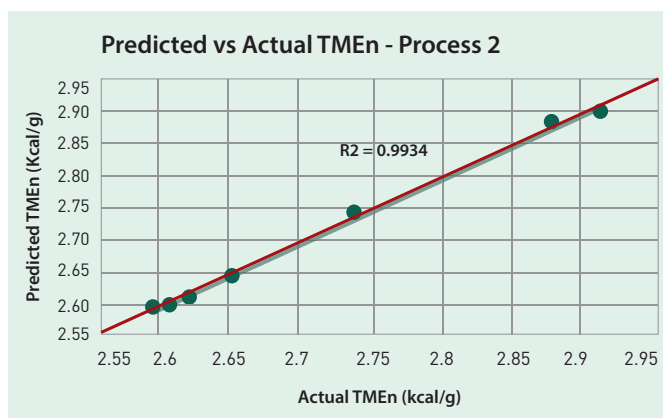


Figure 3. Actual vs. predicted TMEn of DDGS produced with the same process

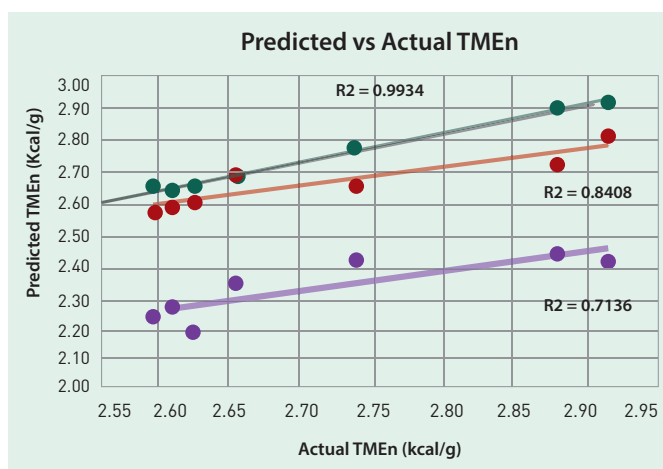


Figure 4. Actual vs. predicted TMEn of DDGS from different equations

when nutritionists can formulate with greater amounts, they typically see even greater cost savings. When we can accurately predict energy, nutritionists become more comfortable with increasing the inclusion of DDGS in the diets. Less variability means less opportunity to affect the final diet.

However, this approach does present some challenges.

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

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

Conclusion

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



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The economic pressures and the difficulty of surviving in this ever-changing market sector make power disruptions on farms even more damaging.

Zest gensets keep farms running uninterrupted in power outages

ANY TYPE OF power outage, no matter how short, can place crops and farm animals at risk – which is why a reliable source of backup power has become vital for agricultural operations to function efficiently and safely.

Power disruptions on farms are even more damaging due to the economic pressures and the difficulty of surviving in this ever-changing market sector. Today, there are many factors outside of the farmer's control that can affect profitability. Modern farming methods are increasingly assisted by a range of automated equipment that relies upon a steady supply of electricity to do its work.

The rural and often isolated setting in which many farms operate make them even more vulnerable to power cuts and damaged power lines, as electricity supply generally takes longer to restore – thereby aggravating the impact on farm activities.

To keep costs down for farmers, Zest WEG Group also offers WEG softstarters and WEG variable speed drives (VSDs), which reduce the required genset power capacity

The result is that agriculture – like many industries – can experience catastrophic consequences as a result of power outages, and this has made it imperative for every farm to have a sustainable and secure supply of energy.

The good news is that solutions are available, to empower farmers to get the most out of their farming equipment without having to risk a power outage turning into a disaster. A good, dependable backup diesel power generator set – or genset – can effectively keep everything running smoothly until the power is restored. While a quality genset does require an initial capital outlay, the benefits and cost-saving in the long run turns it into a positive investment.

Industry experts like the Zest WEG Group offer the experience and capacity to design and provide high quality agricultural generator solutions with top engine brands, for reliable backup or continuous power in various farming applications.

The right solution begins with making the appropriate generator selection, by considering the load size, voltages, running cycles, access to site and delivery constraints.

The Zest WEG Group – which locally manufactures generator sets at its Cape Town facility – offers fit-for-purpose solutions that are either standard off-the-shelf units or custom-built ones for specific applications.

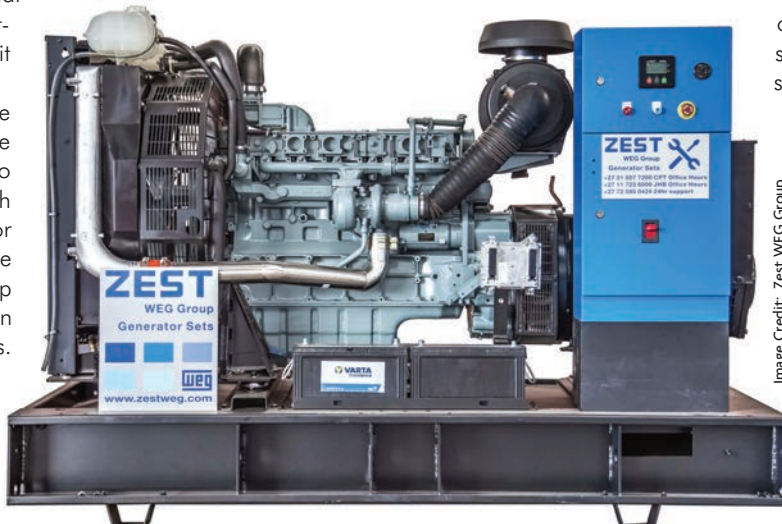
The Zest gensets can be supplied in stationary or mobile configurations from 10 kVA up to 3,350 kVA – and their capacity can be increased upwards with multiple synchronised sets. All generator sets are supported by customised service and maintenance agreements.

Integrated packages that include mechanical and electrical manufacture and assembly as well as electronic design incorporating in-house control panel manufacture are available. The company also provides supply and installation of transformers, cabling, bulk fuel systems and sound attenuation with standby generators on a turnkey basis, together with project management, installation, commissioning and maintenance.

Zest WEG Group's power generator offering comes in three ranges: the value range; the premier range; and the custom range. The value range is a cost effective 10 kVA to 2 250 kVA 50 Hz/60 Hz solution with the option of FAW, Doosan or Mitsubishi engines. The premier range is also made up of 10 kVA to 3,350 kVA 50 Hz/60 Hz units, but with engine offerings from Perkins, Volvo, Scania, Cummins, MTU and Deutz. The custom range is tailor-made for customers, built and installed for their specific applications. The company is able to assist customers with correct generator sizing by calculating their required kVA generator load based on their unique on-site load requirements.

VSD technology reduces the electric motor's start-up current, which assists with peak load demands, and also eliminates the need to oversize the generator which would have been a requirement without a VSD.

Another important benefit of using VSDs is the power saved by controlling the output speed of the electric motor, ensuring that the customer uses less energy. Using a VSD allows for the right sizing of the generator which means that the diesel engine will run at its rated loads and maintenance and operating costs are significantly minimised. In many cases, engine capacity can be reduced, with reductions in oil and fuel consumption being realised as a result. Using a smaller engine will also have a positive effect on the cost of parts. **B**



The fully customisable Zest WEG Group Generator Set Division Premier Range powered by the Deutz engine series.

Image Credit: Zest WEG Group

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Image Credit: Thomas Abanga

The love for agriculture was instilled in Thomas Abanga, CEO of A&G Agro-Mechanical Industries, Ghana at an early age. Thomas talks about his early years and his big plans for Africa.

Leading by example

THOMAS ABANGA DONS many hats. The CEO of A&G Agro-Mechanical Industries, based in Tamale, Ghana, is his country's biggest rice farmer. The love for agriculture was instilled in him at an early age.

"Agriculture is in my blood," he said. From the age of 11, Thomas made himself useful as a farmhand at his father's land until he left for the US in the 80s to pursue higher studies. Armed with a masters degree in finance and investment, he worked for 15 years at the wall street. But in his heart of hearts, he knew farming was his real calling.

"That's when I decided to come back to Ghana and explore the opportunity in the agriculture sector here," Thomas said. And the rest is history.

What led you to entrepreneurship?

When you look at Africa, you see the gravity of poverty engulfing the continent. The state of Africa as a whole and a personal conviction that I can make a difference drove me to entrepreneurship.

I believe the development of a country is contingent on individuals who inspire economic growth by setting up successful companies. I knew I had the expertise to change the paradigm in the agriculture sector in Ghana. I'm not just here to make

money, but to create jobs for my people and also to help my country scale new heights in terms of GDP and self-reliance.

As a businessman and a humanitarian, what is your motto?

Africa is blessed with swathes of land and natural resources. What we lack is the infrastructure and innovation to take advantage of the lay of the land. I believe agriculture has to be digital and not analogue. I'm trying to bring innovation to the agriculture sector in Africa with a mission to increase productivity and provide employment to a lot of people.

I believe the development of a country is contingent on individuals who inspire economic growth by setting up successful companies.

What are the big projects in the pipeline? How much do you invest in R&D?

Countries like India started to grow when they decided to get into manufacturing and assembling. Innovation is critical in the agriculture sector. We are building an

assembly plant for tractors – the first of its kind in Ghana. Abanga Farms is one of the biggest rice farmers in Ghana. We have rice mills and feed processing units to engage the entire value chain. We are also in the process of setting up fertiliser blender plants in the country.

Tell us about your 'teaching a man to fish' philosophy

Take the example of India. The British used to give Indians the fish. Then they decided, we don't want the British to give us fish, we want to net the fish ourselves. Now, Range Rovers are assembled in India. It's the same thing here. We can't depend on foreign aid or handouts from the colonial masters. We will become invisible slaves if we continue to depend them for fish. We should learn to fish, catch the fish and become good fishermen.

The primitive agriculture practices in Africa are not resulting in increased yield. A&G has introduced GAP (good agronomic practices) training to help farmers take stock of their current agronomic practices and make improvements based on an informed analysis. GAP empowers the farming community to develop marketing strategies and also furnish them with machinery, services and resources to increase productivity. The programme aims to hold farmers' hands through the entire



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Is the Ghanaian government supportive of your initiatives?

Ghana government is very supportive. Initiatives like Planting for Food and Jobs have made huge strides with regards to rolling out subsidies, spreading awareness and offering significant inputs to farmers.

The system in Africa is very slow, but a strong desire to be part of my country's growth story inspire me to hopscotch such hurdles. A&G is in negotiations with the government for collaborations in the agriculture sector. We are actively participating in the nation building. A&G Agro-Mechanical secured a contract and supplied conservational Agric products, tractors and implements under the Northern Rural Growth Programme (NRGP). The company has also supplied Tractors and Implement on behalf of SAKFO Farms Irrigation Project in BUIPE.

We have identified the need for tractor assembly plants in the continent. Tamale, our headquarters, sits right in the middle of the West Africa. It takes only four hours to reach Northern Togo from Tamale. If we complete the assembly plant, we will have farmers coming from Burkina Faso, Togo, Benin, Côte d'Ivoire to buy from us. At present, if you bring a container from India or China, it takes more than 45 days. Our company is strategically positioned to serve Africa. The government has realised that we can be a hub for supplying tractors. In Ghana, 50 per

cent of farmers cannot afford machinery. We have devised flexible price planning to help farmers who want to buy machinery.

What is the investment climate in Ghana?

Ghana is one of the fastest growing economies in the world. We have a democratically elected government which puts a lot of effort to promote the local products at the highest level. The country is stable and we don't need outsiders to teach us how to do agriculture. We are capable of building the country on our own. Ghana is primed for exponential growth and A&G's success story is a testimony to the great investment climate in Ghana.

What is your thoughts on Ghana's agricultural potential?

We need to make improvements in the area of nutrition, land acquisition process and innovation to name a few. We still have a long way to go. But with the path we have taken and the initiatives the government has implemented, we would get there. In due time, we would be able to export agriculture produce to other countries

It's estimated that around 400,000MT of milled rice are imported into Ghana annually. My goal is to produce 10 per cent of the imported rice within the country in the next five years.

What did the US experience teach you?


The US stint taught me the essence of time and how to be a real human being. The experience had prepared me for life in



Image Credit: Thomas Abanga

We need to make improvements in the area of nutrition, land acquisition process and innovation, says Thomas Abanga, CEO, A&G Agro-Mechanical Industries.

general. It also taught me, if you have a dream, you can realise it. Martin Luther King, Rockefeller, Steve Jobs, Bill Gates are individuals who single-handedly brought transformation to their respective walks of life. It's important to have a dream and a goal. America taught me the sense of agency. And I have decided to bring my experience back here and be an agent of change. I believe in the power of the private sector to transform a country.

Thomas Abanga is a passionate entrepreneur with a pure farmer's soul who likes to be remembered for changing the dynamics of his country and its people. He watches the world with the curiosity of a boy and when he runs into a life-changing idea, he is not hesitant to adapt it into his own dream of transforming Africa. Abanga Farms has earmarked a 4,000-acre land for cultivation taking advantage of the White Volta at Daboya for irrigation as well as expand its livestock production to use their droppings as organic manure for vegetable production for export. And this is just the beginning. 

Ghana is one of the fastest growing economies in the world. We have a democratically elected government which puts a lot of effort to promote the local products at the highest level.



Image Credit: Adobe Stock

The primitive agriculture practices in Africa are not resulting in increased yield.

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The mildew disease has been around since medieval times. There are two distinct types of mildew disease - powdery mildew and downy mildew. Dr Terry Mabbett writes.

Downy mildew management in cut-rose cultivation

FIFTY YEARS AGO there was a seismic shift in cut-rose production from outdoor and heated greenhouse production in Europe to cultivation under unheated glass and plastic (polythene) protection in the African highlands. The mildew disease has been around since medieval times. There are two distinct types of mildew disease - powdery mildew and downy mildew. Powdery mildew disease is caused by a true fungus called *Podosphaera pannosa* while a fungus-like microbe called *Peronospora sparsa* is the causal agent of downy mildew disease.

Type (downy or powdery) and the disease severity is governed by a range of physical factors, (climate and altitude) and agronomic considerations (greenhouse design and management), and how these impact on temperature, humidity and leaf surface wetness. The rapid expansion in African cut-rose production under unheated glass or plastic covered structures, first in Kenya and more recently in Ethiopia and other countries, has often been accompanied by an increase in the prevalence and severity of mildew diseases.

All above-ground parts of the rose bush are affected. Typical symptoms include irregular shaped leaf spots purple-red to dark brown in colour.

Either one can get out of control in a short space of time because unheated under-cover cultivation often creates ideal conditions of temperature, humidity and surface wetness for pathogen infection and the spread and development of disease. The result is an epiphytotic (epidemic) with serious economic damage to foliage and marketable blooms. The following account is restricted to downy mildew caused by *Peronospora sparsa*.

Downy mildew of roses (*Peronospora sparsa*)

Rose downy mildew requires a high relative humidity (RH) of around 80 per cent for uninhibited spore germination. Optimum temperature for spore germination is 15 to 20°C, although colonisation of the rose



Growing roses under unheated glass or plastic protection in the tropical highlands can create ideal conditions for infection and spread of downy mildew disease

leaf tissue by the microbial mycelium is most rapid at a higher temperature range of 20 to 25°C.

Leaf surface wetness is crucial for spore germination. At optimal temperature only 2 hours of leaf wetness is required for spore germination. More detailed predictive models show the critical leaf wetness period for disease development is an average 8.4 hours per day over a 10 day period. Within the optimal temperature range for leaf colonisation (20 to 25°C) disease cycle is short with symptoms appearing just 4 days after spore germination and spore-producing lesions evident several days later.

All above-ground parts of the rose bush or shrub are affected. Typical symptoms include irregular shaped leaf spots purple-red to dark brown in colour. Major leaf veins may restrict the spread of the lesions which therefore become angular as they enlarge. Shoots are distorted and flowers deformed due to the infection of flower bud scales.

During periods of sustained humidity grey-coloured spore masses develop on the underside (abaxial surface) of leaves which eventually die and abscise (fall off) resulting in severe defoliation if the disease is left unchecked. Small spots or elongated

purple coloured areas may form on rose bush canes which eventually die-back due to secondary attack by the *Botrytis* fungus.

Cultural considerations

- Remove and destroy rose plant debris from previous crops (including pruned stems), because the pathogen can persist in both leaves and canes (wood).
- Water in the morning to give ample time for foliage to dry and to avoid water on the leaf surface over-night.
- Use fans with venting to reduce humidity and leaf wetness in the growing house.
- Maintain a properly balanced programme of fertiliser application to maximise plant and crop resilience to disease.
- Ensure roses are planted at a sufficiently wide spacing to avoid leaves of adjacent plants touching and formation of closed canopies causing increased humidity and risk of disease in the rose crop canopy.
- Use rose varieties possessing a measure of resistance to downy mildew disease.

Chemical control

Potential loss from downy mildew is huge causing growers to traditionally spray fungicide on a routine weekly or fortnightly

Image Credit: Lina Fernanda Loaiza

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basis. However, the rapid cycle of rose downy mildew means growers may still fail to control the disease especially with 14-day spray intervals.

Fungicide control of downy mildew is becoming all the more difficult due to increased risk of resistance (insensitivity) developing within the pathogen population. Those most at risk are systemic fungicides which enter the plant and move around in the tissues to suppress or even eradicate the pathogen and disease. Reason why these fungicides, including the acylalanines (e.g. metalaxyl and metalaxyl-M), and are vulnerable to development of pathogen resistance is related to type and mode of action. They are site-specific fungicides, so called because they act on a specific enzyme in the metabolism of the microbial pathogen.

Peronospora sparsa exhibits intrinsically rapid and prolific reproduction (spore production) coupled with high genetic versatility. This means the probability of a variant with resistance to the action of this type of fungicide, appearing in the pathogen population, is correspondingly high. If such a scenario happens, the fungicide will fail to kill the resistant variant(s) which survives, multiplies and produces a fungicide-resistant pathogen population.

However, this risk is essentially non-existent when using contact protectant fungicides which are very broad spectrum in action. For instance, copper based fungicides like cuprous oxide act against all enzymes in the microbial metabolism, destroying their proteinaceous shape and structure essential for enzyme action. Chances of a microbial variant which is resistant to such fundamental and broad spectrum fungicide action appearing in the population are remote. Copper based fungicides have been widely used in agriculture and horticulture for more than 100 years with no incidence of fungicide resistance to copper in fungal or fungus-like pathogen populations including *Peronospora sparsa*.

Fungicide application strategy

Downy mildew disease is too dynamic for adequate control using 14-day spray intervals while the more intensive use of fungicide using 7-day spray intervals exerts even more selective pressure on the pathogen population, thereby raising the risk of resistance development. Fungicide resistance risk can be reduced by using contact protectant fungicides, such as copper-based fungicides like cuprous oxide or dithiocarbamate fungicides (such as e.g. mancozeb), wherever and whenever possible.

That said, growers should be aware that



Rose foliage showing dried-out necrosis from downy mildew (*Peronospora sparsa*) with black spot disease caused by *Diplocarpon rosae* also in evidence

Image Credit: Terry Mabbet

contact protectant fungicides can only do what the name suggests – kill spores by contact before or as they germinate on the leaf surface, thereby protecting the crop from infection. Contact protectant fungicides do not enter the plant tissue to suppress or eradicate established infection and disease.

Site-specific systemic fungicides can be mixed with an appropriate contact protectant fungicide to 'cover' the systemic fungicide against fungicide resistance development. And growers should avoid repeated spray application of the same single systemic fungicide, or different systemic fungicides but with the same chemistry and therefore mode of action.

Added benefit of using broad spectrum action fungicides like cuprous oxide is additional control of other diseases such as black spot disease (*Diplocarpon rosae*) which may appear on rose leaves at the same time.

Environmental monitoring

This involves identification and documentation of environmental conditions (eg ambient temperature, relative humidity and duration of leaf wetness) ideal and optimum for infection, and only applying fungicide when these conditions occur. This, in essence, is the basis of a 'Disease Forecasting System' developed for a number of plant pathogens and crops including the potato blight pathogen (*Phytophthora infestans*) which is closely related to *Peronospora sparsa*. This is the most difficult strategy to organise and operate. It requires a lot of information-gathering beforehand and extra-careful operation, otherwise the window for fungicide spraying is missed and the opportunity for disease control lost.

Environmental monitoring with spore trapping

Pathogen presence and environmental conditions are monitored in tandem using spore traps linked to sensors for temperature, humidity, leaf wetness and other factors as necessary. Spore traps are located in greenhouses to record airborne spore numbers on an hourly basis, thus enabling operators to determine exactly when spore liberation occurs. Spore concentration is established and statistically correlated with infection of rose plants to build an accurate disease forecasting model, thus allowing growers to develop decision-led spray application programmes. This is a much more fool-proof strategy because the decision to spray is based on an actual presence of the pathogen as well as optimal environmental conditions for spore germination and leaf infection.

Caution

There are two other important factors that rose growers should bear in mind when using fungicides. Rose blooms are very delicate and even the slightest phytotoxic chemical damage can ruin marketability. Well tried and tested, recommended fungicides should pose no problems especially since blooms are picked when they are still tight in the bud. Nevertheless, growers should always test a fungicide on a small area of crop, to ensure that it is 'safe' to use, before using the same fungicide over an entire crop of roses.

The vast majority of roses grown in Africa are exported to markets in Europe and the Middle East. Each importing country (or bloc in the case of the European Union) has its own rules and regulations governing which fungicides can be used on roses which they import. This must be followed and adhered to by growers in producing countries. **E**

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Superliv: The magical formula to boost profit and reduce feed cost

LIVER PLAYS A major role in the digestive, metabolic and productive activities in chicken. Oxidative stress leads to biological damage and impedes poultry growth. In heat-stressed broilers, liver cells showed “fatty degeneration” with dilation of sinusoid leading to reduced metabolism and stunted growth and, at times death. Growing demand for poultry meat has accelerated the use of synthetic compounds in the feed. Recently, such practices have come under the scanner, resulting in the restricted use of such compounds in many parts of the world. Efforts are afoot to develop alternative supplements to maintain integrity of liver, optimum metabolism, performance and overall wellbeing.

This is where Superliv comes in. Superliv is a herbal solution which gives all-round protection to liver. The formula is safe for long-term use and bears no ill effects of synthetic compounds. Superliv is made from herbs such as *Andrographis paniculata*, *Azadirachta indica*, *Boerhaavia diffusa* and *Phyllanthus niruri*.

The hepatoprotective, anti-hepatotoxic, hepatoregenerative, anti-oxidant and immunomodulatory properties of the herbal ingredients tone up the liver and mitigate

Experimental Design

	Treatment group Details	No. of birds/pen/replication	Replication	Total Birds
A	Control basal diet as per BIS(2007) (Normal level of DLM 0.2%)	20	4	80
B	Basal Diet with reduced CP 10 %	20	4	80
C	Basal Diet with reduced CP 10% + Superliv conc. Premix 0.05%	20	4	80

Cumulative gain in weight, feed consumption (g) per bird and FCR of broilers at different age groups supplemented with Superliv conc.

Age (week)	Parameters	Cumulative Gain in weight (Gram)			Cumulative feed consumption (Gram)			Cumulative FCR		
		1st	4th	6th	1st	4th	6th	1st	4th	6th
A		124.07	1069.8	2007.6	114.8	1728.3	3598.3	1.13	1.61	1.79
B		122.2	1070.7	1954.5	114.9	1739.7	3647.8	1.20	1.62	1.86
C		126.0	1082.1	1992.4	134.7	1792.3	3661.0	1.31	1.65	1.83

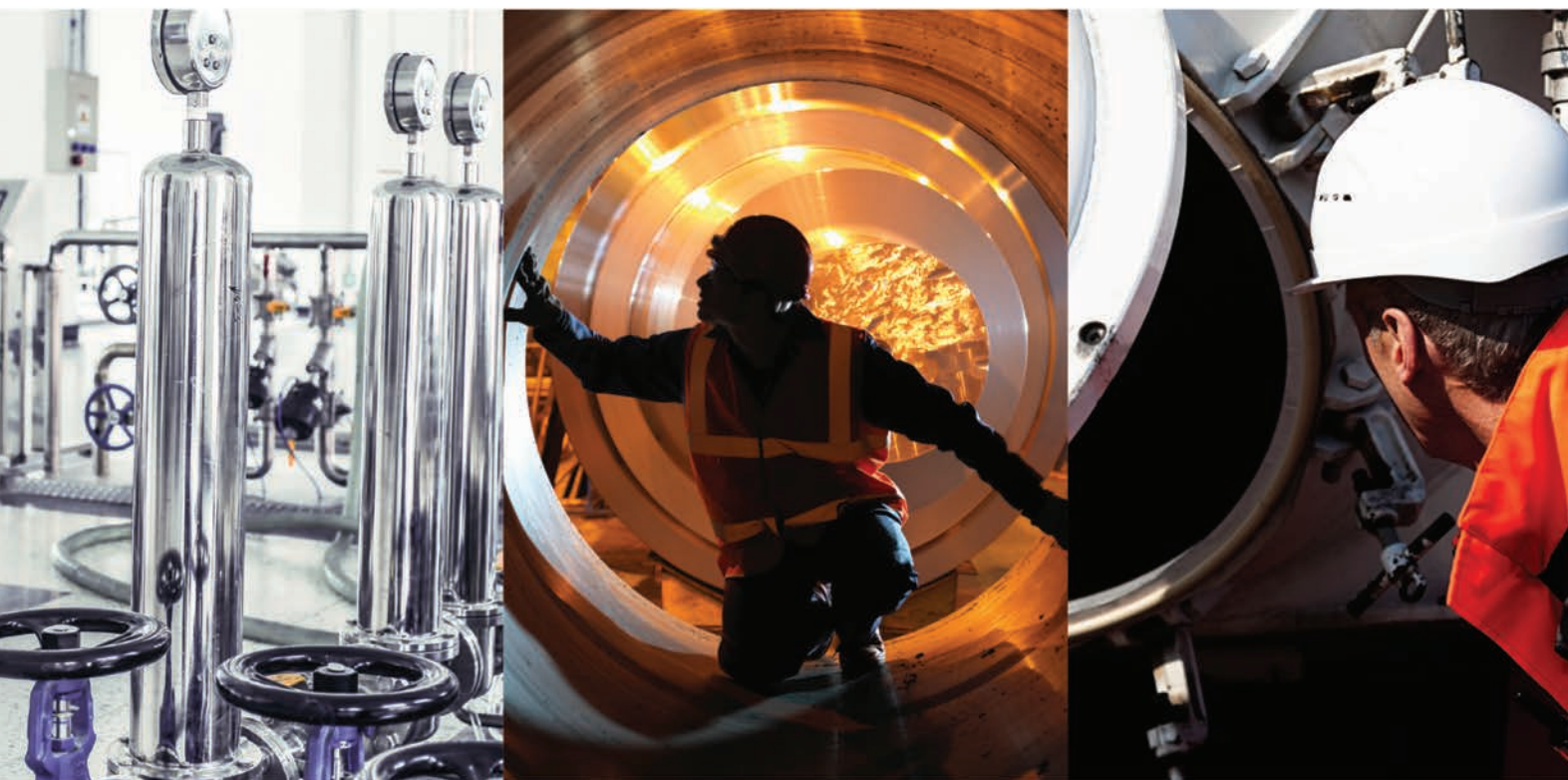
the heat stress in poultry. Superliv also facilitates better feeding, synthesis of amino acids and minimises aflatoxin effects.

A study carried out at College of Veterinary and Animal Sciences, Parbhani, confirmed the efficacy of Superliv not only as a growth promoter but as a protein conserving (by reducing crude protein (CP) by 10 per cent) in commercial broiler chicken. No adverse effect was recorded in

terms of feed consumption and palatability. Superliv also improved the conversion ratio of commercial broiler birds.

The economics side of broiler production was worked out considering the purchase rates of chicks, ingredients, price of Superliv and the selling price of birds on live weight basis. The experiment proved the net profit per bird was significantly higher among Superliv supplemented groups. ^(P)

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

The tricks of the trade



Image Credit: Adobe Stock

What does Gafta do?

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

Why Gafta?

The origins of Gafta go back to 1878 with the creation of the London Cattle Trade Association and the London Corn Trade Association. Both organisations were established with the primary purpose of establishing common trade rules. Gafta was created in 1978 when the two organisations merged. With such a longstanding history, the Gafta contracts have been tried and tested in arbitration and in the courts. Gafta contracts are based on English law which comes with its own set of advantages when dealing with international trade and arbitration. The contracts are the result of ongoing and wide industry consultation and are updated to reflect the modern trading environment and the requirements of the industry as a whole. Gafta represents

members' views to authorities by giving informed opinion on legislative and policy developments through the publication of regular material on the current grain market and policy updates on trade issues. Gafta has excellent connections with international organisations and authorities, allowing for access to information to negotiate routes for effective representation. We provide advocacy and informed opinion on global agricultural legislation and policy, market access and trade facilitation, food and feed safety, financial legislation and international engagement.

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

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

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

It's essential to know what you are getting into. If a contract incorporates a Gafta standard form, go to our website and download a copy, read it and understand it before signing. Also, note that under English law a signature is not always required, however, it is always good to understand the law in the country in which you and your counterparty are based and the locations in which your goods will be traded.

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

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

Tell us about Gafta Professional Development and Distance Learning Programme?

The Gafta Professional Development (GPD) training and the Distance Learning Programme (DLP) are two of our training options available to everyone. The GDP is a series of four 2/3 day courses covering trade foundations, contracts, shipping and dispute resolution. DLP is run on our online platform.

It is a series of six modules that lasts for three months each. The completion of all modules in GDP or DLP qualifies you to sit in the Trade Diploma exam, which is one of the requirements to become a qualified arbitrator with us. We are in the process of creating smaller 'bite size' learning modules on our online platform which will be rolled out over the next 12 months. Members receive a discount on their training with us, but the courses are open to everyone.

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

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



Image Credit: Jade Dyson

Jade Dyson, director, Gafta Singapore

lost an arbitration and not paid the award, regular email updates on trade policy and notices and the opportunity to sit on our committee and contribute to the work and direction taken by Gafta.

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

I think the exciting thing about trading is the changing landscape. Depending on

the market and where in the supply chain you stand, market volatility could be a good or bad thing. Changing diets is a big topic at the moment, especially in South East Asia and Africa. As populations historically reliant on a high carbohydrate diet shift to a higher protein and higher dairy diet, the demand for animal feed is increasing. The rations being fed to animals can also shift as a result of global supply and price changes as traditional purchasing decisions are questioned and adapted. Whilst there is consolidation among some larger players in the industry, new companies are cropping up to trade wherever the opportunity presents. These companies have relatively low overheads, are light on assets and consider themselves to be opportunistic traders. This indicates that people still see the opportunity for profit margins within the industry and the increased competition will continue to drive the sector into the future. Just as we think the world can't get any flatter, it does, bringing with it new opportunity. Feeding the world is of vital importance, meaning our industry is key and although changing, will always be fundamentally crucial. ¹⁵





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

Case IH unveils new 2000 Series Early Riser® planter



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

Image Credit: Case IH

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

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

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

Built for speed and accuracy

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

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

A wide press wheel lightly firms soil on top of the furrow to eliminate air pockets, ensuring optimal seed-to-soil contact for quick germination. The chevron tread pattern scores the soil to encourage

surface cracking for easier emergence in crust-prone soils.

Factory-fit precision planting technologies

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

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

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

Agritec Africa covers 25 sectors of agriculture as well as dairy, livestock, poultry and animal husbandry industries. Agritec Africa 2018 is the open-access doorway to the global marketplace.

Fifth Agritec Africa opens on June 20

THE FIFTH EDITION of Agritec Africa is jointly organised with the Ministry of Agriculture and Irrigation, Republic of Kenya. The expo, with a participation profile of nearly 150 companies from Kenya and abroad, is expected to attract 15,000 visitors. Agritec Africa 2018 will be inaugurated on June 20, 2018 at KICC, Nairobi, Kenya. Farmers, traders, agronomists, scientists, farm owners etc will take part in the exhibition.

Key features of Agritec Africa

- Best platform for agriculture, dairy, poultry and livestock sector
- Perfect platform for B2B, B2C, B2G and Exim inquiries
- Co-current events include Dairy Livestock & Poultry Expo Africa and Graintech Africa
- Conference theme: Agriculture transformation and use of technology in farming
- International Pavilion: China, Korea, India and Netherlands
- International participation from countries like China, Ireland, Italy, Indonesia, France, India, Japan, Korea, Turkey, Kenya, Jordan, Italy, Egypt, Finland, Germany
- Technology display covering pre-harvest to postharvest

Farmers can adopt the new technologies by visiting Agritec Africa 2018. The entry to the exhibition is free.

"The fifth consecutive show – Agritec Africa is going to be a very impressive event for Africa and especially East African Countries. This year companies from all sectors namely irrigation, plasticulture, seeds, machinery, dairy technologies, poultry etc will be present in the exhibition. Such global exhibitions are very important for overall growth in agriculture sector," said Sanyal Desai, CEO, Radeecal Communications.

"For entrepreneurs with vision and seamless ambition, Agritec Africa provides a unique opportunity to see, learn, sell, buy and tie up," said Neeraj Shah, CFO, Radeecal Communications.





Image Credit: Radeecal Communications

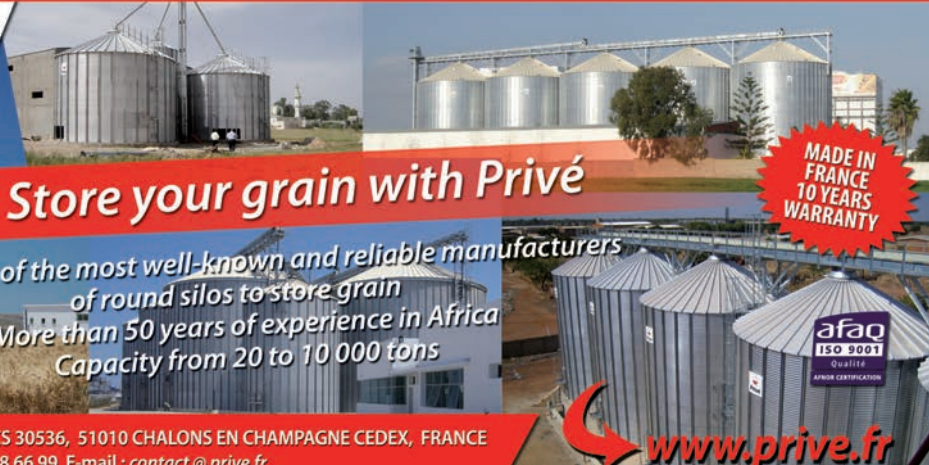
Farmers, traders, agronomists, scientists and farm owners will take part in the exhibition

Agritec Africa covers 25 sectors of agriculture as well as dairy, livestock, poultry and animal husbandry industries. It offers an ideal launch pad for new ideas, products and services, a conducive platform for forging joint ventures and collaborations and an open marketplace to source ideal solutions. In sum, Agritec Africa 2018 is the open-access doorway to the global marketplace.

The participants' profile includes agri ecology, agricultural building contractors, agricultural machinery, aquaculture, biotechnology, fertilisers and chemicals, floriculture, fork lift and handling equipment, greenhouses, irrigation and water technologies, livestock and dairy farming, marketing and export services, organic agriculture, seeds and plant propagation material, plant protection, plasticulture, post-harvest treatment, poultry, precise agriculture, renewable energy, rural development, software and hardware, veterinary, turnkey projects and knowledge transfer products.

Agritec Africa team strongly believes that overall growth in agricultural sector will be gained, if actual farmers grow. Exhibitors in Agritec Africa 2018 will exhibit the latest technologies. 





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The Nigerian diaspora have an exciting opportunity to invest their money in farms back home via a new online financial platform created by tech start-up Farmcrowdy.

Bringing Nigerian farmers and investors together online

FARMCROWDY IS A revolutionary agri-tech platform helping to boost the US\$£40.5bn agricultural sector in Nigeria. The Nigerian government is referring to agriculture as the "new oil" and companies, such as Farmcrowdy, are taking advantage of this new opportunity.

The company's ethos is to simply bring farmers and investors, so-called sponsors, together through the use of digital technology. Whereas in the past, investment into agricultural projects may have gone amiss for one reason or another, stemming either from mistrust or dishonesty between parties involved, Farmcrowdy is offering sponsors a transparent system through a mobile phone app where investors can see first-hand how their investment on a farm is progressing throughout the cycle. It is a win-win situation all round. When the yield is sold at harvest, the sponsor receives their original investment plus 40 per cent of the profit while the farmer and Farmcrowdy receive 40 per cent and 20 per cent respectively.

Already the company has registered 7,000 farmers since its launch in 2016 and aims to increase that number to at least 50,000 by 2020. To reach this goal, however, it wants more of the Nigerian diaspora living across the world, notably the UK, US and UAE to become a sponsor, especially those who have a passion for agriculture and want to make a socio-economic impact in their communities back home. To date, the Farmcrowdy platform has amassed more than 1,000 sponsors and total investments from Nigeria and its diaspora now reach in excess of US\$2.19mn, with a growing number of sponsors in the UK.

The main farms currently in operation across the nine states in Nigeria are producing rice, cassava, poultry and maize

Sola Oyawale, VP investment and corporate governance at Farmcrowdy, which has headquarters in Lagos, said he was upbeat about the level of response he had received from some potential Nigerian investors based in the UK. He said, "Nigerians understand how dominant the agricultural market is in the country, but there hasn't been a reliable route to market, in terms of sourcing farmers and making/receiving payments. This is the challenge Farmcrowdy has set out to conquer and we've recorded some strong interest already, not only from sponsors in Nigeria, but also from the diaspora. Some people have a genuine passion to create an impact in their country while others have shown a renewed enthusiasm for



Farmcrowdy has registered 7,000 farmers since its launch in 2016

agriculture and the potential for achieving strong returns on investment.

"What makes our business different to other agri-tech firms is that we are more sensitive to the concerns of the farmers and wanting to make their lives better."

Tope Omotolani, VP Operations and co-founder, and her team of specialist agents on the ground look after 3,000 farmers in Nigeria. She said, "Rural farmers contribute the largest

amount of food crops that are grown in Nigeria's economy, yet they have the least amount of resources to cultivate important food crops. In order to increase food production in Nigeria, we have set a goal to work with 50,000 farmers by the year 2020. This is no small goal by any means but we also understand that the impact this would create in the lives of the farmers, their community and in the country as a whole would be remarkable."

She said the company is working hard to equip the farmer as much as it can so that their passion for farming will continue for years to come.

"One of our incentives is that we pay the farmer to work on his farm so they don't have to wait until the end of the cycle, she continued. "We also partner with a range of companies to help the farmers. ASTC, for example, provides tractor services for our project in Jos and a team from Notore works with farmers and advises them about the type fertiliser that should be applied. We also help them to sell their crops for a better price rather than just selling crops for their family to survive." Farmers have already seen the positive economic difference that Farmcrowdy has made to their lives.

Farmer Dayo Adeoye said, "Farmcrowdy has made things easy for farmers and has helped increase our production by 50 per cent. I like the flexibility, transparency and integrity. They are also open to feedback and make necessary changes. I am already recommending Farmcrowdy to people and I will continue to do so."

Meanwhile, tractor manufacturer, John Deere and Alluvial have also boosted farmers' confidence in Nigeria after agreeing to lease up to 300 tractors to at least 100,000 farmers in the Niger Delta region. The scheme will help turn subsistence farming into a commercial business by allowing farmers to rent tractors to plough and harvest the land at a competitive rate. Dimieari Von Kemedi, the founder of Alluvial, told the Financial Times, "This deal is providing mechanisation to smallholders without them having to invest in tractors themselves. This could be an example not just for Nigeria, but for all of Africa." With such developments taking place, the future of agriculture in Nigeria looks very bright indeed. **E**

SGS Group employs over 95,000 staff and operates a network of more than 2,400 offices and laboratories around the world. Business manager Andy M Morton opens up about company's mission and aspirations.

SGS services: Tested and trusted

SGS INSPECTION SERVICES is the world's leading inspection, verification, testing and certification company. As of today, SGS Group remains the leading inspection company in Nigeria with its operation in Lagos and Port Harcourt and other locations in Nigeria.

Popular services in Africa

For the upstream clients, the most popular services currently are M+I (Metering and Instrumentation) and Laboratory services.

Locally, we are looking to expand our laboratory services to include Sample Management, Reservoir Fluids analysis using the Pressure-Volume-Temperature (PVT) equipment and introduce other upstream services including Wireline and Slickline well intervention services and SGS Horizon covering all subsurface and engineering aspects. As the leading solutions provider for the oil, gas and chemicals sector, our robust technology, innovative approach, technical support and dedication to quality and safety bring tangible benefits in both the upstream and downstream sectors.

The biggest service by far is Quality and Quantity supervision

and certification of custody transfers of bulk petroleum cargoes. This refers to both import and export. The most common of these are offshore Ship to Ship petroleum operations where larger vessels, too big to dock in port, discharge product to smaller vessels that can offload in port. As specifications for individual products vary from location to location, laboratory analysis to ensure that the product conforms to specification is very important.

Nigerian refineries

There will be fewer petroleum product imports and fewer crude oil exports as the refineries, once operational, will be processing the crude to produce petroleum products for national consumption. This should mean a reduction in OGC historical business of Quality and Quantity shipping inspections. However, the refinery building will create opportunities for our other business sectors such as our Industrial and EHS (Environment, Health and Safety) divisions through their design, commissioning, start up and continuous operations. OGC services will evolve to incorporate new innovative services such as Fuel Integrity programmes and Retail Services.



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The Kristall 9 is a compact cultivator which can be used for both primary and secondary tillage with great success thanks to the innovative tine design and integrated roller. Thanks to the compact design of the Kristall 9 it can loosen and aerate the soil whilst mixing in residue. The levelling discs then even out the surface before the crumbling rollers form a firm seedbed.

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1

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2

Creates better prepared seedbed...

Thanks to the integrated roller and levelling discs, the Kristall 9 leaves behind a firm and structured seedbed. The roller also regulates the working depth of the Kristall 9, and helps conserve moisture.

3

Versatile operation with quick change shares...

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At SGS, safety is paramount. SGS has 15 rules for life to keep our people safe, always. These are based on the risks we have identified within the industries where we work. These rules have to be obeyed by everyone conducting work on behalf of SGS. In addition, safety meetings are conducted at least on a weekly basis at all our sites.

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