www.africanfarming.net

African Farming and Food Processing

July/August 2016

Europe €14.50 - Ghana C1.3 - Kenya KSH150 - Nigeria N200 - South Africa R18 - UK £9 - USA $15

Vet services
in remote regions

Broilers
combatting cellulitis

Baler
progress

The John Deere F440M fixed chamber round baler. p32

Serving AGRICULTURE for 36 YEARS

Join the salesforce of the rising European star

The rising star of Europe, ArmaTrac is now in Africa!

Dealerships in 4 continents, 24 countries and exported to 33 different countries, **ArmaTrac** is offering dealerships in Africa, the land where agriculture is born.

Farmers' favorite, the powerful Perkins engine, European select engine components, efficient fuel consumption and powerful, dynamic design of **ArmaTrac** tractors will be number one choice with the farmers and will tackle any task in the garden and the field.

If you want to become a part of this powerful, young and dynamic family and join our acclaimed global sales network, contact us. Add value to your job and prestige to your gains with **ArmaTrac**.

ArmaTrac®

www.armatrac.com

/ArmaTrac /ArmaTrac /company/armatrac

Contents

Maasai cattle at a waterhole in Tanzania (Image: Fotalia/Carsten Krüger)

A high power, broad spectrum nutrient response is required to sustain coffee during periods of fast foliar growth and corresponding root flush. (Image: Omex)

The Markant 55 and 65 models are the biggest selling Claas balers in African countries.

African Farming and Food Processing

Managing Editor: Zsa Tebbit

Editorial and Design team: Bob Adams, Prashant AP, Hiriyti Bairu, Sejal Bhat, Miriam Brtkova, Andrew Croft, Ranganath GS, Georgia Lewis, Rhonita Patnaik, Rahul Puthenveedu, Nicky Valsamakis, Vani Venugopal, Louise Waters and Ben Watts

Publisher: Nick Fordham

Publishing Director: Pallavi Pandey

Magazine Manager: Satyanarayan Naidu
Tel: +91 80 68888893
email: satyanarayan.naidu@alaincharles.com

Country	Representative	Telephone	Fax	Email
India	Tanmay Mishra	+91 80 65700911		tanmay.mishra@alaincharles.com
Nigeria	Bola Olowo	+234 8034349299		bola.olowo@alaincharles.com
South Africa	Annabel Marx	+27 218519017	+27 46 624 5931	annabel.marx@alaincharles.com
UAE	Graham Brown	+971 4 4489260	+971 4 4489261	graham.brown@alaincharles.com
USA	Michael Tomashefsky	+1 203 226 2882	+1 203 226 7447	michael.tomashefsky@alaincharles.com

Head Office:
Alain Charles Publishing Ltd
University House
11-13 Lower Grosvenor Place
London SW1W 0EX, United Kingdom
Telephone: +44 (0) 20 7834 7676
Fax: +44 (0) 20 7973 0076
E-mail: post@alaincharles.com

Middle East Regional Office:
Alain Charles Middle East FZ-LLC
Office 215, Loft 2A
PO Box 502207
Dubai Media City, UAE
Telephone: +971 4 448 9260
Fax: +971 4 448 9261
E-mail: post@alaincharles.com

Production: Priyanka. A, Kavya J, Nelly Mendes, and Sophia Pinto
Email: production@alaincharles.com

Subscriptions: circulation@alaincharles.com

Chairman: Derek Fordham

Printed by: Buxton Press

US Mailing Agent: African Farming & Food Processing USPS. No. 015-224 is published six times a year for US$90 per year by Alain Charles Publishing Ltd, University House, 11-13 Lower Grosvenor Place, London, SW1W 0EX, UK
Periodicals Postage Paid at Rahway, NJ. Postmaster: send address corrections to: Alain Charles Publishing Ltd, c/o Mercury Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001.
ISSN: 0266 8017

Alain Charles Publishing
Serving the world of business

Farming Calendar 2016

SEPTEMBER

1-2	4th Africa Palm Oil Value Chain *www.cmtevents.com*	ABIDJAN
5-9	World Poultry Congress 2016 *www.wpc2016.com*	BEIJING
7-9	COTECA *www.coteca-hamburg.com*	HAMBURG
13-16	SPACE 2016 *www.space.fr*	RENNES
26-28	Agrikexpo 2016 *www.agrikexpo.com*	ABUJA

OCTOBER

4-6	Ethiopia Agrofood Plastpack *www.agrofood-plastpack.com*	ADDIS ABABA
21-22	Aviana Uganda 2016 *www.avianaafrica.com*	KAMPALA
23-24	Naivasha Horticultural Fair *www.naivashahortifair.com*	NAIVASHA
24-25	Cropworld Global 2016 *www.cropworld.com*	AMSTERDAM

NOVEMBER

28-30	African Agri Investment Indaba (AAII) *www.agri-indaba.com*	CAPE TOWN

DECEMBER

2-5	4th Addis Agrofood Exhibition *www.addis-agrofood.com*	ADDIS ABABA

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

The African Agri Investment Indaba

THE AFRICAN AGRI Investment Indaba (AAII) is the world's meeting place for investment in Africa's agricultural and agro-processing sectors, and will take place in Cape Town on 28-30 November. The AAII provides the most complete forum for more than 500 investors, bankers, governments, project owners and advisers to connect and identify real opportunities.

The agri asset class is fast-growing and has become increasingly important to the global investment community. Similarly, investment in the sector is transforming economies and societies in Africa; and attracting investment is a priority of governments across the continent. Investing in Africa's agri sector not only offers above average returns, but can transform societies, address food security and reduce poverty.

AGRIKEXPO continues to raise its profile

THE 5TH AGRIKEXPO 2016 has continued to rise in profile with a burgeoning number of exhibitors and visitors from all over Africa and the world. Nigeria is, no doubt, a choice destination for agribusiness development and investments, given the focus of government on transforming the sector for food security, increased export earnings, job creation and other economic benefits. Nigeria is the hub of trade in West Africa with buyers coming from nearby countries to procure from Nigeria. There is a great need for new investments, partnerships and appropriate technology.

The 2016 edition will be held in Abuja, close to top decision makers in government and large farm owners. The government remains the largest spender on agricultural equipment and machinery, although the private sector is playing a great role.

Nigeria, with a population of moer than 170mn, is currently the most viable marketplace for agriculture in Africa, by virtue of its massive arable land, growing infrastructure, and high demand for agricultural consumables.

Van Oers United focuses on bringing the best of Africa to UK buyers

ETHIOPIA AND SENEGAL are not the first two countries to spring to mind when it comes to the supply of fresh vegetables to the UK, but all that could be about to change with the arrival of Van Oers United, a Dutch company that has made producing in Africa something of a speciality.

Although based closed to Rotterdam, Van Oers's production focus is on Africa, where company founder, Karel Van Oers, has established farms in Senegal, Ethiopia and Morocco to produce a variety of fresh vegetables, including green beans, peppers and tomatoes.

According to Van Oers' business development manager, Harry Vervelde, the extent of the company's farming interests in Africa give it a distinct advantage when it comes to serving clients in the UK and continental Europe as its geographical spread means it can deliver year-round continuity and quality.

"We have a very stable supply due to the fact that we are growing in different locations, such as Morocco, Senegal and Ethiopia, which are our main production areas," he explained. "The success of Van Oers is based on the strength of our own production and our solid partnership with growers. One of our unique selling points is that we can deliver year-round supply, so we can be a one-stop for retailers."

Van Oers in Morocco.

An international fresh vegetable business, Van Oers was already well established as a fresh vegetable supplier to foodservice operators and grocery retailers in the Netherlands, Germany, Belgium, the Scandinavian countries and Switzerland, before beginning "serious exports" two years ago to the UK and Ireland.

"We're looking to extend our business on an export basis because our production areas can produce more than what we are selling at the moment, and we are looking to deepen our relationship with our existing customers," he explained.

Van Oers, which was acquired by French group Agrial's Priméale subsidiary in 2015, sells open-field and greenhouse vegetables to retailers, wholesalers and foodservice companies in more than 15 European countries, and recorded a turnover of US$286mn in 2015.

"We specialise in a few items which we are very good at because we have all the necessary certifications in food safety and sustainability, and we are certain we are a reliable partner, especially for retail and food service clients," said Vervelde.

Mobile operators help African farmers

SOUTH AFRICAN MOBILE operators are breaking new ground across Africa by providing solutions to problems in the agricultural sector, such as helping in the fight against stock theft. Vodacom has been rolling out a service called "know your farmer" across Kenya, Nigeria and Ethiopia, to help subsistence farmers attain easy access to finances and markets.

Vuyani Jarana, chief officer of the enterprise business unit at Vodacom, said the big data platform was cloud-based and allowed for the registration of a farmer's identity, land marks and any information that could be required by the government, should be required for farming subsidies.

"If a government of a particular country wants to boost, say, coffee production by using the platform, it is able to track the farmers via the platform. The government can also offer advice to the different farmers on how to increase their production," he said.

Citing World Bank data, Jarana also said, due to risks associated with farming, smallholder farmers only accounted for about five per cent of all private sector funding to the sector. "Know your farmer" also enables farmers to be provided with advice that can help them increase their yield.

The farmers can get advice on any queries related to crop and livestock. In terms of market information, major players can trace production trends as well as expected harvests.

"This enables even financiers to know the production efficiencies of these farmers, attracting finance and creating liquidity," Jarana said.

He added that such advances in technology also help governments to make direct interventions to improve skills.

MTN also recently launched a livestock tracking solution in Nigeria. Through this solution, which works through a solar-powered system that uses GPS technology, herders are able to track the location of grazing cattle.

The solution also sends emergency alerts to authorities when the livestock is exposed to danger.

Nigeria launches the Soil Doctor

NIGERIA IS LAUNCHING a long-overdue national programme for its millions of small-scale family farmers: a soil test kit linked to the digital cloud. The programme by the government of Nigeria follows decades of declining soil health and mounting malnutrition.

Known as "Soil Doctor", the test will enable farmers to quickly analyse the nutrient content of their soil. This information, in turn, will allow them to determine which fertilisers to use and in what amounts. The goal: to improve food production by getting the most out of the soil.

The programme is meant to address a problem that is widespread not only in Nigeria but also across sub-Saharan Africa: some 65 per cent of the region's soils are degraded. Extensive land degradation is now a major driver of hunger and food insecurity, for depleted soils can neither support high yields nor grow nutrient-rich crops.

It is difficult to overestimate the importance of healthy soils. Unseen to the naked eye, healthy soils improve the activity of soil microbes, which in turn help plants utilise nutrients; cope with water stress; and combat crop diseases and pests. For Africa to sustainably feed its growing population, many governments must emulate Nigeria's example and take action to restore soil health.

It is often a matter of reversing the damage done by "soil mining." In many parts of Africa, poor soils are the result of repeated farming of the same land without replenishing the soil's nutrients. Crops consume upwards of 45 kg of nutrients and minerals from each hectare of land every season.

When farmers cannot afford to replace the soil nutrients taken up by their crops, the soil is literally mined of life. In addition, factors such as deforestation, irrigation and soil salinisation, excessive use of nitrogen fertilisers, and overgrazing contribute to soil degradation.

Revitalised banana farming in Côte d'Ivoire

THE EU HAS announced that they will spend US$50mn in the Côte d'Ivoire to revamp the almost vanguished banana production. This was also done to improve banana exportation to Latin America.

This recovery has enabled thousands to resume their jobs at farms making them earn a living once again.

Two multinational subsidiaries share the country's main banana production : la Société de Culture Bananičre controls 56 per cent of banana exports, whilst BANADOR (subsidiary of the CHIQUITA Group) controls 27 per cent. The remaining 17 per cent is controlled by local independent producers within the Organisation of producers and exporters of pineapple and banana.

Banana farming is mostly associated with the northern parts of the Côte d'Ivoire. The country is now aiming to produce at least 21,000 tonnes of bananas annually starting from 2019 to revitalise rural economy in the north of the country.

The project is expected to create more than 700 direct jobs and indirectly to help more than 4,000 people. Until now in the Côte d'Ivoire, Africa's second largest producer and the world's thirteenth largest producer of bananas, the production of fruit was limited to the wooded areas of the nation.

Feed mill aims to resolve land disputes in Nigeria

A NEW FEED mill set up by Portuguese and Nigerian partners looks to ease tensions between livestock and arable farmers, and manufacture high-quality feeds.

As well as manufacturing quality feeds for local poultry and livestock farmers and offering employment for local people, a feed mill can also help to resolve conflicts over land use, according to Nigeria's former vice president, Atiku Abubakar.

Speaking at a groundbreaking ceremony in Abuja recently, he said the establishment of feed mills can help defuse the conflicts between herders and farmers that are costing lives and livelihoods in his country.

Located in the Idu Industrial District in the Federal Capital Territory, the feed mill is being set up by Rico Gado Nutrition Nigeria, a private limited liability company formed in 2013 as a joint venture between Rico Gado Nutracao SA of Portugal and GeseDerdirabe Holdings of Yola in Adamawa State, which is owned by Abubakar.

Rico Gardo's first factory in Nigeria was commissioned last year in Yola. According to Abubakar, the feed produced there has already helped reduce the land area required to raise cattle.

"The Yola mill produces 20 metric tons per hour of carefully balanced and locally sourced quality feed for a wide range of livestock, including poultry, cattle, goats, and horses," he said. "We are also contributing to job creation, technology transfer and progressive change in farming culture. We believe there is a future in farming."

The new feed mill in Abuja is expected to be completed by early 2017 and to have a capacity of 50 metric tons per hour.

Dar Al Dawa Veterinary
& Agricultural Industrial Co.

دادفت
DADvet

www.dadvet.com

we are looking for strategic partners in Africa to expand our businesses, if you are interested kindly contact us.

27 YEARS OF LEADERSHIP

P.O. Box: 285 Na'ur 11710 Jordan
Tel. 06 5727981/2/3
Fax. 06 5727984
E-mail: admin.dv@dadvet.com
www.dadvet.com

دار الدواء للصناعات البيطرية والزراعية

New Holland strengthens distribution network in Sudan

NEW HOLLAND AGRICULTURE, and its distributor in Sudan, launched their Sub-Dealer Network Project with an official ceremony in Hasahisa, when five new sub-dealerships located in Almanagil, Dongola, Kosty, Al Faw and Almazmoom joined the network. The event, hosted by CTC, was attended by the Minister of Agriculture for Gazeira State, Dr Ahmed Osman, and the mayor of East Gazeira, Eng Muhammed Kamal. The hosts included CTC Engineering director, Eng Muhammed Kamal, as well as representatives from the Khartoum and Madani branches. Mr Özkan Eren, New Holland marketing manager Middle East and Africa and Mr Hakan Dönmezer, New Holland business manager EMEA were also present.

This is the first phase in CTC Engineering's project, which aims to bring New Holland closer to its customers across the country by expanding CTC Engineering's network through the addition of up to 24 sub-dealers. Today CTC Engineering supports its customers in Sudan with its main outlet in Khartoum, seven branches in Qadarif, Sinnar, Albara, Madani, El Obeid, Kassala and Dongola and the five new sub-dealerships.

The new sub-dealers join the highly professional network of CTC Engineering, which provides the highest standards in after-sales support with a fleet of well-equipped mobile workshops and a well-established spare parts organisation. All new additions to the network are carefully selected for their capability to deliver customer support to these high standards.

Better performance through a healthier gut

THE GENETIC POTENTIAL of commercial poultry has dramatically improved over the past decades. Growing performance, feed conversion and viability of the birds is on a much higher level than 10-20 years ago. This development results in much more sophisticated management of the birds. For example, today a broiler needs only 42 days to reach a body weight of 2.8 kg. If, during this short fattening period, only one day occurs where the birds are not able to grow their genetic potential, this will directly impact the final results of the whole flock.

That's why prevention of diseases and optimal health maintenance are of the utmost importance. In recent years, a new focus has been on poultry gut health. If the gut stability is lost, the digestion and ability to absorb nutrients will suffer, but also the well-being of the animals will be impaired. Intestinal disorders are the main cause of wet litter, which can result in reduced performance and food pad dermatitis. In recent years there has been a lot of research on natural ingredients to improve gut health. MiaDiasan, for example, is a plant-based product, which also contains clay minerals and hydrolysable tannins from the sweet chestnut (Castanea sativa). In a scientific trial with BUT 6 Toms in Germany, it has shown high effectivity when it comes to gut health, improved body weight gain, FCR and a lower mortality. The specially selected ingredients promote the microbiota balance and optimise the passage rate of the intestinal contents. The visibly improved faecal consistency leads to drier litter and thus to improved food pad health. The included tannins have antimicrobial, antiviral and anti-inflammatory effects, which result in a better weight gain of the birds. The trial was conducted with 568 BUT 6 Toms, where 284 have been in the trial and in the control group. The trial group has been fed over the whole production period of 145 days with 1.5 kg of MiaDiasan per ton of compound feed. The technical results of the trial can be found in table 1.

Table 1: Performance Data of MiaDiasan and Control group

Parameter	Control	Miadiasan	Difference
Final weight	20,82 kg	21,61 kg	+790 g
Daily weight gain	145 kg	150 g	+ 5 g
Feed conversion, kg/kg	2,65	2,55	-0,10
Mortality	9,47 %	6,20 %	-3,27 %

www.miavit.com

Growket - a new company in the Symaga group

ON 16 JUNE, the new brand in the Symaga Group, Growket, was presented by Alfonso Garrido, president of the group. Symaga was founded in 1985 to manufacture silos and livestock equipment. It is currently a multi-national Spanish company, exporting more than 90 per cent of its production, and is present in more than 120 countries.

Symaga divided its portfolio into several business lines until 2016: industrial silos, agriculture equipment and livestock equipment (poultry, porcine and ovine). Symaga remains the brand for manufacturing and marketing of industrial silos. Growket was born as the brand name for livestock equipment; and Agravid for metal water tanks and vineyard equipment.

Growket was born inside the Symaga Group, which strengthened its business structure after a huge amount of investment. Symaga Group has set up a production facility with the latest technology, and has expanded the technical and commercial departments. These measures will enhance and professionalise the livestock division to offer a global service in farm silos, poultry, porcine and ovine equipment.

Backed by an experience of more than 30 years in the industrial silo sector, the company has exceeded 6,000 installations in five continents, and ensures optimal execution of any project.

The founder began its trajectory in the livestock sector. Historically, Symaga has worked in different livestock projects; now the aim is to become a worldwide leader in the manufacturing and marketing of poultry, porcine and ovine equipment.

Clariant launches unique weed control boosters

CLARIANT IS LAUNCHING a unique, all-in-one, crop spraying innovation to support farmers' efforts to improve weed control and achieve better yields.

Weeds, diseases and pests prevent crops from achieving their full yield potential. Without herbicides, up to 50 per cent of global wheat yields and 74.9 per cent of potato yields could be lost* – a critical problem in the challenge to feed a world population growing by about 80mn people a year.

As herbicides differ widely in their properties, so do their needs. The new Synergen ME family offers various products optimised for best fit to particular important herbicides and their combinations.The Synergen ME microemulsions provide an efficient and sustainable new tool that eliminates the need for farmers to mix several products with their chosen herbicide in order to optimise spray behaviour and achieve outstanding field performance. The systems have no negative impact on spray drift and are gentle to crop plants. Key to modern farming, the tank-mix adjuvants are also based predominantly on renewable products, are biodegradable and require no hazard labelling.

"Synergen ME provides an eco-friendly solution for modern agriculture that limits crop losses and reduces the amount of product needed, while delivering a new level of quality and performance to the crop protection segment. The multifaceted approach from one product takes crop protection to a higher level, improving the field performance of acid herbicides, and does so with a good environmental profile," commented Ralf Zerrer, head of strategic marketing industrial and consumer specialties at Clariant.

** Source: Oerke, E-C: Crop losses to pests; Journal of Agricultural Science (2006)* 144, 31-43.

Nutreco to acquire Advit in South Africa

NUTRECO HAS ENTERED into an agreement to acquire Advit, a South African premix and feed additive company.

Advit is headquartered in Johannesburg and produces a wide range of premixes, farm minerals and animal health products. Trouw Nutrition, Nutreco's animal nutrition business, entered a strategic alliance with Advit in 2015. The acquisition is subject to regulatory approval and is expected to close in the second half of 2016.

South Africa is the largest and most advanced animal nutrition market in Africa. Advit has a solid market position for all livestock species. It operates countrywide and also exports to neighbouring countries.

"With the acquisition of Advit, we further strengthen our presence on the African continent," said Harm de Wildt, managing director for Nutreco's operations in EMEA. "The company already has a strong position and reputation in the market. We can help it grow further using the Trouw Nutrition market approach of combining technical and application know-how with innovative products, models and services."

More than half of the projected global population growth in the coming decades will take place in Africa. The continent will have added 1.3 bn people by 2050, roughly equivalent to the current population of China. This investment is one of the steps in Nutreco's strategy to expand in Africa.

Ethiopia launches seedlings plantation scheme

ETHIOPIA HAS LAUNCHED its annual national seedlings plantation scheme with the aim of planting 4.3bn seedlings on a million hectares of land through the course of the current rainy season.

Ethiopia had launched the first annual plantation programme eight years ago while celebrating its unique millennium. Reports, however, revealed that less than 30 per cent of the four billion planted tree seedlings have taken root during the reported period.

After declaring the launch of the programme, Deputy Prime Minister, Demeke Mekonnen, said the programme has made a significant contribution to the success of Ethiopia's ongoing green growth strategy. Ethiopia envisaged raising national forest coverage to 30 per cent by 2025 from 15.5 per cent now, according to him.

Organic farming beats conventional agriculture in Africa

A LONG-TERM STUDY in Kenya has shown that organic farming not only generates comparable yields, but also produces more income and health benefits for farmers than conventional methods. Findings from the 10-year study conducted in Thika and Chuka sub-counties in the East African nation demystified the widely-held belief that organic agriculture needs more space to achieve comparable yields to conventional agriculture.

The survey, carried out since 2007 by the Swiss-based Research Institute of Organic Agriculture (or FiBL) in collaboration with local partners, involved field trials conducted on two locations in Kenya's central highlands.

According to Dr Noah Adamtey,, the project's co-ordinator, the study showed that yields of maize under organic production are similar to those under conventional production in high input systems - but with lower costs.

Namibia becomes first African country to export beef to the US

A FINAL RULING from the US Food Safety and Inspection Service (FSIS) has approved the importation of boneless meat and other beef products from Namibia, making the country the first African nation to be approved for beef export to the USA.

The FSIS confirmed the eligibility of Namibia to export meat products to the US, according to a statement issued by the US Embassy in Windhoek. The statement said that the United States Department of Agriculture (USDA) has added Namibia to the list of countries eligible to export beef to the United States.

The decision will allow Namibia to export boneless (not ground) raw beef products such as primal cuts, chuck, blade, and beef trimmings from certified establishments to the United States.

Beef exports to the United States could reach up to 860,000 kg in the first year, increasing to 5.7mn kg in five years, the Namibian application for approval stated.

The ruling for Namibian beef to the US comes after the United States Cattlemen's Association (USCA) initially opposed Namibian beef on the grounds of the potential risk of foot and mouth disease (FMD) spreading to that country's livestock market as a result of Namibia's proximity to FMD-affected countries Angola, Zambia and Botswana.

The FSIS stated that Namibia's laws, regulations, and inspection system are equivalent to the US inspection system for meat and meat products.

US Ambassador to Namibia Thomas Daughton welcomed the final ruling and said, "This is truly great news and represents the culmination of literally years of hard work by officials of our two great nations. This move opens an important new market to Namibian beef producers."

Only 33 countries worldwide have been approved to export meat to the US and Namibia is the first African country on the list.. (Image: bricks-info.org)

By encouraging co-operation between breeders, distributors and farmers, Hendrix Genetics is helping the African egg layer sector to expand, and to increase the supply of this vital food source.

Co-operation and understanding the keys to feeding a continent

EGG PRODUCTION IN Africa accounts for less than five per cent of the world total. At the same time, a growing recognition of the humble egg as a nutritional powerhouse, with the potential to feed a continent, means Africa's poultry sector continues to enjoy tremendous opportunities. As its population increases, and the size and earning power of the African middle class grows, increased demand for poultry products will continue to challenge the continent's egg farmers. By encouraging co-operation between breeders, distributors and farmers, Hendrix Genetics is helping the African egg layer sector to expand, and to increase the supply of this vital food source.

In 2050, the world population is predicted to reach nine billion and it is estimated that 25 per cent of that global population will live in Africa. This phenomenal expansion presents the nations of an extremely diverse continent with a common problem – how best to feed its people. Backyard egg production is a normal part of life across Africa, but similar to the rest of the world, the extraordinary benefits of eggs, as a safe source of protein, are only just being understood.

For example, all eggs, white or brown, contain 13 essential vitamins and minerals, all for just 70 calories. They are affordable and also contain six grams of high-quality protein and all nine essential amino acids. Eggs are an excellent source of choline and selenium and a good source of high-quality protein, vitamin D, vitamin B12, phosphorus and riboflavin

In fact, eggs are one of the most efficient and cost-effective ways of converting feed into protein for human consumption, with far lower environmental impacts than, for example, cattle farming. Therefore, the prospects for everyone involved in the egg production value chain over the next five years are very promising.

Not without challenges

Unsurprisingly Africa presents several challenges to poultry farmers including the extreme climate, poor bio security, variable feed quality and the level of flock management expertise. However, to overcome these challenges, Peter Arts, Hendrix Genetics Layer Division African area manager believes that success in Africa is down to a balance of three vital factors – the right genetic crosses for the area, excellent distributors and positive cooperation between distributor and breeding company.

The African market is based almost entirely on brown eggs. Here are free range eggs for sale in South Africa.

In Africa, commercial flocks are predominantly managed on floor systems which demand robust, easy-to-manage and forgiving birds, capable of bouncing back to full production following the inevitable challenges. Using groundbreaking genomics, exhaustive testing of egg quality and innovative monitoring techniques, Hendrix Genetics' research and development programme results in breeds with unique and highly desirable combinations of resilience, efficiency and performance. For these reasons, breeds such as the feed efficient ISA Brown and the versatile, robust Bovans are popular across Africa.

By no means homogenous

However, Peter Arts believes that it is wrong to look at Africa as one homogenous market. "The African market is by no means homogenous, if anything, it is characterised by the need to breed laying hens that cater for highly specific needs. The Hendrix portfolio is broad enough to provide breeds with traits and characteristics that match the needs of these differing preferences across the continent," he said. "At the same time the breeding programme focuses on the parent stock performance, particularly fertility and hatchability."

For example, although the African market is based almost entirely on brown eggs, the Sudan and Egypt are white egg markets. Whilst in South Africa, the Dekalb Amberlink meets a set of regional demands for a large, highly efficient well-feathered white bird, producing smaller brown eggs, and still able to command a value at the end of its laying cycle.

Meanwhile the innovative ISA Dual is successful in Ethiopia and Tanzania, which is mainly a live market, where normal broiler breeds have not made an impact. The female bird is a productive layer and the male reaches two kilos in 10 weeks – making it an efficient meat producer.

Good management is vital

Technical back-up and good management are vital to ensuring that the genetic potential and performance targets of any layer breeds are achieved. "I believe we offer some of the best technical service in Africa," said Frans van Sambeek, director of R&D at Hendrix Genetics Layer Division. "Our people in the field are there to share their knowledge and experience - to mentor and advise producers and distributors."

Led by a highly experienced area manager with a technical and production background, Hendrix Genetics is helping parent stock farmers with technical issues, veterinary and nutritional advice. They also visit commercial stock customers to monitor performance of flocks and provide management advice. Whilst in Kenya, Hendrix Genetics is arranging seminars on management, bio security and and feed quality.

Cellulitis, a leading cause of carcass condemnation in broilers, represents significant economic losses for poultry producers. Here are several methods to curb its incidence.

Six ways to combat cellulitis in broilers

IN THE US, poultry producers incur economic losses of approximately US$35mn per year due to broiler cellulitis, half of the entire value of carcass condemnations there annually. In Canada, cellulitis constitutes the predominant cause of condemnation in broilers. It impacts many poultry producers worldwide.

Slaughterhouse surprise

Cellulitis, a chronic skin disease mainly characterised by bacterial infection, is a sneaky condition. E coli is the most often isolated pathogen from the lesions, with the pathogenic serotype O78 being the most commonly isolated (Derakhshanfar et al., 2002). In broilers, cellulitis starts during the growing period on the broiler farm but is only recognised at the slaughterhouse after scalding and plucking the carcasses. Cellulitis-affected carcasses are rejected by the inspection vet and destroyed, resulting in economic losses for producers.

Unnumbered losses

In many countries, the estimated market value of losses resulting from carcass condemnations is still unclear, though in many places efforts to identify causes and quantify impacts has revealed cellulitis to be a sizeable problem.

In Brazil, a study was carried out in two slaughterhouses to classify the reasons for condemnation (Figure 1). In slaughterhouse A, a vertical integrator, condemnations due to cellulitis accounted for 4.25 per cent of the total slaughter and 51 per cent of all condemnations. In slaughterhouse B, a vertical integrator, condemnations due to cellulitis accounted for 0.91 per cent of the total slaughter and 25 per cent of all condemnations. The disparity of results is most probably due to different farm management practices.

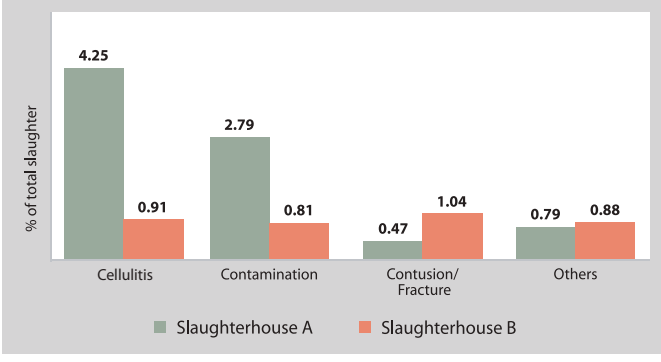


Figure 1. Causes of carcass condemnation in two Brazilian slaughterhouses. Source: Santana A P, et al, 2008

Fighting back

Producers can take a number of actions to combat cellulitis on the farm. These measures include promoting feather coverage, monitoring bird density, reinforcing biosecurity, adjusting the timing of vaccinations, updating management practices and ensuring good gut health.

(Image courtesy: Fotalia/kharhan)

1. Promote feather coverage

The introduction into the market of slow-feathering broiler genetic lines increased the broiler cellulitis problem. Modern broilers have a more prominent abdomen that exposes them to more scratches. There are studies showing that feathering at 28 days is the most predisposing factor of broiler cellulitis. So, a good broiler management that supports proper feathering is of great importance. Avoiding a too hot environment, especially between two and four weeks of age, is also helpful to stimulate feathering and thus minimise cellulitis.

2. Monitor bird density

A greater number of birds per pen (higher density) is associated with a higher incidence of scratches which makes birds more vulnerable to cellulitis. This simple relationship (more birds = more scratches = more cellulitis) is very important - especially in farms where bird density is increased without additional feeding and drinking lines which increases competition among birds for feed and water access.

3. Reinforce biosecurity

Poor litter quality is also associated with higher incidence of cellulitis. A wet litter constitutes an ideal environment for bacterial growth. The frequent contact of the bird's abdomen to the wet litter increases the bacterial contamination frequency and thus, through scratches, the transmission of pathogens from the litter to the bird. Wet litter conditions also result in dirty claws with higher bacterial contamination and are more likely to infect any scratches. Consequently, cleaning and disinfection of barns during the withdrawal period are of great importance. Ensuring a withdrawal period of more than 15 days can also help reduce the incidence of cellulitis.

4. Adjust timing of vaccinations

Conducting broiler vaccinations at the hatchery can contribute to a reduction of total broiler carcass condemnation – including broiler

cellulitis – at the slaughterhouse (Paniago M, CEVA bulletin, 2009). Results of a trial conducted in southern Brazil showed that earlier application of the IBDV vaccination, at the hatchery instead of on the farm, reduced most causes for carcass condemnation, especially broiler cellulitis (Figure 2).

It's important to note that any changes to the vaccination programme should be discussed with the vet team and the vaccine supplier first.

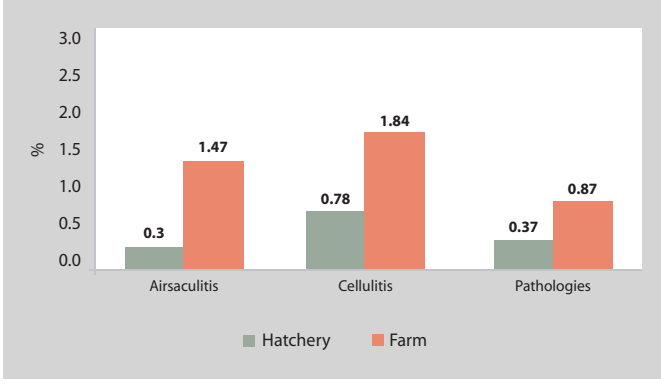


Figure 2. Earlier vaccinations reduce the rate of carcass condemnation.
Source: Paniago, 2009

5. Update management practices

For sure, an improvement at management level in the farms must be considered. Updating equipment and farm design to fit the needs of modern broiler strains in terms of ventilation, feeding and water supply is a must.

Condemnation	Bifidum-Treated- 8,537 Birds	Control- 8470 Birds
Cellulitis	77***	205
Ascites	46	42
Mutilation	34	27
Pendulus Crop	34	47
Cyanosis	36	32
Nephritis	5	4
Hepatitis	4	2
Yalgus/Varus Deformation	2	3
Salpingitis	1	3
Abcesses	1	3
Peritonitis	0	1
Emaciation	0	1
Total	240***	370

***P<0.001.

Figure 3. Probiotic application can reduce broiler cellulitis.
Source: Estrada et al., 2001

6. Ensure good gut health

E coli, the main agent for broiler cellulitis, is an opportunistic pathogen living in the chicken's gut that spreads through the faeces onto the litter. A probiotic, or beneficial bacteria, can modulate the gut microflora and reduce the spread of E coli in the environment. Through competitive exclusion (preventing pathogens from attaching

to enterocytes, or intestinal absorptive cells) and the production of natural antimicrobial substances such as organic acids and bacteriocines, these micro-organisms make it more difficult for E coli to replicate and grow. This reduces the spread of E coli into the environment and, consequently, lowers the probability of E coli infection through scrapes and skin abrasions. A study conducted by Estrada et al. in 2001 showed that administering a Bifidobacteria strain to broilers reduced the incidence of cellulitis in slaughtered carcasses. The B Bifidum treatment group had a lower whole carcass condemnation rate (2.8 per cent vs 4.4 per cent) and a lower incidence of broiler cellulitis (32.1 per cent vs 55.4 per cent) as a percentage of the whole population compared to the control group (Figure 3).

Conclusion

Broiler cellulitis constitutes a major cause of carcass condemnation at slaughterhouses worldwide, representing significant economic losses for producers. Producers can take a number of actions to combat cellulitis including promoting feather coverage, monitoring bird density, reinforcing biosecurity, adjusting the timing of vaccinations, updating management practices and ensuring good gut health through the application of probiotics. Ⓑ *Biomin*

Ceva acquires French vaccine manufacturer Biovac

CEVA SANTE ANIMALE has purchased Biovac Laboratories, a leading manufacturer of autogeneous (bacterial) vaccines, allergy treatments and reagents based in Angers, France. This move will reinforce the group's strategy to find alternative solutions to use of antibiotics.

Biovac, like Ceva, has experienced double-digit growth for several years as veterinarians seek alternatives to control bacterial conditions often now difficult to treat with "classic" antibiotherapy. The company has significant expertise in microbiology, allowing it to provide custom-made solutions for veterinarians and their customers.

Ceva already offers custom vaccines to leading poultry and swine producers in other parts of the world. The strategy is in line with Ceva's stated policy of putting the veterinarian back at the centre of the fight against microbial diseases. Auto vaccines are produced only after identification and diagnosis of the disease serotype by a qualified veterinarian. In cases where a standard vaccine will not be effective, custom vaccines can be produced and prescribed by the veterinarian in four to five weeks, creating an extremely reactive and precise service for livestock producers.

Dr Marc Prikazsky, chairman and CEO of Ceva, said: "As a veterinarian, I know how disappointing it can be to make a diagnosis and then not have the precise tool necessary to control the disease. Biovac provides an extraordinary service to the veterinarians in France. Through this partnership, we will share all our expertise in vaccine production and new technologies, so that together we can provide veterinarians in new markets with an even better service."

Adopting a new way of cleaning the chicken processing plant can save time and money, while raising productivity.

How to reduce cleaning costs in poultry meat processing

CLEANING AND DISINFECTING the poultry processing plant is a daily necessity, but it comes with a cost. These costs not only comprise investment in, and replacement of, equipment but also time and impact on workers.

Several operations need to be completed as part of the plant sanitation programme, including the removal of any solid materials, washing and brushing with detergent, rinsing and disinfection. The equipment normally used to perform these tasks is heavy, subject to wear and tear, and has an impact on workers.

There are, however, examples from other sectors where cleaning is conducted more efficiently. Take, for example, how a car wash operates. The structure commonly used in car washes could be applied to the processing plant, bringing with it several benefits.

Each car wash operation has its own set time for completion.

Alternative cleaning design

Typically, a processing plant depends on heavy-duty wall-mounted hoses that need to be reeled out across the plant floor and reeled back once cleaning is complete.

These cumbersome hoses can make cleaning the overhead conveyor difficult and extremely tiring, and then there is the constant wear and tear as hoses are reeled out, moved around the plant, and put away at the end of the cleaning shift. Added to this, hose guns can become damaged if dropped onto the floor.

Adopting a new way of cleaning the chicken processing plant can save time and money, while raising productivity. (Image: fotalia/roibu)

Car washes, however, have overcome many of these problems and can serve as a model for the poultry processing plant. Typically, they are compact, efficiently laid out, have a hose support structure that stops hoses ever hitting the ground, and revolving supports that allow hoses to be moved 360°, safely, comfortably and quickly. Car wash hoses are light, made of durable materials, and use ergonomically designed guns.

Hoses that can be moved 360° make accessing equipment easier, more comfortable and safer.

Additionally, each car wash operation has its own set time for completion.

Application in the processing plant

The principles employed in car washes can be adapted and adopted in the poultry processing plant by following these steps:

- In each section of the poultry processing plant, install a high-level H-beam between two parallel walls.
- Install a trolley with a rotating support on the H beam, similar to those used on bridge cranes.
- The support will hold the hose, similar to those used in pressure washers. In contrast to the heavier hoses often used in processing plants, these hoses are very light. Their support has a retracting mechanism, ensuring that the hose never comes into contact with the processing plant floor, minimising damage.
- The hoses will end with guns similar to those used on pressure washers. This type of gun tends to be very light, and their design allows the user easy access to any part of the equipment or processing plant section without ever having to get too close.
- One of the two suspended hoses supplies water, which can be either at room temperature or hot, while the other hose will be fitted with a specialised brush to automatically deliver detergent.
- On each of the parallel walls, there will be a storage unit to hold the guns when not in use.
- Once the necessary times have been established to complete the various cleaning tasks, a timer can be set, ensuring that the cleaning operations are completed within the time deemed necessary.

Once chicken processing has finished, cleaning staff should collect all solid materials that may be present on the equipment, walls and channels, or on the floor.

When this has been completed, one worker starts to wash each piece of equipment, while a second worker will brush down the equipment with detergent.

Once these tasks have been completed, the first worker will then rinse down the machinery and other equipment. Lastly, the second staff member applies disinfectant.

This two-person sanitation team then moves to the next section of the processing plant to clean that. The number of work groups will be proportional to the size of the processing plant

Hoses that can be moved 360° make accessing equipment easier, more comfortable and safer.

and to the amount of equipment that needs to be cleaned in the various sections.

Moving away from commonly used, independent hoses to a system based on how car washes operate can reduce the time needed to clean the plant, and cut down on the amount of water and detergent needed.

In addition to this, the cost of replacing hoses and hose guns is lower because neither are ever subjected to friction or knocks against the processing plant floor.

Wattagnet

Africa is ready for investment in poultry sector

AFRICA IS NOW preparing to take its place on the global stage of poultry production, according to a new report from Rabobank.

Poultry markets have been evolving over many years from national businesses to regional ones and now increasingly global, according to the organisation's senior analyst, Nan-Dirk Mulder. Buoyed up by a forecast 60 per cent increase in demand over the next two decades, he considers that this trend will continue.

Europe, the Americas and Asia have been the focus of most of the investment so far, but Mulder thinks that Africa is no where the best opportunities exist for those with the financial resources. As in other regions, it is growth in the middle class and urbanisation that is driving the gradual modernisation of the poultry sector in Africa. As the population becomes able to afford better diets, including animal proteins, they are turning to poultry meat and eggs.

Relatively short payback times make poultry meat and eggs attractive enterprises for local farmers, and both start-up and expansion are relatively easy to achieve.

Also important in Mulder's view is the expansion of supermarket chains and quick service restaurants across the continent as these attract new investment.

For African farming to become more efficient and competitive, there needs to be more investment in science and technology to help in its transformation from rural subsistence to wealth creation, according to the African Development Bank (AfDB), which proposed that better funding of R&D would help increase production, improve food security, reduce foreign exchange spending on imports and generally improve African economies.

Regional veterinary laboratories across Kenya play an essential role in the fight to control and treat diseases in livestock. Under the control of the country's Ministry of Agriculture, Livestock and Fisheries' director of veterinary services, they provide vital services, often supported in remote, harsher locations by satellite labs that keep an eye on migrating livestock farmed by pastoral herdsmen. Tim Guest reports.

Vet services in remote regions

Pastoralism is the backbone of the world's dry lands. (Image: VSF International)

ACCORDING TO THE International Livestock Research Institute, millions of African farmers directly rely on sheep and goats for their livelihoods, with those who migrate according to seasonal cycles being the most vulnerable to the effects of disease in livestock. This is due to the lack of veterinary support for their animals in remote and arid regions.

Over the next 15 years, the institute predicts that the demand for meat and milk from these small animals will potentially rise by as much as 177 per cent. Despite this increased demand, the prevalence of infectious diseases will likely remain as one of the main restricting factors preventing efficient livestock husbandry and productivity.

Veterinary labs in nomadic livestock care

Aimed at safeguarding and improving, not only animal health and productivity, but also human health as well, through food security and trade, regional veterinary labs across Kenya undertake disease diagnosis investigations on a continual basis and can react promptly to outbreaks with the swift detection, diagnosis and treatment of affected herds.

They provide not only a source of vital veterinary medicines and treatments from acaricides to vaccines and other drugs, but also act as a source of livestock nutritional supplements and feed.

Some of the regional vet labs also have satellite labs with which they work, but which are located in the remoter corners of these regions.

From the Nakuru regional vet lab serving the Southern Rift Valley, to the Kericho lab in the west serving the Western Rift Valley region, much of Kenya, and the livestock farmed there, can call on relatively effective services for livestock disease identification and treatment.

In more remote and harsh environments, however, farmers and livestock have long suffered from a lack of accessible veterinary services.

That said, some of the regional vet labs have satellite labs with which they work, but which are located in the remoter corners of these regions and are beginning to cater for more isolated herds and peoples. The Eldoret lab serving the Northern Rift Valley, for instance, has a satellite lab in Lodwar; the Mariakani regional lab serving the country's Coast Province has two satellites, one in Ukunda and the other in Witu.

These satellites often help provide veterinary resources to herds and pastoral farmers who migrate on a regular basis to find water and fresh pasture. This pastoral movement of livestock brings with it its own epidemiological challenges for the veterinary community; unmonitored infectious diseases in isolated regions can remain undetected until a catastrophic outbreak occurs, resulting in the decimation of not just one herd but often many.

One region, Isiolo County in the east of

Far Eastern Agriculture

Asia's only broad based agribusiness magazine

Far Eastern Agriculture has been serving agricultural industries across Asia for over three decades. Gain unrivalled reach to buyers across the continent by advertising in the bi-monthly magazine, on fareasternagriculture.com and in the monthly newsletter.

FarEasternAgriculture.com
Website-Monthly Statistics:
606,071 Page Impressions
44,857 Unique Visitors

ABC Audited
Circulation Figures
Audited average cirulation
Jan 2015 to Dec 2015 : 6013

E-newsletters
Circulation: 8000+
The Far Eastern Agriculture monthly e-newsletter can deliver your marketing message directly into decision-makers' inboxes!

ABC audited circulation guarantees your advertisement will be seen throughout Far East

Alain Charles Publishing
Serving the world of business

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

e-mail: post@alaincharles.com
web: www.alaincharles.com

the country, however, may have found a solution to the problem.

In the arid east

Isiolo County, in Kenya's arid eastern regions, has a veterinary project underway that is working to deliver veterinary care to nomadic peoples and herdsmen in the region. It is aimed at keeping herds and people healthy and prosperous by reducing the level of infectious disease transmission amongst livestock, thereby helping to increase milk production and improve food security for the pastoral herdsmen.

One of the problems in controlling local diseases, such as foot and mouth and contagious caprine pleuropneumonia (CCPP), has been a lack of funding for local veterinary support, which has resulted in these diseases running riot among herds and flocks.

However, with fresh funding from the Isiolo County Climate Adaptation Fund and backing from the UK's Department for International Development (in co-operation with the International Institute for Environment and Development), a regional vet lab satellite has been rejuvenated to help solve the problem. The Keena lab is a satellite to the Karatina regional veterinary lab, (itself providing a range of investigatory services to Central and Eastern Provinces in Kenya), and, with the new funding, has now undergone full renovation and revitalisation.

The new lab facilities and capabilities at Keena lab have been of particular importance for the female pastoral herders.

The laboratory is situated in an arid region, where no other such facilities exist, and is now testing animals coming into Isiolo County from other areas, during dry seasons, for such infections as CCPP. It's something that has not been done before and enables the vets to identify problems, such as blood and ectoparasitic infections and make diagnoses at a very early stage before any animals reach less remote areas and markets where undetected diseases can, potentially, do even more damage to previously uninfected herds.

Since early last year, the lab has been undertaking a vaccination programme among the herds that pass through its areas of responsibility.

The new lab facilities and capabilities at Keena lab have been of particular importance for the female pastoral herders, who are typically responsible for staying with sick and diseased animals during the drought seasons. Instead of chronically sick animals producing little milk and not fetching decent, or any, prices at market, as well as not being fit for slaughter, with early diagnosis, the right medications can be administered and the animals returned to health. This leads to financial success at market for the pastoral herders, but as their livestock is also their primary source of food, the lives of the pastoralists improves overall.

The government has now detected CCPP affecting farmers in Kerio Valley.

Mobile pastoralism's challenge

Mobile pastoralism is typical in arid and semi-arid areas of sub-Saharan Africa with nomadic 'pastoralese' adapting and moving their livestock according to the seasons and the changing availability of water and pasture.

Leading vets in the Isiolo County region say that this nomadic movement of livestock is one of the factors making the transmission of disease easy; sick animals converge at common watering holes and pasture grounds with healthy livestock from their own and other herds. Disease transmission through contaminated water becomes easy as they drink alongside each other, or via physical contact, as animals rub close to one another.

When it comes to the most virulent viral infections, the veterinary experts warn that from 30-70 per cent of infected animals will often die as a result. CCPP is one of the most contagious respiratory diseases in sheep and goats and spreads very fast in this way in herds, especially during dry spells and seasons when the animals must compete for pasture and water, often resulting in them drinking and feeding very close together and making any problem much worse.

The Isiolo project was initially aimed at building resilience in the face of local, regional and global climate change and, through its success over the past 18 months, other satellite labs are set to provide similar services for pastoral/nomadic herds, herdsmen and women in other arid regions of Kenya.

Uiseb set to take pig farming to a new level

PIG FARMING HAS immense growth potential in Namibia and farmers stand to benefit a great deal from the introduction of a Pork Market Share Promotion Scheme implemented recently.

One man on a mission to expand pig farming in Namibia is Amon Uiseb, owner of White Meat Training Solutions in Windhoek. With vast experience in piggery, Uiseb has taken it upon himself to train and equip interested farmers with an intensive training course due to start in December. While the Pork Market Share Promotion Scheme has reaped positive results since 2012, Uiseb is of the opinion that better trained and better equipped small scale farmers can take pig farming to the highest level and contribute significantly to this ever-growing market.

He said that the scheme protects every farmer in the pig industry, and the future looks bright with this scheme for local pig farmers. The aim of the scheme is to establish an interim intervention to grow the pork industry; ensure economic viability and the future co-existence of pig production and processing sectors; and protect farmers against external influences such as low price imports.

Providing the right nutrient at the right time for coffee is one of the most complex crop fertilisation programmes facing tropical farmers and growers. Classic fertiliser programmes involving the application of solid formulations to soil has a two-fold function in coffee. Dr Terry Mabbett talked to Omex to see how the company meets the plant nutritional needs of coffee.

Synchronising soluble nutrients with growth cycles in coffee

THE PRIMARY PURPOSE is to furnish and fulfil nutrient needs of coffee plants as they graduate from the nursery into the field to achieve maturity and the first full crop of coffee berries. And from there on to satisfy the changing needs of mature trees as they pass through the growth cycle in successive years.

This must be done without causing imbalance in either soil structure or fertility and crucially soil pH (acidity/alkalinity) which is central to maintaining the availability of all essential nutrients at all times to the coffee plant. Crucial and critical in this respect is:

- The ratio of potassium (K) to calcium (Ca), in turn linked to the availability status of soil magnesium (Mg)
- The nitrogen (N) to phosphorous (P) ratio
- And at plant tissue level the ratio of carbohydrate to nitrogen

For this reason, the use of completely soluble nutrients through foliar feeding has become an increasingly recognised and sought after alternative to soil-applied solid fertiliser. Nutrients enter the foliage and move into the plant cells for 'immediate' utilisation. As such they 'never' make contact with the soil and thus avoid any negative long term impact on soil structure and fertility.

The use of completely soluble nutrients through foliar feeding has become an increasingly recognised and sought after alternative to soil-applied solid fertiliser.

Sequential pattern of coffee growth

Coffee exhibits a sharp sequential pattern of growth and development reflected in dynamic critical changes within the growth cycle and accompanying seasonal phenology. Changing, sequential nutrient demand is correspondingly complex so it makes sense to use sprays of water-soluble nutrient formulations to meet the exacting and dynamic demand for nutrients.

Coffee is a beverage crop for which consumer acceptance is critically linked to taste and aroma (ie, flavour) in the cupped infusion and controlled by combinations of hundreds of different taste and aromaccompounds in the beans to give each coffee origin its signature flavour. Getting nutrients right in amounts, timing and balance is absolutely essential to ensure each origin has the full complement and right concentrations of flavour chemicals.

Complicating the coffee nutrition equation are the diverse conditions experienced by coffee. The crop is grown as different types of coffee and in a wide range of tropical regions each with its own 'peculiar' weather pattern. First and major distinction is between coffea arabica and coffea robusta, the former generally considered to be of higher and finer quality, but requiring more exact growing conditions and more 'tender loving care' in the tropical highlands where the majority of arabica coffee is grown.

Robusta coffee is the bigger of the two crops in world production terms with a tendency to tolerate a wider range of conditions in the generally hotter and harsher tropical lowlands where most robusta coffee is grown.

A high power, broad spectrum nutrient response is required to sustain coffee during periods of fast foliar growth and corresponding root flush. (Image: Omex)

Last but not least both arabica and robusta coffees grow in widely disparate tropical regions differentiated by the seasonal sequence and severity of wet and dry seasons, which has clear implications for coffee phenology and therefore coffee nutrition.

When taken in total and combination, these factors clearly show that provision of soluble nutrients sprayed onto coffee by foliar feeding is the logical and most sensible way forward for coffee crop nutrition.

Meeting the nutrient needs of coffee worldwide

A large number of companies supply soluble nutrients for coffee but relatively few can claim a product portfolio and recommendations based on in-depth, in-house research and development (R&D). Omex Agrifluids, based in the United Kingdom, is definitely one company that can lay claim to these credentials. The company's geographical activity in coffee is concentrated within the three great 'hubs' of coffee cultivation and production – East and Central Africa, Central and South America, and South and South East Asia.

Omex's strength is in the custom-design of its products, firstly for meeting the physiological demands and nutrient needs of coffee as it moves through the annual growth cycle. And secondly to satisfy the specific nutrient requirements of different coffee species (arabica and robusta) and commercially bred varieties around the coffee growing world as guided by those who cultivate them – the coffee growers.

So I went to meet with Alan Lowes (regional director) and Peter Prentis (export director) to find out how Omex meets the plant nutritional needs of coffee.

African coffee – high grown, fine quality Arabica in Kenya

I asked Alan Lowes about the Omex input into African coffee. "Africa grows a large number of different coffee origins, both

arabica and robusta, of which the high (altitude) grown arabica from Kenya is one of the most high profile of African coffee origins," said Alan.

The Kenyan coffee growth cycle can be conveniently 'kicked off' at the end of the 'long rains' which end in June with a twin burst of growth and development as bud differentiation above ground and a root flush below ground. "This 'double-barrelled' burst of growth and development activity requires a high power, broad spectrum nutrient application response," said Peter Prentis, adding how this is supplied and satisfied by two foliar applications of Omex Foliar 3X Emulsion, one in August followed by another at the end of September. This product clearly provides a powerful across-the-board boost in macronutrients with Nitrogen (N), Phosphorous (P) and Potassium (K) present at 24 per cent w/v, 24 per cent w/v and 18 per cent w/v, respectively.

Africa grows a large number of different coffee origins, of which arabica from Kenya is one of the most high profile of African coffee origins.

"This product is a fully water soluble emulsion fertiliser containing NPK, Magnesium (Mg) and the full complement of chelated essential micronutrients (trace elements)," said Alan Lowes. "Among the trace elements is Boron (B) at 0.031 per cent w/v and there will be a critical requirement for this trace element in the following weeks with the onset of flowering and fruit set at the start of October, he added. "The same goes for zinc which is present at 0.081 per cent w/v," said Peter Prentis, adding how these two micronutrients (B and Zn) together are the most important requirement for coffee during this approaching period of reproductive growth and development.

"Twin applications of Omex Sequential Two will carry coffee plants through the final stages of reproductive development including fruit (berry) filling, ripening and maturity," said Peter Prentis. (Image: Dr Terry Mabbett)

But what do these two trace elements actually do for the coffee plant. "Zinc is a key co-factor component of enzyme systems and boron has a direct and positive impact on flowering," said Alan Lowes. As the executive with 'hands-on' responsibility for the Omex

product portfolio in Africa, Alan Lowes went on to explain how the company has designed and developed a unique product for coffee in Kenya after the industry there approached Omex. Called 'Zibo' this 'two in one' product based on boron and zinc is applied as a foliar spray to mature coffee trees when the coffee growth cycle starts following the end of dry season.

Twin applications of Omex Foliar 3X Emulsion in August and September not only satisfy the requirements of bud differentiation and root flush occurring at this time but prepare the plants for the following flowering and fruit set stages.

Flowering and fruit set, which occur from October to December, are targeted with another twin application this time using Omex Sequential 2 with one application in November followed by another approximately one month later. Sequential 2 is another of Omex's powerful, broad spectrum (NPK, Mg and chelated trace elements) nutrient formulations. The power in this case is packed into its high potassium content (40 per cent w/v) to satisfy the correspondingly high and powerful demand for this particular macronutrient in the later stages of coffee reproductive growth and development.

Twin applications are necessary because flowering and fruit set are followed during December and January by a surge of vegetative growth which tails off from the end of January. And alongside a 'thinning period' called fruit drop before the final stages of fruit (berry) filling, ripening and maturity.

Overall this is clearly a high physiological stress time for coffee and reflected in falling carbohydrate reserve levels. But the activity is not over yet because there is yet another flush of root growth and development in March and April which will have already been targeted by another twin application (February and March) of Omex Foliar 3X Emulsion. This is to maintain macronutrient (NPK) levels and especially nitrogen and potassium required, respectively, for vegetative growth and reproductive development that occur simultaneously during this period.

Getting nutrient application for coffee right in amount, timing and balance is absolutely essential to ensure the processed coffee origin has the requisite complement and concentration of flavour chemicals. On-farm wet coffee processing in Africa shown here. (Image: Omex)

In the coffee nursery

Thus far we had only talked about coffee in the field, but there is another dimension which starts with coffee seedlings in the nursery through to transplanting into the field. So I asked Alan Lowes if Omex has products and recommendations specifically targeted at coffee plants in the nursery. "That we do," said Alan "as Omex Bio20". Omex Bio20 is a highly concentrated emulsion containing macronutrients, Mg and chelated trace elements, complemented by an organic extract derived from a single variety of seaweed (marine algae). The seaweed extract has proven beneficial effects for coffee plants through stimulation of root development to give newly establishing plants a sound start.

"We recommend application of Omex Bio20 to seedlings as a pre-transplant dip or a foliar spray" said Peter Prentis, adding how Omex Bio20 is well established in its ability to produce more root biomass and therefore maximum utilisation of soil water and the nutrients dissolved therein.

Thus far, Phosphorous (P) and calcium (Ca) had hardly been mentioned and ominously there is a largely negative link between these two nutrients at soil level. "Younger coffee provides the best responses to phosphorous," said Alan Lowes, adding how this fact is consistent with a major established role for phosphorous in promoting root growth and development. Peter Prentis emphasised how it is important to maintain high levels of phosphorous in the coffee leaves and coffee berries to ensure high quality coffee beans. "The big problem for phosphorous is at soil level," said Peter Prentis. Phosphorous may be plentiful but is 'locked up' by correspondingly high levels of calcium and therefore becomes unavailable for uptake by the roots. Soil zinc is affected in the same way," he said.

"So is there not a potentially important role for a dedicated soluble calcium product for coffee which by-passes the soil?" I asked. "Yes", said Alan Lowes, "as Omex CalMax (22.5 per cent w/v calcium – Ca). And as regards phosphorous, we have another 'Sequential' product called 'Omex Sequential 1'. In Sequential 2 potassium has the highest concentration at 40 per cent w/v, whereas phosphorous occupies the 40 per cent w/v top spot in Omex Sequential 1.

I came away wondering how many other products there were in the Omex portfolio with a dedication to coffee. Browsing through the Omex brochure it turned out to be quite a few, including Omex Foliar Boron, Omex Magnesium Plus and Omex K41 a high potassium product.

Oil palm could be economically beneficial for African countries, but they must forge their own socially and environmentally responsible expansion programmes.

Oil palm in Africa: an opportunity too good to miss?

AFTER BECOMING SOUTHEAST Asia's second-largest crop, oil palm is heading to Africa on an industrial scale, and a wave of high-profile investments have raised concerns on the environmental impacts of this expansion. Understanding the opportunities for oil palm in the African context is key to ensuring that oil-palm expansion develops more sustainably.

The total area planted with oil palm has increased rapidly worldwide in the last 30 years, from four million hectares (ha) in the 1980s to more than 17mn in 2013. For the past decade, oil palm has therefore been a hot topic of debate in academic and non-academic circles.

Oil palm (or Elaesis guineensis) originated from the coastal swamplands and freshwater riverines of Central and West Africa.

Environmental concerns over profitable investments

Despite the constant bad press, given the potential environmental impacts of oil-palm expansion on forests and biodiversity, interest in oil palm is increasing from governments and private sectors in other regions, such as Western and Central Africa. They argue that

because of its high profitability, one of the highest in the global agro-commodity sector, oil palm can provide much-needed investments in infrastructure, public services and job opportunities in rural areas, many of which are not suitable for other crops.

However, numerous conservation and environmental organisations, as well as academics, have raised concerns regarding the wave of oil-palm investments on the African continent, due to the history of environmental degradation caused by oil-palm expansion in Southeast Asia. The situation is more worrying because of the limited efficacy of many of the current sustainability initiatives in the oil-palm industry.

Oil palm can provide much-needed investments in infrastructure, public services and job opportunities in rural areas.

Oil palm's homecoming to Africa

Large-scale agriculture of this crop was first developed in Southeast Asia, where the international palm-oil trade now plays a central role in the national economies of Malaysia and Indonesia. The oil-palm tree, however, is native to western Africa, where it was first domesticated 5,000 years ago. It is reported that considerable areas exist on this continent, but oil-palm production there remains mostly artisanal and for local consumption. This situation, however, may be a key opportunity for the sustainable development of the oil-palm sector in this region.

For instance, let's take Nigeria, where up to two million ha are reported by the Food and Agriculture Organization (FAO) to be planted with oil palm. This is a considerable area, and even though it may not be comparable to the seven million ha planted in Indonesia, it is still globally significant. The interesting fact is that for Nigeria, the FAO reports an average yield of 2.5 tonnes per ha, which is equivalent to 15 per cent of the average yield obtained by producers in Southeast Asia. This situation is not unique to Nigeria.

Countries in Africa seem to have 50 per cent lower oil-palm yields than their Southeast Asian or South American counterparts.

Overall, countries in Africa seem to have 50 per cent lower oil-palm yields than their Southeast Asian or South American counterparts, even though, in theory, their yield potential should be approximately equivalent. Although these figures are probably very coarse, they indicate that there is lot of potential to increase oil-palm production by closing this yield gap – an opportunity that may allow the oil-palm industry in Africa to realise its production aspirations while minimising its environmental impact.

Filling in the knowledge gaps

To realise this opportunity, there are some knowledge gaps that need to be addressed. The first step is the characterisation of existing oil-palm plantations: mapping their locations and quantifying their extension and production levels. Secondly, to estimate the real potential for yield improvement, we need to understand current production systems in these areas; this can be done by assessing the suitability of the land to this crop, the different farmers' management practices and the role of this crop in their livelihoods. Filling in these knowledge gaps will provide the foundation for developing adequate policy frameworks that can meet production targets and benefit existing producers.

Mapping current locations of oil-palm plantations and using sustainability criteria to assess the suitability of the land for oil-palm expansion can facilitate future spatial plans for oil-palm expansion, and minimise its impact on habitats that provide important ecosystem services and act as refuges for biodiversity.

Oil palm might indeed be economically beneficial for African countries, but perhaps the most valuable opportunity for oil-palm expansion on this continent is for nations to forge their own socially and environmentally responsible expansion programmes, tailored to their climatic conditions, agricultural systems, livelihood aspirations, and biophysical landscapes. This is an opportunity that many of their counterparts in Southeast Asia missed.

John Garcia-Ulloa, ETH Zurich

Efficiency, reliability and commitment - Bagtech's priorities

BASED IN DURBAN, Bagtech International has over 25 years' experience in agribusiness across the African continent. Nowadays, Bagtech is focused on offering a supply chain management service and developing custom-made equipment for handling bulk solutions for fertiliser. The company offers advanced technology through an innovative management system in partnership with Festo in order to provide accurate information to their clients. The company's main goal is to offer their clients all their expertise in fertilisers and agro-industry by providing consultancy, equipment and services around Africa.

As far as products are concerned, Bagtech can design in-house fertiliser blending plants from very small capacities to over 100 tons per hour, coating plants, bagging equipment from 10 kg to one ton, screening equipment and any other compact plant as per customer needs.

The Bagtech team actively participates at national and international market level in order to develop new technologies for the African continent.

Bagtech's bagging machine.

"We are a partner to our customers, not only a supplier. We offer technical visits to the customer's facility to understand the client's needs and their business before selling any equipment or services. Our goal is to bring solutions to their business, from feasibility study until commissioning plant at the customer's site," said Fred Coelho, managing director of Bagtech. Bagtech works 24/7 to bring their clients the best solutions at any given time and when it is needed.

Bagtech offers its own technology in fertiliser equipment - always focusing on continuous improvements for customer benefit. The company has developed auto correction algorithms which detect changes of flow characteristics in fertilisers due to changes in density or moisture. Advanced and intelligent monitoring systems can assist plant operators with the control of the plant and supply critical information when needed, accessible from around the world. Highly accurate Servo radial gates control the flow of fertilisers very precisely without causing any damage to the product.

The company has shown major growth in recent years, is currently employing more than 150 staff, having as its clients some of the major players in the fertiliser market, including ETG, TWK Agri, Yara, Kynoch and Toyota Tsusho which is launching the first fertiliser plant in Kenya this year.

Flower growers in Africa are increasingly selling direct to buyers, cutting out the middlemen at the Netherlands' centuries-old auction house co-op — the world's biggest for flowers — Reuters reports.

Flower growers in Africa gaining dominance in global trade

GLOBAL FLORICULTURE EXPORTS have nearly doubled in value over the past decade to reach US$20.6bn per year, and Africa is enjoying a bigger piece of the pie than ever before. Kenyan growers have particularly good cause for optimism this year. Having more than doubled their share of global exports to seven per cent over the past decade – amounting to 120,000 tonnes of flowers annually – the sector received a boost, when its duty-free and quota-free access to the European Union was restored under an Economic Partnership Agreement with the East African Community. That will keep costs down for exporters, contributing to projected earnings of US$546mn in 2015.

Energy and labour costs are the main reasons that the roses are grown in Africa these days; cheaper roses are mostly grown in Africa and sold directly to big retailers such as the German discount chain Lidl or British supermarket giant Tesco, which prefer fixed contracts to the daily fluctuation of the auction clock.

A worker at the Maridaidi Farm in Naivasha carrying roses for export to Europe. (Image: CNN)

Challenging times for the Netherlands

Such changes are challenging the status of the Netherlands as the centre of the flower trade. The flower industry is more than five per cent of the Netherlands' gross domestic product.

Kenya and Ethiopia top sub-Saharan Africa flower exports, earning US$699mn and US$610mn, respectively in 2014.

Maintaining low temperatures is vital for longevity.

Rwanda has set a target of US$104mn annually from floriculture and horticulture by 2018, up from current US$10mn. This is achievable given the increasing number of investors in Rwandan floriculture, said Tony Nsanganira, minister of agriculture.

Japan is trying to expand floriculture in sub-Saharan Africa by experimenting with technology using specific flowers from Japan in Rwanda, especially those with high prices on the international market. This contributes to foreign exchange earnings, NewTimes of Rwanda reported.

Ethiopian floriculture started with one hectare of open field summer flowers in 1995, and today it ranks among the top five global suppliers, second only to Kenya among African producers and exporters. The sector is responsible for 75,000 direct jobs, most done by women.

Tsegaye Abebe, the farmer who planted the first land dedicated for flower exports, went on to found the Ethiopian Horticulture Producer Exporters Association. The first load of Ethiopian flowers "filled just 19 tonnes of the 36 tonne capacity of that Boeing 757," he told Daily Maverick. "Then we filled it, increased aircraft numbers, and later moved over to a 75 tonne capacity MD11. Today we use two 777s daily, with three at peak, to Europe. In all it's about 300 tonnes average a day over the course of the year."

Kenya has established a dedicated terminal at Jomo Kenyatta International Airport to support its flower business, DailyMaverick reported. Kenya's cut-flower exports increased 12-fold to 137,000 tonnes between 1988 and 2014, and it now supplies a third of the EU's imports. It's the world's third-largest flower exporter, with 500,000 Kenyans earning a living or supported by the sector.

While the figures are encouraging, growth in the East African sector is putting strain on existing supply chains. Like any other perishable product, flowers have a shelf life. When harvested, packaged and transported in optimal conditions, many can last up to 14 days. But maintaining low temperatures is vital for longevity, and airborne flower shipments from Nairobi can arrive at Amsterdam anywhere between 10 and 35°C – well above their ideal, low-single-digit transit conditions.

"Once palletised, once you put these flowers tightly together, it's a living product, it's breathing, it's building its carbohydrates, and heat is a waste product," Jeroen van der Hulst, managing director of quality control company FlowerWatch, told the Air Cargo Africa conference in Johannesburg.

Noting that quality controllers at Dutch flower auctions will lower prices by up to 50 per cent for damaged goods, he said that bent stems, uneven openings and a fungal infection known as Botrytis cinerea all directly impact sales values. Poor temperature control is the main culprit.

"The behaviour of the product inside [a heated aircraft pallet] is no different to what happens inside a compost heap," Van der Hulst warned.

Identifying that temperature control is a priority for the industry is, however, the easy part. Convincing stakeholders across the supply chain to pull their weight – and open their wallets – is much harder.

Kenya is the world's third-largest flower exporter. (Image: FLowerweb)

However, there is another option. Advances in sea freight technology mean that flowers can now be sent around the world in ocean reefer containers set to precisely 0.6°C.

Although seaborne journeys from Kenya to western Europe take 28-30 days, these near-freezing temperatures place flowers in a suspended state that, according to Van der Hulst, allows the goods to arrive in "as good as, or better, [condition] than air freight."

FloraHolland CEO Vos remains confident. "Most producers grow one type of flower, and if you're a consumer, you want a bouquet," he told Reuters. "There will always be a need for a hub."

FloraHolland is making changes to an auction system that dates back more than 100 years, with plans to invest up to US$101.57mn in the next five years and develop a 24-hour online dealing platform.

It will be like "a Tinder or AirBNB" for flowers, Vos said.

Drone technology has accelerated the planning, design and construction of rice irrigation systems in Nigeria.

UAVs to help Africa's rice irrigation systems

DRONE TECHNOLOGY PROVIDES agriculturists with a cost-effective method of infrastructure planning. In Nigeria it has accelerated the planning, design and construction of rice irrigation systems.

The growmoreX team of the London-based company GMX Consultancy, which runs a drone-based farming application service, was in Nigeria to do a preliminary assessment for the development of a 3,000 ha irrigated rice farm. The farm will be built on land that was acquired in a long term lease from the local government's irrigation authority. The aim of the project was to survey and map a total of 7,500 ha in preparation of planning and building the irrigation infrastructure for the rice fields.

A manned aircraft could have done the job, but at a huge cost. The alternative is unmanned aerial vehicle (UAV) technology. The project site was in a sparsely populated area, located approximately 700 km away from the capital Abuja with limited access to roads, electricity, clean water, and other amenities. Local livelihoods here are mainly based on small-scale agriculture. Crops are grown annually during the rainy season, and include sorghum, rice and beans. Tomatoes are grown during the dry season using pump-fed irrigation.

As this project has shown, UAV technology could provide agriculturists with a cost-effective method of irrigation infrastructure planning.

First flight

A fixed-wing UAV, which was imported directly from the US with assistance from a local project partner, was used for the first flight. When all the checks were completed, the team set the UAV's navigation system to 'automatic'. Then the UAV's propeller was turning and it was launched into the air, witnessed by a crowd of people who had gathered to watch the first flight. The mission had begun.

It took the UAV only a few minutes to reach the optimal surveying altitude of 150 metres above ground level. Once at this altitude, it began to fly in a specific pattern, shooting images automatically as it went.

Advance planning

After the UAV landed safely the camera was checked immediately. The photos looked sharp and beautiful. There were a lot of them: during the 55-minute flight, the drone took overlapping photos of nearly 300 ha of land.

The UAV was able to fly for roughly four hours a day when the sun cast the fewest shadows. This meant that the team was able to map about 1,000 ha in a single day. That is fast, especially if the harsh terrain and working conditions with high temperatures are considered.

To operate an UAV requires advance planning. The researchers made sure no specific regulations barred the team from using the UAV. The local Emir, the village chief and a military airport, located about 100 km from the project site, were informed of the plans to make use of an UAV. Fortunately, the local authorities welcomed the new technology. There was only one condition: the Emir insisted to do a flyover of his village, so that his people could see both the drone and the pictures it would take.

Wonderful as the village flyover was, the main objective was to begin planning the rice farm's irrigation infrastructure. For the preliminary investigation, the researchers needed to create a map at a scale of 1:2,000 (one centimetre on the map represents 20 metres). With such a map the research team could make informed decisions on the best layout of the paddy fields, the irrigation and drainage systems.

Based on the limited information from previous visits to the site, it was hypothesised that it would have been able to lay out the rice fields as large, rectangular basins. Large earth moving and farming machinery would have been needed to build and cultivate those basins. Paddy fields for rice cultivation need careful water management as water levels impact weed and nutrient distribution. This meant that for every 100 metres, half a metre of soil at the top of the field had to be removed to raise its lower end during the levelling process.

However, the drone survey proved the hypothesis wrong. Although it was certainly true that parts of the project site were flat, most of the terrain was an undulating landscape.

The sloping terrain combined with a thin top soil layer led the team of researchers to radically change their designed hypothesis, away from large rectangular basins and towards long, narrow fields that would follow the terrain. But this change also meant that a very different irrigation system design was necessary.

Avoiding unnecessary costs

By using data required from UAV technology, agricultural planners can now easier avoid incorrect infrastructural planning. This information also makes it easier to organise the right procurement of machinery, avoiding unnecessary large upfront investments that can break a project if they are improperly planned.

Water is the deciding factor in Africa's rice self-sufficiency. Most rice cultivation is rain-fed in Africa. The lack of irrigation infrastructure is a major obstacle to increase rice production on the continent. However, UAV technology can potentially accelerate the planning, design and construction of Africa's irrigation infrastructure. As this project has shown, UAV technology could provide agriculturists with a cost-effective method of irrigation infrastructure planning.

Also, after the farm planning stage, UAVs could be useful for farmers to estimate more accurately how much fertiliser and planting materials they will need during the growing season. Once crops have been planted, UAVs equipped with special sensors can monitor their growth.

With the help of agricultural UAVs, Africa can leapfrog into the quickly-advancing area of precision agriculture – just as African mobile phone companies bypassed traditional fixed line infrastructure to create an innovative mobile finance system.

The original article was written by Quan Le for the ICT Development Organisation

A PREFERRED GLOBAL PLAYER OFFERS NEW TECHNOLOGIES FOR

Co - Generation Plants
Parboiling & Dryer
Elite Series Rice Milling Plants
Sorting and Grading plants
Solution for Yield Control
Silica Extraction from Rice Husk Ash

PARBOILING DRYER

MILLTEC supplies a complete package of Parboiling & Dryer plant in SS for higher standard of hygenic and world class processing.

"Complete drying solution from the experts in the business"

WHEAT PROCESSING

TURNKEY SOLUTIONS

MILLTEC Offers end to end solution to optimize the use of man power and project cost by supporting the clients with detailed Engineering with erection, supervision & commissioning

"Ranging 10TPH to 12TPH"

MAIZE MILLING

YIELD MANAGEMENT

Flow Balancer controls the throughout & flow measurer measures the output.These are PLC controlled machines for precise operation

"These are the PLC based & computer connected"

PULSE PROCESSING

CO-GENERATION

MILLTEC supplies a complete package of co-generation plant comprising of boiler, turbine, gear box, alternator, control panel & accessories

"Hydro-mechanical governor for continuous constant speed operation"

SEEDS PROCESSING

SILICA EXTRACTION

This will enable Rice millers to generate additional income by utilizing generated ash thereby eliminating disposal problem of the ash.

"Silica from Rice Husk Ash is bio-silica and non toxic."

COLOR SORTER

State of the art technology at affordable price with 2 years warranty

"Complete sorting solution from the experts in the business"

MILLTEC

ISO 9001:2008 / ISO 14001:2004

MILLTEC Machinery Pvt. Ltd
No. 51/A , 1st Phase, KIADB Indl Area
Bommasandra, Bangalore -560099
www.milltecmachinery.com

DOWNLOAD APP

TEL: +91-80-28016666+91-80-27831128
+91 - 9108459241
Email: marketing@milltecmachinery.com
exports2@milltecmachinery.com

www.facebook.com/milltecmachinerypvtltd | www.twitter.com/milltecmmpl | www.linkedin.com/company/milltec-machinery-private-limited

In spite of increasing competition from round and large square balers, there is still a strong demand in Africa for machines making small, traditional square bales. Michael Williams reports.

Small square bales still popular in Africa

FIGURES AVAILABLE FROM Case IH show that machines for making small bales currently average about 58 per cent of new baler sales throughout Africa, falling to around 21 per cent in South Africa where round and large square balers are well established.

The Case IH prediction is that small balers will continue to be popular in most African countries for many years. Although large bales – both round and square - offer important advantages on big farms that have mechanical handling equipment available, the fact that the traditional small square bales can be handled manually is ideal for many small farms which lack specialised lifting equipment.

The Case IH baler range includes three SB series small square baler models, all with a 36x46 cm bale chamber cross section and with bale length adjustment from 31 to 132 cm. Pick-up reel widths are 1.65 metres for the SB521 and SB531 models, increasing to 1.91 metres for the SB541 at the top of the range. The SB521 has a flow type feed system with six tines while the top models have a rotary feeder plus packer, and all SB balers use gear-driven knotters for reliability.

Sales of round balers are increasing in many African countries and particularly in South Africa.

Large square balers account for about five per cent of new baler sales throughout Africa, according to Case IH. The three LB series large baler models in the Case IH range have 1.98 or 2.23 metre pick-up widths and bale sizes are from 80x90 cm to 120x90 cm cross section. Options available for LB balers include automatic weight measurement for each bale, and a sensor can be added to check the moisture content of incoming crop material. Sales of round balers are increasing in many African countries and particularly in South Africa, and Case IH offers six models with both fixed and variable chamber versions available. Pick-up widths up to 2.35 metres are available and the maximum bale diameter for variable chamber models is 1.8 metres.

Baling sugar cane residue with a Case IH LB series large square baler.

A different approach to small baler design is offered by Massey Ferguson's American built MF1840 model, with the pick-up reel directly behind the tractor drawbar to give an in-line layout similar to large square or round balers.

Advantages claimed for the in-line design include a straight-through crop flow without the right-angle turns needed with the usual offset pick-up position, and the overall width of the baler is also reduced, avoiding adjustment between transport and work positions. The MF1840 has a 356x457 mm bale chamber cross section, the plunger speed is 100 strokes per minute and the pick-up width is 1.9 metres. The twine box holds 10 spools, said to be sufficient for a full day's baling.

Massey Ferguson also offers the five-model MF2200 range of big square balers with chamber sizes from 80x90 cm to 120x130 cm. Single and tandem axle versions are available, and the range includes the 2270XD model designed to produce heavier bales by achieving a 15 to 20 per cent increase in bale density.

Big advances in handling and transport efficiency offered by big square bales open new possibilities for African agriculture, according to Sergiy Demko, Massey Ferguson harvest machinery marketing manager for Africa and the Middle East. MF2200 balers in Egypt and other North African countries are baling forage crops for export to livestock farms in the Middle East, and South Africa is also exporting bales made by the MF2200 series. Big square bales can also be used for the residues from crops such as sugar cane, offering the potential to use this type of bulky crop material as fuel for generating electricity.

The biggest selling Claas balers in African countries are the small square Markant models and the Rollant 340 round baler, and both are said to be leaders in their sectors of the market. The Markant 55 and 65 models both make 36x46 cm bales and both use a ram operating at 93 strokes per minute to form the bales, with a combination of slip clutch and shearbolt protection. Pick-up widths are 1.65 metres for the 55 model and 1.85 metres for the 65, twine box capacities are six and eight spools and the tractor recommendations are from 45 and 60 hp respectively.

Claas Rollant series balers are said to be the biggest selling silage balers in the world, but in north African countries they are used mainly for baling hay and straw, while maize and sugar cane residues are important in southern Africa. Specifications for the 340 model in the Rollant series include a 2.10 metre wide pick-up with four

ATG BETTER VALUE. SMARTER CHOICE.

www.atgtire.com

THE SMART CHOICE
FOR TRACTORS AND AGRICULTURAL MACHINES

ALLIANCE
ENGINEERED TO KEEP YOU AHEAD

Alliance is the world's leading brand in agriculture tires, specifically designed for a wide variety of machines. Robust design to deliver strong performance in tough conditions, a wide range and being the preferred choice of leading OE manufacturers make Alliance tires the smart choice for farmers.

WIDE RANGE OF SPECIALITY TIRES FOR

2WD TRACTOR | 4WD TRACTOR | MFWA | TRAILER | COMBINE HARVESTER | SPRAYER | FORESTRY TRACTOR | FOREST-TRAILER

Over 60 Designs and 800 SKUs

POPULAR AGRI DESIGNS

- FarmPRO 324
- FarmPRO Radial (846 & 842)
- 882
- FarmPRO 327
- 320
- 328 and more

Contact: contact@atgtire.com, +91 22395 79600 ext. 629

tine bars, the bale chamber has 16 rollers and is 1.2m wide with 1.25 metre diameter and the minimum power requirement is 75hp. Net wrapping and/or twine wrap versions are available, and a Rotocut version with 14 knives is offered for customers needing crop chopping to increase bale density.

Comprehensive ranges from John Deere

John Deere offers one of the most comprehensive baler ranges with all three of the main baler types available. In African countries their biggest selling models include the 400 series fixed chamber round balers and particularly the F440M model which is designed as a general purpose machine for a wide range of crop applications and with a capacity suitable for medium range work loads from 1,000 to 3,000 bales per year.

The F440M was introduced in 2013, replacing the previous 623 model. Major design changes include a new driveline and rotor; the shielding has been strengthened and there are a number of other improvements including bigger, wider tyres. The pick-up reel width is two metres, the MultiCrop bale chamber has seven ribbed rollers, net wrapping is available and cartridge type automatic greasing is standard.

Balers from the Lely company based in The Netherlands are currently available in North Africa, including Egypt, and also in South Africa, but there are plans to expand the distribution into other African markets. The biggest selling balers are in the Welger AP series, a four-model range of small square balers that are popular because the bales can be handled manually and because the low power requirement suits the tractors available on many smaller farms. Bale cross sections are 36x48 or 36x49 cm, twine box capacities are from eight to 18 spools, pick-up reels are 1.62 or 1.99 metres wide and the reels have five tine rows with from 21 to 29 tines per row for more efficient crop collection.

Steady growth in the popularity of round balers is increasing demand for Lely's variable and fixed chamber Welger RP range. The most popular models are the fixed chamber RP205 and RP245 balers, both making 1.25 metre diameter bales and working with a 2.25 metre wide pick-up, but the 205 version does not have a crop chopping unit, while the 245 has a 13, 17 or 25-blade chopping facility.

The Markant 55 and 65 models are the biggest selling Claas balers in African countries.

Fixed diameter bale chamber popular in Africa

Most of the round balers sold in Africa have a fixed diameter bale chamber, and there is a smaller demand for variable chamber models. A special feature of the Comprima baler series from Krone is that it includes a fixed diameter chamber version, a semi-variable chamber with the bale diameter adjustable in 50 mm stages, plus a fully variable version. Bale diameters are 1.25 metres for the fixed model and up to 2.05 metres for the fully variable chamber.

The Comprima series is an example of Krone's innovative approach to baler design which includes the introduction of the first pick-up reels designed without a cam track, a feature that other baler companies are adopting. The cam-free design has fewer working parts to improve reliability, it allows faster reel speeds for improved crop collection efficiency and is also quieter than conventional pick-ups. Also on the list of Krone innovations is the BiG Pack baler that forms up to nine small square bales into a single big bale package. The result is a big bale that allows bulk handling efficiency but also offers the flexibility of manual handling.

The John Deere F440M fixed chamber round baler has a two metre wide pick-up reel.

The French built Kuhn baler range includes big square balers, but most of their sales in Africa are from their round baler range which includes the four-model FB series fixed chamber models. The entry level FB models are the 119 and 2130, both with a 120 cm width chamber making bales with 125 cm diameter. Both are available in net and/or twine wrapping versions, but the higher specification 2130 baler has a 2.3-metre wide pick-up instead of 1.67 metres; it is equipped with a drop-floor feature for blockage control and it can also be supplied with a crop chopping unit.

The pick-up reels on the FB119 and FB 2130 both have four tine bars, but this increases to five on the FB3130 and FB3135 balers. Another upgrade on the top models is having five tine bars instead of four on the pick-ups and the bale size and weight are increased by adding 2 cm to the chamber width.

New Holland offers a full range of big round and square balers, but their top selling model throughout Africa is easily the BC5060 in their small square baler series. One of the attractions of the 5060 model is that it can be used with a 40 hp tractor compared with the 50 hp needed for the 5070 model, which has a higher specification. Both models have a 36x46 cm bale chamber size and the bale length is adjustable between 31 and 132 cm, but a significant difference is the 1.8 metre pick-up reel width on the 3060 compared with 2.0 metres for the 3070.

First introduced in 2014, the specification improvements on the latest Roll-Belt series round balers from New Holland are said to boost output by up to 20 per cent while offering up to five per cent density increase. The entry level 450 models have a bale chamber 118 cm wide and with diameter adjustable from 91.5 to 152 cm, and the minimum tractor requirement is only 40 hp. There is a choice of pick-up reels with five tine bars, and crop chopping options are available.

Drip irrigation is the most common irrigation system used for fertigation, although not because it is easy to carry out. Dr Terry Mabbett reports.

Fertigation for fresh vegetables

FERTIGATION IS A well-chosen name that perfectly describes fertiliser being conveyed, applied and provided to crops as soluble nutrients in the irrigation water. Any system of irrigation can be used to apply soluble fertiliser, but, in practice and for reasons of accuracy and economy, the system used in fresh market vegetable production is drip irrigation, also known as micro irrigation or trickle irrigation. These are also perfect names to describe what essentially is the slow and measured application of water ,and targeted directly on the soil around the crop and therefore at the root zone. Drip irrigation is the most common irrigation system used for fertigation. Either used on its own or to apply soluble nutrients by fertigation is the most demanding in terms of knowledge and expertise.

Fertigation via drip irrigation is often used in conjunction with white plastic mulch to reflect heat and light, minimise evaporation of water from the soil and to exclude weed growth. (Image: Omex)

A well-maintained and effective drip irrigation system is a must for successful fertigation.

There are many good reasons to harness the power of drip irrigation for conveying nutrients to growing crops, but the main one one is that the technique typically uses less than half the water consumed by overhead and furrow irrigation. Indeed drip irrigation efficiency exceeds 90 per cent, whereas a sprinkler system will struggle to achieve a 60 per cent efficiency of water use.

The exceptionally high efficiency afforded by drip irrigation is down to water soaking into the soil before it can evaporate or run off, and because water is only applied to the area where it is required (near the crop and in the root zone), rather than being splashed and spread over the entire field. And in drier climates, where an increasing amount of the world's vegetable production is now taking place, application of irrigation water to the crop zone rather than the entire field mitigates against weed growth and competition between the rows of crop plants.

An additional advantage offered by drip irrigation is a reduction in water contact with aerial parts of the crop including leaves, stems, and fruit. This will minimise the extent and duration of wet crop-surface conditions that will invariably favour infection by fungal and bacterial pathogens with resulting disease development. Last but not least, vegetable growers plagued with variable water resources will benefit from the lower pressures (8–10 psi at the drip line) required for the operation of a drip irrigation system. A well-maintained and effective drip irrigation system is a must for successful fertigation.

Fertigation for all seasons

Drip irrigation is the vehicle for nutrient delivery, but what about fertigation in its entirety? Fertiliser delivered as nutrients in water soluble form is immediately available for plant uptake and utilisation. This, in turn, allows farmers and growers to exert more control over nutrient availability to the crop, and is the key factor which maximises the efficient use of fertilisers. Nutrients can thus be applied on a daily, weekly, or less frequent basis as necessary ,depending on the overall nutrient management plan for the crop.

When nutrients are applied in this way and shortly before they are needed, the opportunities for loss of nutrients from the root zone are greatly reduced. This is especially important in high rainfall locations and for nutrients like nitrate that leach very readily. Compared to the more traditional methods of applying fertiliser throughout the year and which require tractors or heavy foot traffic, fertigation will minimise potential for and risk of soil compaction. and is less restricted by weather conditions.

Fertigation in overall nutrient planning

Where used, fertigation should be an integral part of an overall nutrient management plan for the individual crop or field. The mass (weight) of nutrients delivered to the crop by fertigation when added to other applications of fertiliser should not exceed 100 per cent of the planned total nutrient application rate.

A range of numerical units can be used to describe the mass of nutrients applied to or required by a crop over a growing season with g/plant, g/unit area (eg, g or kg/sq m and g or kg/linear m of plant bed as examples). When area measurements such as square metres (sq m) are used, the area considered is usually the entire cropped section of the field, and not just the area of the plant beds or the crop rows.

That said, for permanent plant beds or very widely spaced beds, the area of the bed can more reasonably be considered

when calculating the quantity of nutrients required. And it is more practical and helpful to consider nutrients applied in irrigation water in the same units as those used for other methods of nutrient application. This makes for a much clearer picture when assessing how fertigation fits into the overall nutrient management plan.

For instance, a tomato producer may know that his/her crop, growing together with a leguminous cover crop, will require in total about 50 kg of nitrogen/unit area over the growing season. He estimates that the established legume cover crop will supply about 25 kg of this amount, thus leaving a further 25 kg of nitrogen to be applied via fertigation. That 25 kg/unit area could be applied over a range of time/mass scales including five kg/week for five weeks or seven kg/week (equivalent to one kg/day) over a longer period of seven weeks.

In some instances, including field and greenhouse vegetable growing systems, nutrient application rates are more commonly based on the concentration of nutrients in the solution. For example, tomato seedlings in a greenhouse may be supplied via fertigation with a solution containing 75 ppm (parts per million) nitrogen, or pac choi (Chinese cabbage) grown in the field may be fertigated with 150 ppm nitrogen. This type of terminology is more commonly employed in container production and when fertiliser is provided at every, or almost every, irrigation. However, the nutrient concentration will not furnish information about the mass applied per unit area or per plant unless the total volume of water applied is also known.

Nutrient uptake will generally parallel crop growth.

Application scheduling for fertigation

The importance of having nutrients available in the soil when the plant needs them is clearly an advantage and well established. Equally well known and established is that nutrient uptake will generally parallel crop growth, which essentially means that a fast growing crop has a higher nutrient uptake and utilisation. It therefore makes sense to have most of the nutrients needed by the crop in the soil by the time the crop begins its period of rapid growth, and to apply the rest during the actual period of rapid growth.

If growth slows down or even stops, whether due to environmental conditions or simply because the crop is nearing harvest and plants are beginning to senesce, then nutrient application and provision can be cut down or even curtailed as appropriate. Construction of a chart showing each week of crop production from planting through to harvest may help in fertiliser application planning. By indicating the approximate size of the crop at the beginning of each week, the chart will allow scheduled fertiliser applications to take into account the timing of crop growth.

Fertiliser should be applied during the final stages of irrigation because this will ensure that most of the applied fertiliser is retained in the root zone. Sufficient time should be allowed after the end of fertigation for 'pure' water to flow through the system to flush out and remove any remaining particles that might clog the emitters.

Fertigation via drip irrigation is a favourite for greenhouse production of fresh salad vegetables with lettuce shown here. (Image: Omex)

Key information is required to determine when is the most appropriate time to begin injecting fertiliser into the irrigation system, with the first being the length of time taken for the water to reach those emitters which are farthest from the point of injection. This should be calculated and noted during the first irrigation application.

Secondly, is to determine how long it takes to inject the quantity of fertiliser required by the crop. This can be calculated by timing an actual injection or by calculations based on the volume of solution to be injected and flow rates of the irrigation system and pump. In this context the injection of a natural food colouring agent may be helpful as a marker in monitoring nutrient flow. An electrical conductivity (EC) meter may also be used to monitor solution at the emitters.

The operator may now calculate that moment in time before the end of irrigation to begin injecting fertiliser. This is achieved by adding:

- Time taken for water to move from injection point to furthest emitter
- Time required to inject fertiliser solution into the irrigation system
- Time taken for last portion of fertiliser solution to reach the furthest emitter
- Time required to flush the system with 'pure' water

Therefore if it takes 30 minutes for water to travel from the injection point to the furthest emitter, 60 minutes to inject the solution, 30 minutes for the last portion of fertiliser to reach the furthest emitter and another 30 minutes to flush the system, then fertigation should begin 2.5 hours before the end of the irrigation event.

Nutrients must be completely flushed out of the irrigation system after injection to keep drip lines clean and to prevent clogging. If clogging becomes a problem, it may help to open the ends of the laterals and flush water through the drip tape and out of the ends of the lines periodically during the season.

Delivery and distribution in the soil

Nutrients delivered through drip irrigation via fertigation are distributed in a pattern that conforms to the wetting pattern of the soil. Soil wetting patterns are typically hemispherical or oval in shape. The widest portion of wetted soil will correspond with the position of the emitter with the deepest point of soil wetness directly below the emitter. The distance that water moves horizontally in the soil and the wetting depth are both dependent on soil texture, irrigation rate, and irrigation duration. Irrigation rate and duration should be based on crop water needs.

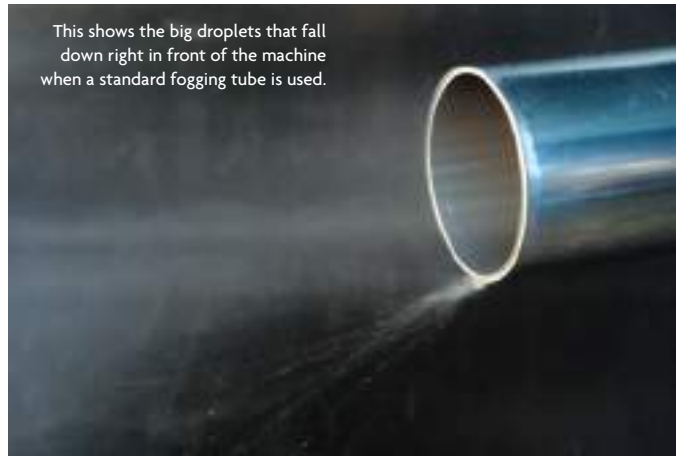
Dr Terry Mabbett

Swingfog machines equipped with the high performance fogging tube permit a fast and efficient application of water-based fogging mixtures at high flow rates.

Swingtec's patented high-performance fogging tube

SWINGFOG THERMAL FOG generators, like all other brands, were originally developed for the specification of oil-based fogging mixture and were mainly used for vector and pest control measures. Using oil-based fogging mixtures with Swingfog machines, a rather good droplet spectrum of droplets between 0 and 40µm is achieved. 80 to 90 per cent of the droplets are in the range of 10 to 25 µm and fulfill the actual requirements of the World Health Organisation specifying a VMD (Volume Meridian Diameter) of less than 30 µm.

In agricultural pest control measures almost all chemical preparations are water-based and the chemical has to be mixed with water. Because of the high surface tension of water, it is not at all possible to achieve with water-based fogging mixtures, a similar good droplet spectrum at reasonable high flow rates, unless a considerable portion of special carriers is added.



This shows the big droplets that fall down right in front of the machine when a standard fogging tube is used.

Using water-based fogging mixtures at high flow rates and without adding special carriers, all brands of thermal foggers, including Swingfog machines, are generating a rather wide droplet spectrum, and a high number of bigger droplets are falling down in front of the machines, resulting in a puddle of unfogged fogging liquid, That means that a considerable amount of the chemical preparation does not reach the target, causing pollution and a waste of expensive chemicals.

With its patented high performance fogging tube, which is available for all Swingfog machines, Swingtec has solved this problem.

Using the high performance fogging tube, and, without adding special carriers, the Swingfog SN 50 types allow the application of water-based fogging mixtures with flow rates of up to 32 litres per hour and with Swingfog SN 81 and SN 101 machines up to 62 and respectively 67 litres per hour. A really good droplet spectrum is generated, which is comparable with the excellent droplet spectrum of oil-based fogging mixtures. No big droplets fall down in front of the machine.

Swingfog in a banana plantation.

In recent years, in agriculture, and also in public health, more and more water-based chemical preparations are offered for vector and pest control. Swingfog machines equipped with the high performance fogging tube permit a fast and efficient application of water-based fogging mixtures at high flow rates, not only in agriculture but also for vector and pest control measures. This advanced technology saves costly carriers like diesel oil or kerosene and, moreover, avoids environmental pollution caused by oily carriers.

Looking after grain is taken very seriously by Bentall Rowlands

BENTALL ROWLANDS IS one of the few silo manufacturers who have obtained the CE mark. This means that from the first point of contact, to the delivery of the finished product, each step is mapped out. Having a clear and precise paper trail is only a small part of the process. Every structure produced by the company is designed by an engineer to current codes; this ensures that the equipment is fit for purpose. Under CE, the manufacturing of the product is carried out by coded welders and fully trained staff. Every piece of steel that goes through the factory is recorded and test certificates are logged to each job.

Bentall Rowlands now produce their silos in both ANSI (American National Standards Institute) and Eurocode versions. The new Eurocode looks even more closely at the loads imposed within the silo by the grain. On the smaller bins, this has a lesser effect on the silo build-up as our silos are to such a high engineering standard. However, on the larger and very tall silos we start to take into account the "patch" load. When designing these larger silos we have to assume that a given amount of grain will stick to one side of the silo. This gives an uneven hoop and vertical load which the silo must withstand.

Bespoke Eurocode designed facility in Germany.

ANSI is a comprehensive agricultural standard which operates as a mechanism to implement and compare sustainability achievements across the whole agricultural supply chain. This standard will determine whether an agricultural crop has been produced and handled in a sustainable manner. To the end user this simply means that the silos are designed to the best possible code.

Bentall Rowlands' silo barrels utilise 100 mm corrugated steel, which adds strength and helps to reduce product hang-up. These are produced from prime high tensile steel. Their very high yield strength contributes to a solution that increases the payload capacity and gives higher strength structures. This steel is corrugated and rolled in our modern factory using state-of-the-art equipment ensuring that every sheet is the same. This not only aids assembly but gives a strong, water tight joint.

The way that the components are connected is also very important. The recently developed new vertical seam bolting pattern still uses a two row system. This reduces erection time over other designs and increases the bearing capacity of the joint by five per cent. The spun galvanised bolts also help to extend the life of the silo. This galvanised coating is on top of the standard bolt covering – "double covering, double life". The company connects its stiffeners differently from other silo manufacturers. Rather than relying on edge to edge contact or bolt shear to transfer loads, the company uses a horizontal plate to transfer the axial load from stiffener to stiffener. This connection is held tightly into position with a back plate. The whole connection uses only eight bolts which makes it far easier and quicker to assemble.

'Keeping your grain, investment and people safe' is Bentall Rowlands mantra.

Case IH attracts big crowds at ADMA agrishow 2016 in Harare

CASE IH AND its distributor Agricon Equipment Zimbabwe exhibited with an impressive stand at the second Agricultural Dealers and Manufacturers Association (ADMA) Agrishow, which was recently held in Harare, Zimbabwe, in June.

The stand stood out for its well laid out, and comprehensive product display. Spread over a large area it showcased the brand's full offering of tractors: the high performance utility JXT Series, the JX Straddle models in two and four wheel drive, the Farmall JXM and Farmall A in ROPS version, the 140 hp Maxxum with cab, and the Puma range. The line-up also included the powerful Magnum and Steiger tractors, plus the high-precision sprayers, machines which are specifically designed for medium and large scale farming operations. A Case IH Axial-Flow 7130 combine harvester completed the display.

Product demonstrations conducted throughout the show generated a lot of interest, with the Magnum 340 tractor and Case IH Patriot Sprayer 3230 proving particularly popular with the public.

Visitors to the stand also had the opportunity to learn more about Agricon's customer-centred approach to sales and the comprehensive support they are able to provide with the backing of the Case IH organisation.

Jason Smith, Agricon´s COO, explained: "Our approach is simple: 'Be ready.' We aim to maintain a full range of Case IH equipment at our dealership at all times, so the customer can visit us and leave with the right products."

Matthew Foster, Case IH VP and general manager Europe, Middle East & Africa, who attended the show, commented: "Agricon is a perfect partner for Case IH. Their excellent after-sales service approach is driven by their long and successful history in supporting fleets of industrial equipment in Zimbabwe. In addition, they are using dedicated IT systems to track machine performance and potential issues."

Case IH at ADMA in Zimbabwe.

Jason Smith added: "We have invested in the first completely integrated information technology system that tracks equipment performance. Our clients will have an end-to-end solution because we can tell the physical position of any equipment, hours or service."

Overall, the show was a big success for Case IH. The JX75T with its 2- and 4-wheel drive options proved to be the best seller, with all available stock sold out and orders placed for shipments already on their way to Zimbabwe. Jason Smith concluded: "The hunger and desire from farmers for quality equipment and effective support has been overwhelming."

Lemken's growing footprint in Africa

LEMKEN HAS A rich and lengthy history in agriculture. The company was established back in 1780 in Germany, and is, to this day, still a family-owned company. The company currently has two factories in Germany (Alpen and Haren), with a third in Nagpur, India. Furthermore, there are also assembly plants in Russia at Detschino, and at Qingdao in China.

Traditionally a plough producer, the company has expanded its product offerings significantly to include a wide range of products for soil cultivation, seeding and crop protection. The range includes machines that are suited for conservation and conventional tillage practices.

Lemken has 25 subsidiaries worldwide, and believes that even the best product is only as good as the local support that can be offered for it. In this light, Lemken South Africa Pty Ltd was established in 2012. The six person team at Lemken SA manages a well-stocked warehouse to serve customers in the Southern African region. Farmers in South Africa and Zambia have come to appreciate not only the Lemken products, but also the assurance that they can rely on Lemken for support.

Lemken is involved in three significant projects across Africa, which aim to train farmers in the use of modern agricultural machinery and methods.

Lemken does not just cater for large and intensive farmers, but also offers a range of smaller implements built at the plant in India.

Lemken is also involved in three significant projects across Africa which aim to train farmers in the use of modern agricultural machinery and methods. The AKTC (Agricultural Knowledge & Training Centre) in Chisamba, just north of Lusaka in Zambia offers 'hands on training on modern agricultural equipment and adopted crop production systems for grain and potatoes'. Operating in Ethiopia's 'breadbasket' region south east of the capital, the Ethio-German Agricultural Training Centre (ATC), in Kulumsa, also trains local farmers in the use and maintenance of modern agricultural machinery. Further to the north, the German-Moroccan Centre of Excellence for Agriculture (CECAMA) in Sidi Silimane in Morocco focusses on providing information to agricultural stakeholders on the use of modern machinery and methods.

Lemken understands the value of training, which is why the company is involved in these private public initiatives. In doing so, the company is trying to bring German efficiency to African farms.

jacto

PAN TRADE

Pan Trade Services Ltd - London, UK - Tel: +44 208 090 1072 - Fax: +44 208 959 3319
E-mail: panjacto@pantrade.co.uk

www.jacto.com.br

Tryctor: A motorbike-turned-tractor

NIGERIAN AUTOMOBILE DESIGNER, Olufemi Odeleye, has spent nearly 10 years developing the prototype for a low-cost, multipurpose, mini tractor – created with the Nigerian, and African, small-scale farmer in mind. His invention, dubbed the Tryctor, has been adapted from the traditional motorcycle and caught the attention of the Nigerian government which is currently piloting the solution among farmers. And this year Odeleye and his Tryctor are up for the Innovation Prize for Africa.

The final solution is a three-wheel mini-tractor with tyres suitable for farming and a 30-horsepower engine that can be used as a generator. Alterations to a motorbike's chassis and gearing system means it operates similarly to a traditional tractor, and it comes with various farming implements – a disc plough, harrow and trailer – which can be attached to improve production, supply markets and ultimate increase revenue.

Furthermore, its engine can be used to power processing machines, such as those used for shelling maize, as well as irrigation pumps. "And it can also provide an alternative source of electricity so a farmer could always use it to power his home. It is a multipurpose tractor which brings value to the small-scale farmer in terms of increasing their income and improving their standards of living basically," explained Odeleye.

In an effort to reduce costs, Odeleye sees potential in implementing a renting model through partnerships with agricultural equipment companies and other organisations.

"We are also targeting farming co-operatives that normally have better buying power than single farmers," he added.

ML 50 cleaning machine from Kepler Weber

In 2015 KEPLER WEBER launched the cleaning machine ML 50, which was designed to clean several types of grains and enable the separation of light, medium and large impurities from the mass of grains. Here, the decantation of light impurities is carried out with options of a cyclone or a pulse jet type bag filter, reducing and facilitating the points for collection of impurities.

The feeding of the product on the sieve is carried out through a self-cleaning funnel, with deflectors and a counterweight valve. This spreads the product homogeneously, forming uniform layer of grains. Thus the principle is separation through sieving, using the concept of physical differences (shape) of particles present in the mass of grains.

Safety is ensured, as, besides standard access platforms, the ML 50 is made on the concept of machines with closed side sieving boxes. The project also has overall moving parts protection, so reducing operational risks. The command board is equipped with a main emergency switch, which may be used in case of breakdowns, operational mistakes or accidents, to switch off the equipment.

Subscription Form

I wish to subscribe to
AFRICAN FARMING AND FOOD PROCESSING
for 1 year (6 issues) starting with the next Issue.

Europe € 94.50, Kenya Ksh1500, Nigeria N2800,
South Africa R210, United Kingdom £57, USA $111

Enclosed is my cheque/draft.❑ Please send us the invoice ❑
Please debit my: Amex ❑ Visa ❑ Mastercard ❑

Card number: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry date: ☐☐/☐☐ **Security Code:** ☐☐☐

(Please note that we will debit your account in sterling).

Name.....Position .....

Organisation .....

Telephone.....Fax .....

Address .....

.....

Country.....Email .....

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

Send this subscription form by airmail together with cheque payable to:
Alain Charles Publishing Ltd, University House, 11-13 Lower Grosvenor Place London, SW1W 0EX, UK

Subscription order can also be placed via the web: www.alaincharles.com or email at circulation@alaincharles.com

YOUR BUSINESS

- 01 Government/Public/Diplomatic Services
- 03 Education/Research Institutes
- 06 Commercial Services
- 08 Import/Export Agents, Distributors
- 09 Farms & Plantations
- 11 Food Processing
- 12 Aid Organisations
- 13 Agricultural Equipment & Material Manufacturers
- 16 Others, Please specify .....

ADVERTISERS INDEX

CROP PROTECTION EXPERTS SINCE 1947

swingfog® + fontan® THERMAL AND ULV FOG GENERATORS

Made in Germany

SWINGFOG SN 50
TENS OF THOUSANDS
IN WORLDWIDE USE

SWINGFOG SN 101
THE SOLUTION FOR
LARGE AREAS

swingfog®

fontan®

FONTAN PORTASTAR S
THE GENUINE ULV FOGGER
LIGHTWEIGHT AND
EFFICIENT

NEW FONTAN MOBILSTAR
ER TYPE WITH GPS CONTROL
M TYPE WITH DOSAGE
NOZZLES FOR
VARIOUS FLOW RATES

SWINGTEC

DIN EN ISO 9001

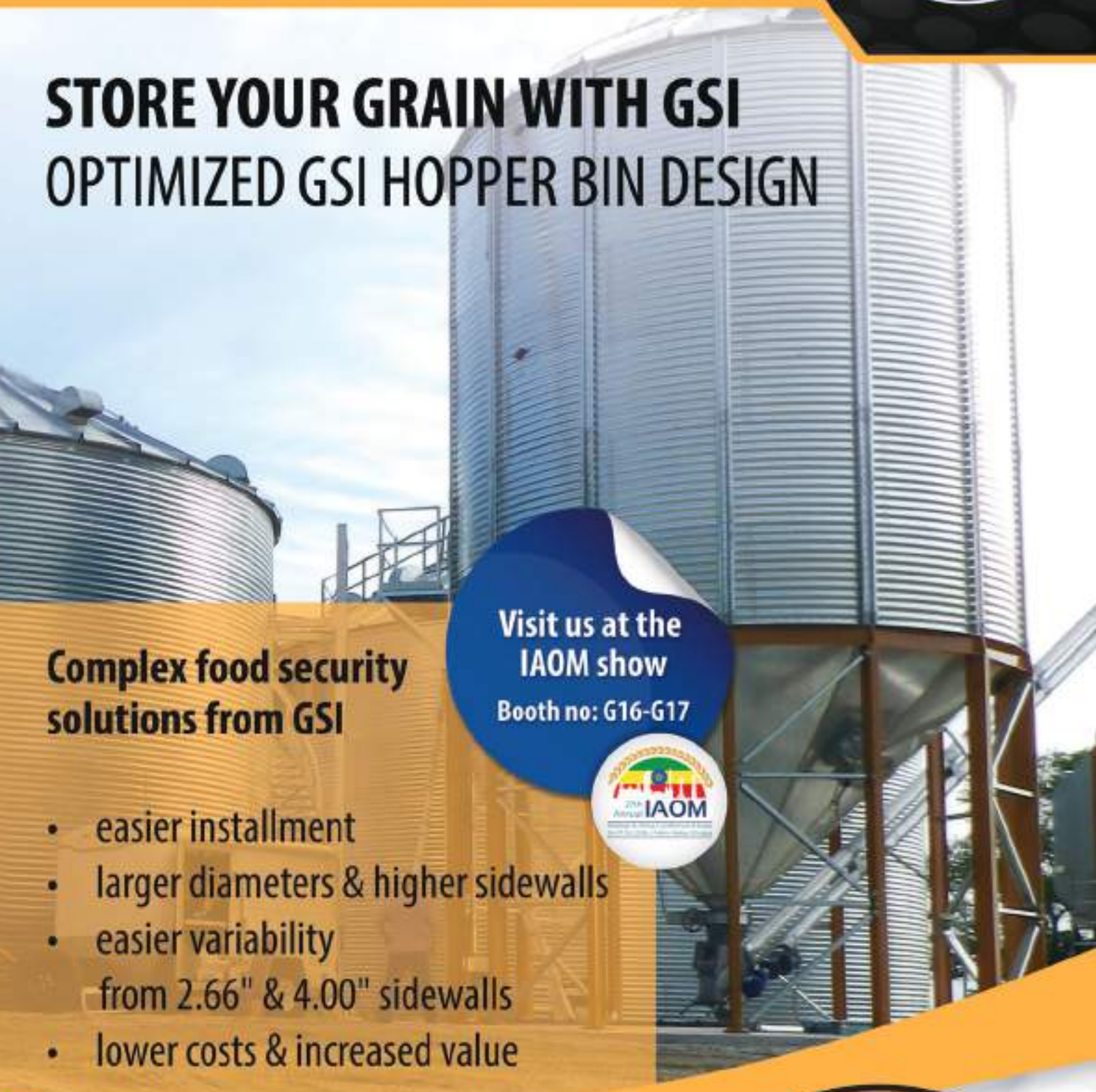
fontan® + swingfog®
QUALITY WINS

Swingtec GmbH, Postfach 1322, 88307 Isny, Germany, Tel. +49 7562 708-0, Fax +49 7562 708-111, e-mail: info@swingtec.de, www.swingtec.de

PROVEN AND DEPENDABLE™

STORE YOUR GRAIN WITH GSI

OPTIMIZED GSI HOPPER BIN DESIGN



Visit us at the IAOM show

Booth no: G16-G17

Complex food security solutions from GSI

- easier installment
- larger diameters & higher sidewalls
- easier variability from 2.66" & 4.00" sidewalls
- lower costs & increased value

To find your GSI dealer visit www.gsieame.com

WWW.GSIEAME.COM

COMPLEX FOOD SECURITY SOLUTIONS™