

# African Farming

and Food Processing

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

## Poultry hygiene management

for high hatch numbers

## Fertilisation

Achieving improved cocoa production

## Balers

Latest innovations for all needs



IFTEX 2017 marks Kenya's growing presence in the global flower market. p12





#ByYourSideAlways

# HISTORY HAS BROUGHT US TOGETHER.

# AGRICULTURAL VOCATION MOVES US.



Jacto. High quality and efficiency in spraying from Brazil to Africa.

# Contents

## News 04

A topical digest of news, views and events including the Farmers' Calendar

## Events 10

Value Added Agriculture Expo, West Africa preview; IFTEX review

## Cocoa 16

Fertilisation for improved cocoa production

## Rice 18

Exploring the potential of inland-valley rice cultivation

## Coffee 20

Intercropping to fight climate change challenges in coffee production

## African Poultry Supplement 22

Hygiene management for high numbers

Africa's poultry processing industry poised for growth

International platform for African poultry with Poultry Africa 2017

Optimising gut health and feed efficiency in poultry

Recombinant vector vaccines to fight Newcastle disease

Optimal brooding conditions for healthy layer chicks

## Irrigation 38

Improving agricultural productivity with smallholder irrigation

## Balers 40

Latest innovations in balers

## Data 44

Access to data crucial to food security



Feed additives can play a major role in improving gut health and productivity of poultry. (Photo: lightpoet/Shutterstock)



Inland-valleys have high fertility and water availability, making them suitable for rice cultivation. p18



Treatment of hatching eggs is essential to control shell-borne infections in hatched chicks. p22



**Editor:** Vani Venugopal

**Editorial and Design team:** Bob Adams, Prashant AP, Hiriyti Bairu, Samantha Payne, Miriam Brtkova, Kestell Duxbury, Ranganath GS, Rhonita Patnaik, Rahul Puthenveedu, Deblina Roy, Nicky Valsamakis, and Louise Waters

**Managing Editor:** Georgia Lewis

**Publisher:** Nick Fordham

**Sales Director:** Michael Ferridge

**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

**Production:** Kavya J and Nelly Mendes  
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

### Middle East Regional Office:

Alain Charles Middle East FZ-LLC  
Office L2-112, Loft Office 2,  
Entrance B, PO Box 502207  
Dubai Media City, UAE  
Telephone: +971 4 448 9260  
Fax: +971 4 448 9261  
E-mail: post@alaincharles.com

**Alain Charles**  
Publishing  
Serving the world of business



## Farming Calendar 2017

### SEPTEMBER

15-16	Naivasha Horticultural Fair <a href="http://www.naivashahortfair.com">www.naivashahortfair.com</a>	NAIVASHA
25-27	AGRIKEXPO 2017 <a href="http://www.agrikexpo.com">www.agrikexpo.com</a>	ABUJA

### OCTOBER

04-05	Poultry Africa 2017 <a href="http://www.poultryafrica2017.com">www.poultryafrica2017.com</a>	KIGALI
10-11	3rd Cassava World Africa <a href="http://www.cmtevents.com">www.cmtevents.com</a>	LUSAKA
13-15	Agro & Poultry East Africa Nairobi <a href="http://www.mxmexhibitions.com">www.mxmexhibitions.com</a>	NAIROBI

### NOVEMBER

02-04	Value Added Agriculture Expo, West Africa <a href="http://www.reedexpoafrika.co.za">www.reedexpoafrika.co.za</a>	ACCRA
12-18	AGRITECHNICA <a href="http://www.agritechnica.com">www.agritechnica.com</a>	HANOVER
21 - 22	Agra Innovate West Africa <a href="http://www.lifesciences.knect365.com/agra-innovate">www.lifesciences.knect365.com/agra-innovate</a>	LAGOS
29-30	Agribusiness Congress East Africa <a href="http://www.agri-eastafrica.com">www.agri-eastafrica.com</a>	KAMPALA

### DECEMBER

08-11	Addis Agrofood <a href="http://www.addis-agrofood.com">www.addis-agrofood.com</a>	ADDIS ABABA
-------	--	-------------

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

## Naivasha Horticultural Fair returns for its 15th edition

ONE OF THE largest horticultural events in Kenya, the Naivasha Horticultural Fair, will return to Naivasha for its 2017 edition during 15 and 16 September 2017.

Now in its 15th year running, the Naivasha Horticultural Fair attracts an audience from across the continent and Europe. The event showcases products and services from stake-holders in the horticultural industry, primarily flower industry. The show will host flower breeders and growers as well as firms dealing with accessories such as greenhouses and pipes as well as financial institutions.

The fair will bring together stakeholders from the horticultural industry across Africa. (Photo: Naivasha Horticultural Fair)



Started as a charity event 15 years ago, the fair has grown consistently over the years into a market leader, with more than 180 exhibitors in 2016.

The event is open to members of the public and provides a range of entertainment (live bands, kiddies' corner, and BBQ's, drink and a food court) to provide a family friendly weekend out.

## Ushering in agribusiness development

NIGERIA IS GROWING to be a choice destination for agribusiness development/investments, given the government's focus 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 from nearby countries procuring from Nigeria. In that regard, there is a great need for new investments, partnerships and appropriate technology, including an

increase in value chain activities for quick results.

AGRIKEXPO 2017, one of Africa's biggest events for agribusiness development, aims to address this need by bringing together an wide array of agribusiness stakeholders from all over Africa and the world.

The array of stakeholder visitors at the event include: farmers, government officers and representatives, channel importers and distributors, agro-allied business owners, C-

level executives of food and agro-allied companies, media, researchers and academics, various trade union members, overseas delegations, trade diplomats and general public.

To take place in Abuja from 25-27 September 2017, AGRIKEXPO will be held in collaboration with the Federal Ministry of Agriculture and Rural Development (FMARD), Federal Ministry of Trade & Investments (FMTI), Nigeria Agribusiness Group (NABG), All Farmers Association of Nigeria (AFAN), and several other agencies.

The 2017 edition of AGRIKEXPO is posited as the 57th Independence Anniversary Edition in recognition and support of the Nigerian government's effort towards agricultural transformation.

AGRIKEXPO 2017 aims to create opportunities for premium agribusiness networking, as many high profile guests in agribusiness will participate in the show. The event will host as series of conferences in collaboration with different agribusiness trade associations with renowned speakers and attendees drawn from both the private and public sectors.



AGRIKEXPO 2016 attracted around 10,200 trade visitors and 95 exhibitors from 11 countries. (Photo: AGRIKEXPO)

## AfDB president Adesina wins 2017 World Food Prize

DR AKINWUMI AYODEJI Adesina, president of the African Development Bank Group, has been awarded the World Food Prize 2017 for his pioneering role in empowering African agriculture and making it a key player of securing food for the world.

The World Food Prize board chose Adesina this year for the US\$250,000 prize, highlighting his role in improving the availability of seed, fertiliser and financing for African farmers, and for laying the foundations for the youth in Africa to engage in agriculture as a profitable business.

In choosing Adesina for this year's award, the organisation recognised his endeavours at the Bank Group to implement the ambitious High 5 priorities (Light up and power Africa, Feed Africa, Industrialise Africa, Integrate Africa and Improve the quality of life for the people of Africa), and the positive impact this would have in Africa and the world.

The organisation pointed out that Adesina's forte is his strong ability to build partnerships that enabled commercial banks and development organisations to provide



The award is a recognition of Adesina's leading role in significantly expanding food production in Africa. (Photo: Africa Progress Panel/Flickr)

loans to tens of thousands of farmers and agribusinesses in Kenya, Tanzania, Uganda, Ghana and Mozambique. As Nigeria's minister of agriculture from 2011 to 2015, he made his mark by creating programmes to make the country self-sufficient in rice production and helped turn cassava into a major cash crop and a strategic raw material for bakeries. Above all, Adesina's success in enabling Nigeria's farmers increase farm yields through an electronic wallet system that helped them obtain fertilisers, led to dramatic improvement in

agricultural production and enhanced food security for 40 million people in the country's rural farm households.

The official announcement of the Prize was made during a ceremony at the US Department of Agriculture in Washington DC. "Adesina will receive the \$250,000 award administered by the Des Moines-based World Food Prize Foundation in a ceremony at the state Capitol in October," US Department of Agriculture secretary Sonny Perdue said.

Perdue commended Adesina for his tireless work in securing food for Africa and the world. He pointed out that there were still huge challenges on the way as the world population grows raising the challenge of feeding nine billion people.

Speaking at the event, Adesina said that he was inspired by a commitment to transform African agriculture into a means for lifting millions out of poverty and is proud his work has been recognised. "It is vitally important to show young people in rural regions of Africa that farming can be profitable and can improve their lives."

## African Union, FAO to boost efforts to end hunger in Africa

THE AFRICAN UNION (AU) and the Food and Agriculture Organisation (FAO) will step up joint efforts to end hunger and sustain peace in the continent, FAO director-general José Graziano da Silva and AU commissioner for rural economy and agriculture, Josefa Leonel Correia Sacko said.

Correia Sacko was in Rome to attend the World Food Programme (WFP) Executive Board, which included a High-Level Event on Fighting Famine convened by WFP and FAO, where da Silva stressed the direct correlation

between conflict and food insecurity. In a meeting, da Silva and Sacko underscored conflicts as a common denominator in areas facing food crises in the continent. "Conflict exacerbates hunger and in many cases hunger and food insecurity to intensify strife and social unrest," da Silva said.

Protracted conflict, in particular, in northeastern Nigeria, Somalia, South Sudan and in Yemen, has left 30 million people, mostly children, in the throes of severe food insecurity,

with 20 million potentially facing starvation.

Sacko and da Silva stressed the need for the AU, FAO, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and the WFP to work closely together to strengthen the links between sustaining peace, livelihoods and sustainable development.

"If you have peace, you can build the resilience, through agriculture, pastoralism and all other activities related to food security," Sacko pointed out.

# WEIGH IN



Griffith Elder

Telephone: +44 1284 719 619  
Web: [www.griffith-elder.com](http://www.griffith-elder.com)  
Email: [sales@griffith-elder.com](mailto:sales@griffith-elder.com)

Griffith Elder and Co Ltd, Bury St Edmunds, England

## Agricultural mechanisation the way forward for Africa

THE AFRICAN UNION Commission (AUC) and the Food and Agriculture Organisation of the United Nations (FAO) have urged AU member states and relevant stakeholders to speed up the adoption of the Framework for Sustainable Agricultural Mechanisation in Africa, which was jointly developed by the two institutions. The framework was developed to enhance sustainable agricultural mechanisation on the continent to fulfil Africa's aspiration to end hunger on the continent by 2025.

Participants from AU Member States, the private sector, farmers' associations, civil society organisations, research institutions and academia, convened at the AUC, to validate the draft Framework for Sustainable Agricultural Mechanisation in Africa (SAMA).

Opening the validation workshop, Josefa Leonel Correia Sacko, commissioner for the department of rural economy and agriculture at AUC, noted that, despite Africa's marked improvement in the agriculture sector in the past few decades, more needs to be done to pull millions of Africans out of the devastating effects of food insecurity and malnutrition.

"Countries must accord mechanisation the utmost importance along the entire agricultural value chain for increased systemic competitiveness," she said. "With a private sector driven approach, mechanisation in Africa must take the capacities of small-scale farmers who constitute the bulk of African farmers into consideration and should empower women who bear the brunt of African agriculture."

## Ethiopia launches new livestock traceability system

THE ETHIOPIAN MINISTRY of Livestock and Fisheries has launched the Ethiopian Livestock Identification and Traceability System, aimed at gathering information regarding source/origin of the animal, type of husbandry and management system in place resulting in quality products for consumers and increased incomes of farmers. The project is supported by the US Agency for International Development (USAID), through its Livestock Market Development activity.

For the last two years, the USAID has supported the ministry in establishing the system, through a livestock sector market improvement pilot project worth US\$1.4mn. The system is expected to make the Ethiopian livestock sector more competitive in accessing international markets.

The Livestock Identification and Traceability system tracks animals using tamper-proof plastic twin ear tags. The tags capture relevant data regarding source of the animal, necessary measures in place to control and prevent occurrence of major animal diseases, and medical and

diagnostic data necessary to ensure the animal's health and the quality of its meat. All recorded data is stored in a central database server purchased by USAID, which is housed inside the ministry's data centre. The USAID stated that the system will make it possible to improve the quality and quantity of the Ethiopian livestock and livestock products destined for export markets.

"The system marks a turning point in the livestock sector of Ethiopia because animal identification and traceability are important factors for livestock market in today's global market," said Stephen Morin, a representative of USAID Ethiopia. "This traceability system will promote the growth of a commercial livestock sector capable of competing in both domestic and international markets."

USAID supported the ministry by providing day-to-day guidance on issues related to general legal framework development, animal identification and traceability systems development and on implementation of the system.



The new system is expected to help livestock farmers gain better access to export markets. (Photo: John Wollwerth/Shutterstock)

## Developing responsible fisheries practices across the Indian Ocean

COUNTRIES FROM THE Indian Ocean Islands and East Africa met on Mahe Island in Seychelles on 27-28 June 2017 to discuss the fisheries transparency initiative (FiTI) for developing strategies to tackle illegal fishing and increase accountability in fisheries practices in the region.

The FiTI workshop was organised by the African Natural Resources Centre of the African Development Bank (AfDB), the government of Seychelles, the Indian Ocean Commission (IOC) and the FiTI International Secretariat.

The two-day meeting was attended by the representatives from the fishing industry, civil

society, governments and fishing administrations from Seychelles, Mauritius, Comoros, Madagascar, Tanzania, Kenya and Mozambique.

The purpose of the event was to enhance the understanding of fisheries administration and transparency in the sector, focusing on FiTI's role to yield benefits for communities and other stakeholders.

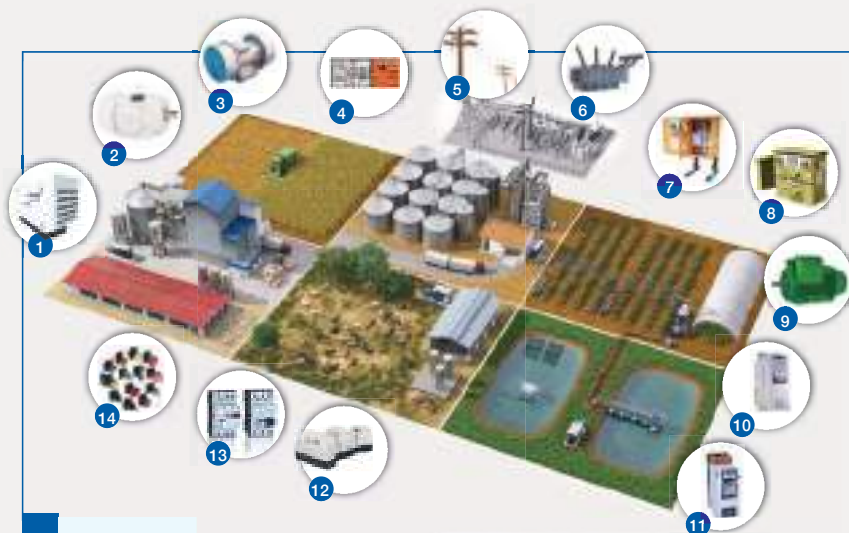
AfDB observed that African countries are vulnerable to overfishing and depletion of fish stock because of opaque and unregulated fishing practices by foreign companies as well as local communities.

"Transparency is essential for responsible

and accountable fisheries practices," said Jean-Louis Kromer, chief natural resources management officer of the African Natural Resources Centre. "The African Natural Resource Centre of the AfDB has been actively involved in the FiTI conceptual phase leading to the FiTI standard, because we believe it can effectively improve the governance of the fisheries sector in Africa, helping to secure the livelihoods of millions of Africans living in fishing communities," added Kromer.

In addition, the workshop also aimed at securing the interest of the IOC and eastern African countries to take part in FiTI and adhere to the FiTI standard.





## RELIABLE ENERGY SOLUTION

for the entire  
agricultural sector.

- 1 Diesel Generator Set
- 2 WWash Motor
- 3 Invicta Vibrator Motors
- 4 Indoor Customisable Control Panels
- 5 Overhead Lines
- 6 Transformers
- 7 All Weather Outdoor Control Panels
- 8 Pole Mount Transformers
- 9 Premium Efficiency Motors
- 10 Variable Speed Drives
- 11 Soft Starters
- 12 Direct Online Starters (DOL)
- 13 Motor Protective LV Switchgear
- 14 Pushbuttons and Pilot lights

Zest WEG Group has been servicing the agricultural sector for more than 35 years with its range of robustly engineered products.

WEG products, designed using modern technology, offer farmers optimum reliability coupled with excellent energy efficiency. From WEG Premium Efficiency electric motors to WWash electric motors with WEG Variable Speed Drives, all have developed a reputation for solid performance in the most demanding conditions. Low maintenance requirements as well as ease of serviceability allow reduced total cost of ownership to the agricultural sector.

As a market leader, Zest WEG Group offers access through WEG Brazil, to international best practice in electrical solutions for the agricultural sector. The Zest WEG Group operates a strategically situated network of branches and distributors to ensure optimum availability of product and parts.

**ZEST**  
WEG Group

Tel: +27 11 723 6000

[www.zestweg.com](http://www.zestweg.com)

# AB ALVAN BLANCH

Processing the World's Crops - Since 1952

## Your reliable partner in agro-processing

- Grain drying & storage
- Grain & seed cleaning
- Rice milling & parboiling
- Maize & cassava milling

- Feed milling & pelleting
- Soya & fish feed extruding
- Vegetable oil expelling
- Fruit juice processing

- ✓ Rice
- ✓ Cassava
- ✓ Cocoa
- ✓ and many others

**Machines and complete systems designed & manufactured in UK, using 60 years of experience**

**Alvan Blanch - adding value to your crop**

[www.alvanblanchgroup.com](http://www.alvanblanchgroup.com) | [africa@alvanblanch.co.uk](mailto:africa@alvanblanch.co.uk)

## Micro-insurance to help protect against drought

FARM AFRICA IS piloting the use of micro-insurance to help pastoralists in the Ethiopian lowlands protect their livestock. The aim of the initiative is to help vulnerable communities in drought-prone areas in the Afar and Somali regions, and North and South Omo zones to respond to climate shocks.

Working on the insurance products with leading Ethiopian insurance company Nyala Insurance, the NGO Mercy Corps and consultancy firm Pula Advisers, Farm Africa, is currently trialling two different models of drought insurance. Model A is indemnity insurance linked to microfinance. This allows customers to take out loans to purchase cattle that includes insurances against the loss of their animals due to disease, theft, accidents, etc. Under Model B pastoral asset protection, customers of veterinary supply retailers buying animal vaccines pay a small additional

margin to buy a contract that triggers a payout if there is localised drought.

The idea behind the initiative is that when faced with impending catastrophe, access to insurance can help people make appropriate investment decisions that do not compromise their long-term resilience. The availability of insurance could also potentially stimulate investment into the livestock economy in vulnerable areas. Micro-insurance is another way to help address financial inclusion among the vulnerable, alongside mobile banking and other schemes

The initiative is part of the MAR project, which is part of the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme funded by the UK's Department for International Development.

## Spatial database to improve rice production

THE RICEATLAS IS a spatial database that collects information on where, when and how much rice is grown globally. The database has been developed by a team of international researchers in collaboration with the ITC Faculty of the University of Twente.

The database, which has been made publicly available, consists of data on rice planting and harvesting dates by growing season and estimates of monthly production for all rice-producing countries. The database represents a long-term global effort to collect, and continuously update, the most detailed information on rice calendars and production worldwide. This is an important dataset that is crucial for understanding the effects of policy, trade, and global and technological change on food security.

While several rice crop calendars exist, they do not adequately capture the spatial and temporal detail associated with rice production. With the help of collaborators from various countries, RiceAtlas aims to become the most comprehensive and detailed spatial database on global rice calendar and production.

Andy Nelson, professor of spatial agriculture and food security at ITC, University of Twente, said, "We developed RiceAtlas to support strategic planning and modelling



which require information on the where and when of rice. Making it a global public good serves the research and policy community but also means that RiceAtlas can be regularly improved through expert knowledge and contributions."

Sander J Zwart, principal researcher at AfricaRice said, "Strategic knowledge on the when and where of rice production supports

the debate on food security and the development and implementation of policies across Africa. Experts from national institutes were consulted to contribute information to RiceAtlas that was before available only in national databases and not shared with the greater public. RiceAtlas was already deployed to spatially analyse the impact of climate change on rice production."

## Soil Organic Carbon App to fight climate change

THE SOIL ORGANIC Carbon App is an online tool that can help users calculate the soil's capacity for sequestering, or containing, organic carbon. The tool was developed by researchers from the International Centre for Tropical Agriculture (CIAT), with support from the CGIAR Research Program on Water, Land and Ecosystems (WLE) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

Binding organic carbon in soils is increasingly considered to have significant potential for mitigating climate change: a recently launched initiative has set out to foster a 0.4 per cent carbon sequestration rate per year, which is the amount required to offset carbon emissions and effectively mitigate climate change. Organic carbon

sequestration can be fostered through land restoration practices, such as no-till agriculture or improving foraging practices in degraded areas.

The Soil Organic Carbon App calculates a soil profile's amount of sequestered organic carbon (t/ha), based on soil organic carbon concentration (g/kg), as well as the quantitative impact of soil conservation practices on sequestration over time and at different scales. Therefore, investors and other decision makers can use the app to assess to which degree planned efforts to restore degraded land will bind organic carbon in soil and mitigate climate change.

The tool is open access and available for use by governments, non-government organisations, researchers, communities and others.



## Poor rainfall aggravates hunger in east Africa

IN AN ALERT released on 14 July 2017, the Food and Agriculture Organisation of the United States (FAO) stated that poor rainfall across east African countries worsened hunger and left crops scorched, pastures dry and thousands of livestock dead.

The most affected areas include central and southern Somalia, southeastern Ethiopia, northern and eastern Kenya, northern Tanzania and northeastern and southwestern Uganda. The FAO said that these regions received less than half of their normal seasonal rainfall.

"This is the third season in a row that families have had to endure failed rains. They are simply running out of ways to cope," said Dominique Burgeon, director of emergencies at FAO. As a result of poor rainfall, there has been a sharp reduction in planting and wilting of crops in several cropping areas across the region.

In addition, the fall armyworm infestation has spread to the east, worsening the situation. In Kenya, the pest has affected about 200,000 ha of crops and in Uganda more than 111 districts have been affected.

In Somalia's lower Shabelle region, which is the main maize producing area, poor seasonal rainfall caused drought situations that affected more than 85 per cent of the cropland.

Low rainfall caused shortfall in localised cereal production in Ethiopia, Tanzania and Uganda's southwestern and northern districts. In Kenya, central, southeastern and coastal areas had been affected by drought.

According to the FAO, around 16 million people in the region have been affected by poor rainfall, up by 30 per cent since 2016. In Somalia, almost half of the total population are suffering from food insecurity. The FAO said that the conditions are expected to further deteriorate in the coming months with the onset of the dry season and an anticipated early start of the lean season. "Support is needed now before the situation rapidly deteriorates further," Burgeon reinforced.

## Coffee export hits US\$866mn in Ethiopia

ETHIOPIA EARNED US\$866MN by exporting 221,000 tonnes of coffee in the fiscal year in 2016-17, said Ethiopian Coffee & Tea Development and Marketing Authority, noting that it accomplished 92 per cent of its set goal to increase coffee exports.

There has been a 11.5 per cent growth in the coffee exports in Ethiopia in 2016-17, compared to the volumes of 2015-16. In addition, the foreign currency earnings from coffee rose by 20 per cent due to the global coffee price hikes, the authority said.

In a statement to The Ethiopian Herald, Dassa Daniso, market development and promotion directorate director, said that the Ethiopian coffee had been imported to more 60 countries, with 86 per cent of the total exports destined for Germany, Saudi Arabia, Japan, USA, Belgium, Sudan and South Korea.

Of them, Germany alone imported 18 per cent of Ethiopian coffee during the reported period.

The Ethiopian government emphasises on taking measures like making land available in low price, facilitating bank loans with low interest, offering 10-year tax holidays and allowing tax free machineries imports to attract coffee investors.



Sidama, yirgacheffe and harar coffee beans have been recognised as internationally branded Ethiopian coffee. (Photo source: Ceguito/Pixabay)



# Poultry Africa 2017

4 & 5 October 2017 - Kigali, Rwanda



## Expo; Leadership Conference & Best Practices Seminars for Sub-Saharan Africa

Presented by:





In close cooperation with:





## SAVE THE DATE !

meet renowned professionals  
throughout the poultry  
production chain!

Two days full program: 4 -5th October 2017

Top international companies presenting their innovative solutions in a boutique-style, high-quality Expo	Knowledge transfer through a series of Technical Seminars on Best practices	Leadership Conference program with internationally renowned speakers and lead companies
<b>EXPO</b> Free entrance	<b>SEMINARS</b> Free entrance	<b>CONFERENCE</b> \$ 99,- Entrance fee

[www.poultryafrica2017.com](http://www.poultryafrica2017.com)

Supported by:













Taking place from 2-4 November 2017 in Accra, Ghana, Value Added Agriculture Expo, West Africa will focus on the full agri-business value chain in West Africa and provide a platform to bring together key players in the industry.

# Addressing key sectoral challenges in African agriculture

**C**LIMATE CHANGE IS impacting the African agriculture sector in unprecedented ways, and farmers are ill-equipped to cope with the rise in temperature, drought and diseases affecting crop and harvests.

According to a multi-country report by Grow Africa titled the Enabling Environment, private sector investment in Africa is also being seriously hampered by a number of factors, all of them having an impact on economic and industrial growth. Topping this list is a lack of access to finance, with 35 per cent of the respondents citing lack of access to affordable finance as a key hurdle to getting projects off the ground. Other challenges cited in the report include lack of infrastructure, skills and policy.

What is needed to meet these challenges is a multipronged policy or strategy that addresses the challenge of skills, financing and policy, coupled with market access.

**Value Added Agriculture Expo, West Africa, will showcase the latest equipment and technology supporting the production and manufacturing of value added products.**

## Multipronged agricultural initiatives in Ghana

In Ghana, two such multipronged approaches have been launched – the one supported by a collection of national and international stakeholders; the other, an initiative of the Ghanaian government.

The Ghanaian National Cassava Platform (GNCP) was launched with the support of Grow Africa (a multi-partner initiative made up of the African Union (AU), the New Partnership for Africa's Development (NEPAD) and the World Economic Forum) and IDH – the Sustainable Trade Initiative in April 2015. The GNCP aims to



Knowledge transfer to SMEs is an important component of the event. (Photo: Reed Exhibitions)

build a market for cassava products in industrial processes and bring together producer groups, processors, off-takers, financiers and the public sector to work together on building links between actors along the chain at the national level. Working groups within the GNCP aim to develop policies and programmes focused on production capacity, processing capacity, marketing and technology, access to finance and policy and research.

Another initiative by the Ghanaian government is the recently launched Planting for Food and Jobs programme. The government's policy objective is to modernise agriculture, improve production efficiency, achieve food security and profitability of farmers, all aimed at significantly increasing agricultural productivity. The programme aims to increase production of maize by at least 30 per cent, rice production by 49 per cent, soybean by 25 per cent and sorghum by 28 per cent. This is built on five key initiatives, namely, the provision of improved seeds, supply of fertilisers, provision of dedicated extension services, marketing and e-agriculture and monitoring.

## Value Added Agriculture Expo

Addressing these, and other critical issues impacting agriculture and food security, is the Value Added Agriculture Expo, West Africa, which creates a platform for trade and investment opportunities through attracting key investors and buyers, and will showcase the latest equipment and technology supporting the production and manufacturing of value added products.

Taking place from 2-4 November 2017 in Accra, Ghana, this is the only trade event focusing exclusively on the full agri-business value chain in West Africa.

Key focus areas of the expo include:

- Encouraging investment in manufacturing plants to increase value added production
- Attracting international buyers to increase valued-added product exporting opportunities
- Showcasing farming equipment, technology, seeds and feed to support value added production
- Increasing knowledge in machinery and equipment to enhance production
- Knowledge transfer to SMEs wanting to enter the agriculture sector or expand their existing business. **E**







**SAFETY HARDNESS AND SIGNIFIANT  
REDUCTION IN ARDUOUSNESS**



**UNIQUE, ACCURATE AND  
RESISTANT DIAPHRAGM**

**- PATENTED -**



[www.cooper-pegler.com](http://www.cooper-pegler.com)

**CONTACT US :**

✉ [hozelock-exel@hozelock-exel.com](mailto:hozelock-exel@hozelock-exel.com)  
☎ +33 (0)4 74 62 48 20  
☎ +33 (0)4 74 62 48 48

HOZELOCK-EXEL - 891 route des Frênes, ZI Nord Arnas, BP 30424  
69653 Villefranche Cedex, FRANCE

SAS with a capital of 2600000€ - SIRET 77965877200024 - APE 2830 Z  
RCS Villefranche B - N° TVA intra-community : FR 02 779 658 772



We've been supplying machinery to farmers in Africa for over 25 years.  
Visit our website to see how we can help you source your next machine.  
Quality used machinery all delivered to your nearest sea port.

[www.ellismachinery.co.uk](http://www.ellismachinery.co.uk)

Email: [sales@ellismachinery.co.uk](mailto:sales@ellismachinery.co.uk) Tel: +44 (0)1926 640637



International Flower Trade Expo 2017 (IFTEX) provided a platform for the international flower industry to converge in Nairobi, marking the country's growing presence in the global market. Mwangi Mumero reports.



## Kenya's blooming flower industry

There was strong international presence at the expo with a high number of buyers from Europe and Asia. (Photo: IFTEX)

**T**HIS YEAR'S ANNUAL International Flower Trade Expo (IFTEX), now in its sixth year, attracted more than 300 exhibitors and 5000 delegates. It was held on 7-9 June at the Oshwal Centre, Parklands, on the outskirts of Nairobi.

Launched in Nairobi in 2012, IFTEX has been held every year since, and has grown significantly over the years. Organisers say that, currently, IFTEX is on par with other leading global flower exhibitions, including World Floral Expo (USA), Agriflor (Quito, Ecuador) and the International Floriculture Trade Fair (Vijfhuizen, Holland), all important events in the flower industry calendar.

The fair was opened by Kenya Flower Council's (KFC) chairman Richard Fox, who praised the important, and still growing, position of Kenya in the world trade of flowers.

### Kenya's stronghold in the flower industry

Kenya's flower sector continues to grow, controlling 40 per cent of all cut flowers exports to the European Union. Large

volumes also leave Nairobi for the Middle East, Japan and China, making the country an important source of global flower sales.

Kenya's position astride the equator and varying climatic conditions enables the country to grow flowers that compete with those from Ethiopia, Ecuador and Colombia, which are top flower producing regions in the same horizon.

Kenya has a mix of low and high lands, which enables the production of the same variety in different regions to have different characteristics catering to diverse markets. For instance, the same variety of flowers grown in Naivasha, Thika and Nanyuki, the prime growing regions in the country, gives three different shades of the same

flower and goes into different markets. This is unique to Kenya. Big heads, small heads, short stems, long stems, as well as different varieties coming from the same country, complete the picture of market diversity.

According to Kenya's Central Bank of Kenya Economic survey, the country produced 133.7 metric tonnes of cut flowers worth US\$708mn in 2016, an 8.8 per cent growth from the previous year. In 2015, 122.4 metric tonnes of cut flowers worth US\$629mn were produced.

The sector employs over 500,000 people in Kenya – becoming an important part of the local economy. It is also a good revenue earner for the government through taxes and levies.

**Kenya's flower sector continues to grow, controlling 40 per cent of all cut flowers exports to European Union.**

### Expanding to global markets

Over 65 per cent of the exported flowers pass through the Dutch auctions before finding their way into European supermarkets and homes.





The expo catered to all segments of the Kenyan floriculture chain, from breeders, to propagators, growers, cargo and suppliers. (Photo: IFTEX)

Kenyan flower farmers are eager to expand their markets, notably in the Far East, China, Australia and Russia.

"We are appealing to our government to reach out to the Chinese government so that they can agree how the duty can be removed. Otherwise it will cost local flower exports a lot of money as they try to access the market," said Jane Ngugi, the chief executive officer, Kenya Flower Council (KFC) speaking at the IFTEX.

Currently, China charges a four per cent duty to Kenyan flowers while Ethiopia accesses the same market duty free.

Richard Fox, chairman of the Kenya Flower Council (KFC), observed that 75 per cent of total flowers grown globally are exported to EU, Japan and the US.

"New markets such as Russia, India and China present good opportunities for local farmers. The government needs to advocate removal of duty by the Chinese government to Kenya exports to really benefit local producers," added Fox.

#### IFTEX's global platform

Despite maturity of the flower sector in the country, exhibitors at the expo indicated that the industry faced some teething challenges.

"Increased competition, reduced revenue streams, high production costs in terms of labour, chemicals and farm inputs and rising

cost of credits remain critical issues in the sector," observed Hamish Ker, a grower and farmer with Naviasha based Oserian Flowers.

According to Ker, the county has the capability to produce champion products that meet international standards and also satisfy the rising demand in the global flower markets.

Exhibitors, like Ker, hoped to use the expo in sealing new deals locally and internationally while exploring new markets of Asia and the US.

Another exhibitor at the expo was James Cocker, the sales manager with Chrystal Africa, a firm that provides quality products that lengthen flower life.

"We are using the expo to seek new deals to expand on the 30 clients currently working with us. Plans are also underway to open new offices in Ethiopia, Uganda and Rwanda. We see Ethiopia as having the capacity to become the next flower hub in the region," said Cocker.

**Kenyan flower farmers are eager to expand their markets notably in the Far East, China, Australia and Russia.**

#### Meeting export requirements

With the prospects of the lucrative US market, the Kenya Plant Health Inspectorate Service (KEPHIS), has called upon players in the flower sector to familiarise themselves with the requirements of plant exports to the USA.

"We wish to state that plant produce needs to be free of pests and diseases and needs to meet all the requirements of the USA market. Farmers and exporters need to be conversant with the USA Plant Import Permit and phytosanitary certificates. This will make the export process easier and faster," noted Dr Esther Kimani, managing director of KEPHIS, the government agency that assures the quality of agricultural inputs and produce to promote food security.

#### Other African markets

Regional East African community nations were also represented at the expo. Flowers from Uganda, Tanzania, Ethiopia and Rwanda were also on display to international buyers that came from 40 countries around the world.

"Uganda and Ethiopia are presenting their flowers in country pavilions, with flower growers collectively representing themselves and their products," noted Ngugi, KFC.

The expo also attracted service providers dealing with a variety of products and services for the flower sector. **E**

Contrary to popular belief, fertilisation can contribute significantly to the fast growth and high yield of cocoa. Dr Terry Mabbet speaks to Peter Prentis, export director, and Alan Lowes, regional director of Omex, for a contemporary perspective on nutrient requirements of cocoa.

# The unexplored potential of fertilisation in cocoa farming

**C**OCOA THRIVES UNDER heavy and intense rainfall in the wet tropics but is prone to nutrient loss from leaching and run off with saturated soils offering less than ideal conditions for root systems to absorb nutrient requirements of the trees. Regular harvesting of pods and accompanying loss of nutrients presents a perennial nutritional deficit that needs to be replenished with fertiliser.

Cocoa suffers from *Phytophthora* pod rot (black pod disease) and potentially lethal *Phytophthora* stem canker caused by fungus-like *Phytophthora* pathogens, including *Phytophthora palmivora* world-wide and *Phytophthora megakarya* in west Africa. *Phytophthora* pod rot on cocoa is one of the most destructive and debilitating diseases of any tropical plantation tree crop in the world.

## Fertiliser use in cocoa

Faced with this nutrient drain, you might expect fertiliser to have featured strongly in the cultivation of cocoa, but apparently not. Indeed, there appears to have been a certain negativity in the traditional commentary on fertilisation, whether for nursery or field-grown cocoa and for both young and mature trees.

Guy Mossu, former deputy director of the IRCC-CIRAD, wrote in *Cocoa* (The Tropical Agriculturalist Series, ICTA/Macmillan and published in 1992), "Fertilisers are rarely used in cocoa," and explains how the effect of fertilisers on productivity depends largely on cultural and light conditions. Under permanent shading, fertilisers are rarely profitable, while for trees under full sunlight, they are only effective if, and only if, all cultural conditions are correctly carried out and under well-distributed rainfall in excess of 1200 mm/year.

But cocoa, whether shaded or under full sun, and whether or not receiving optimum amount and distribution of rainfall, is still flowering and fruiting, and therefore subject to significant loss of nutrients when pods filled with nutrient-rich mucilage and beans are harvested. Nutrients lost at harvest add up to a considerable amount on a per



Cocoa is grown throughout the tropics with the single biggest crop concentration in west Africa. (Photo: BestForBest/Shutterstock)

## Regular harvesting of pods and accompanying loss of nutrients presents a perennial nutritional deficit that needs to be replenished with fertiliser.

hectare basis and require replenishment.

The extent of this loss was documented by GAR Wood and RA Lass in *Cocoa* (Longman and published in 1985) and which remains the 'bible' for cocoa. "A crop of 1000 kg dry beans removes about 20 kg N (nitrogen), 4 kg P (phosphorous) and 10 kg K (potassium). If method of harvesting involves removal of pod husks from the field then the amount of K removed is increased five-fold," said the authors.

On nursery cocoa they said, "The sensitivity of cocoa seedlings to fertiliser, and subsequent toxic effects, meant there were hardly any recommendations on fertiliser use in cocoa nurseries." They were presumably referring to the application of solid fertiliser formulations to the potting compost or soil.

Given these comments, you could be forgiven for thinking that fertiliser application in cocoa was unimportant, but perhaps

commentators were looking at the problem in the wrong way and a new direction in cocoa feeding and nutrition is required.

Focus at that time was on solid fertiliser applied to the soil but in the wider arena, including canopy structure and growing conditions, perhaps cocoa is better suited to application of soluble nutrients to the canopy by spraying. Delving into these standard cocoa texts now half a century or more old suggests that this could well be the right assumption and conclusion.

There was general agreement on the need to use soil and plant analysis to determine the nutrient status of cocoa, although some sources suggest leaf analysis gives a more accurate picture than does soil analysis. The more you read, the more you realise that the soil environment in cocoa is a conundrum and perhaps more so than for any other tropical tree crop.

## Foliar feeding is the way forward

Observations over the last half century suggest that the way forward for cocoa is foliar spraying of soluble nutrients as dictated by leaf nutrient analysis rather than soil analysis. With this in mind, I travelled to the East of England headquarters of Omex Agrifluids designer and manufacturer of soluble liquid and powder nutrient





Preservation is key

[www.bentallrowlands.com](http://www.bentallrowlands.com)



E: [info@bentallrowlands.co.uk](mailto:info@bentallrowlands.co.uk)

# MATABI

YOUR PARTNER  
FOR ACCURATE SPRAYING



## EVOLUTION 16 - EVOLUTION 20 SUPER

Offer the best solutions for  
**CROP PROTECTION:**

Cotton, Coffee, Cocoa, Palm Oil, Sugar Cane....

We guarantee a large range of applications for herbicides, insecticides and fungicides, **with increased efficiency and accuracy**, thanks to **our pressure regulator and range of nozzles/accessories.**



# iK

BY EXPERTS  
FOR EXPERTS



## IK VECTOR CONTROL SUPER

Your partner for **VECTOR CONTROL**  
applications

**Professional Spraying Equipment for Indoor  
Residual Spraying and Larviciding** to fight against:

Malaria, Dengue, Chagas, Chikungunya,  
Leishmaniasis, Yellow Fever, Ebola, Cholera...  
in compliance with the most demanding  
International Standards for spraying equipment.



 **Goizper Group**  
Growing through cooperation



[www.goizper.com](http://www.goizper.com)

Tel. +34 943 786 000  
[spraying@goizper.com](mailto:spraying@goizper.com)

products. Omex has expertise and experience in cocoa throughout Latin America, Africa and South East Asia, the three hubs of world cocoa production. I spoke with Peter Prentis, export director, and Alan Lowes, regional director, at Omex for a contemporary perspective on nutrient requirements for fast growth and maximum yield of high quality cocoa.

A logical place to start is the nursery. The prime purpose of cocoa nurseries is root growth and development to secure well-established seedlings resilient to the shock of field planting. Omex's answer to these requirements is Bio 20. "The Omex Bio 20 is a highly concentrated emulsion containing N, P and K, all at 20 per cent (weight/volume – wt/vol) magnesium (Mg) at 1.50 per cent wt/vol and the full range of micronutrients, most in chelated form," said Prentis. Omex Bio 20 also has a biostimulation function furnished by a seaweed-derived organic addition and with accelerative and positively beneficial effects on root development.

### Solutions from Omex

Cocoa is grown throughout the wet and humid tropics, but commercial production is concentrated in particular regions. West Africa, with four country producers (Côte d'Ivoire, Ghana, Nigeria and Cameroon) occupying four of the top five positions in world cocoa production, is by far the biggest. I asked Alan Lowes whose remit covers the region about the range of Omex products used by west African cocoa farmers. "We do considerable business throughout west Africa in Francophone countries like Côte d'Ivoire, as well as English speaking nations such as Ghana and Nigeria", said Lowes. "Such is the crop's importance that Omex has custom-designed products for cocoa grown in this region," he added.

Cocoboost has been tailor-made for cocoa in Ghana, Nigeria and other English speaking countries. It is a foliar-applied complex of nutrients containing N, P and K at, respectively, 8.30 per cent, 32.40 per cent and 21.10 per cent wt/vol, chelated Mg and a complement of micronutrients most in chelated form.

Omex has used the same broad-brush approach in Francophone West Africa through custom-design of a foliar-applied product possessing all nutritional elements required by cocoa. Foliacao (Engrais Foliaire pour Cacaoyers – foliar fertiliser for cocoa) contains N, P and K at, respectively, 13.5 per cent, 27.00 per cent and 27.00 per cent, Mg and chelated micronutrients.

"This pair of totally soluble nutrient products is designed for spray application



Phytophthora pod rot is the most widespread and damaging disease of cocoa irrespective of where the crop is grown. (Photo: Dr Terry Mabbett)

to the leaf canopy and rapid absorption by leaves, but they can also be absorbed by the roots. This means that any spray liquid running off from leaves and into the soil can be intercepted and absorbed by the roots," said Lowes. "Both products are designed to provide cocoa with its full complement of nutrients right through to pod harvest," Peter Prentis added.

"Calcium (Ca) is important for structural support as the tree begins to branch, and additionally for good pod growth and development," said Prentis. The importance of calcium in this respect is two-fold, by giving high yields and as a structural component of cell walls to maximise resilience of pods to infection and disease development.

K, N and Ca accumulate at high levels in cocoa trees, becoming effectively immobilised and only available again to the cocoa crop via recycling of the leaf litter. Accumulation and effective immobilisation of Ca in six-year old cocoa trees has been calculated at 300 kg/ha. A significant amount of Ca is lost at harvest. Malaysian research showed it to be 4.9 kg/ha/year on a yield of one tonne dry beans/ha.

"This is why we recommend our Omex CalMax (22.5 per cent CaO plus a balanced range of micronutrients) as a standard, regularly-applied foliar spray to cocoa throughout Asia," said Prentis.

### Correcting nutrient deficiency

Nutrient deficiency in cocoa is well documented with shortfalls in Zinc and Boron being the most common. Zinc deficiency may be associated with low soil zinc but just as often by high pH and poor soil aeration combining to lock up soil zinc and reduce its uptake by roots. I asked Lowes and Prentis if Omex has anything specific to correct zinc and boron deficiency in cocoa.

"We do have something that was originally designed for coffee but which may prove entirely appropriate for correcting zinc and boron deficiencies in cocoa," said Lowes. This is Zibo, a two-in-one product based on boron and zinc and custom-designed by Omex. "Zibo is applied as a foliar spray to mature coffee trees but may well prove equally useful for cocoa," said Prentis.

### Fighting phytophthora in cocoa

Phytophthora (pod rot and stem canker) is the largest limiting factor on production. Furnishing fertiliser at optimum rates and timing is important in maintaining general health and resilience to infection and disease development. But is there a more specific and targeted way to deal with Phytophthora, while staying within the boundaries of plant nutrition? The answer is yes, by utilising the biostimulation properties of phosphite ( $\text{PO}_3^-$ ), the salt of phosphorous acid ( $\text{H}_2\text{PO}_3$ ). Phosphite is a reduced form of phosphate ( $\text{PO}_4^-$ ) the salt of phosphoric acid ( $\text{H}_3\text{PO}_4$ ). As well as providing P as a nutrient, phosphite ions have the ability to suppress disease. Not directly like a fungicide, but indirectly, by eliciting an anti-pathogen response in the host plant when applied as a foliar spray.

Unique properties of phosphite make it well suited to this role. Exceptionally high solubility of phosphite offers distinct advantages in formulation of a liquid product and rapid entry into leaves and transport inside the plant. What's more, phosphite is mobilised and transported in xylem (upwards into the leaf canopy) and phloem (downwards to the roots). This two-way transport of phosphite is important in cocoa because the leaves form a distinct canopy at the top of the tree, while pods are attached to the trunk and main scaffold branches in the lower part of the tree.

I asked Prentis and Lowes whether Omex is exploiting this dimension in cocoa crop nutrition. "We most certainly are with our well established Omex DP98 based on potassium phosphite and used as a foliar spray," said Peter. Phosphite is transported downwards in phloem to suppress Phytophthora pod rot and stem canker, as well as furnishing phosphorous for root growth and development," said Alan. Peter explained how DP98 is used by painting on phytophthora stem canker lesions to suppress the disease as well as providing an alternative route of entry for phosphite into the tree. "Cocoboost which we discussed earlier contains phosphorous as phosphite, thus offering West African cocoa farmers a dual crop nutrition and disease management dimension," said Lowes. **E**



**A à Z PERFORMANCE**

MAKE ALL YOUR TECHNICAL PROJECTS ACCESSIBLE

**SERVICE**

A à Z is here to provide you technical services and training for industrial vehicles operators in Agriculture, Construction, Forestry and Cargo Handling.

**SKILLS**

Our technicians are proficient in English and French with experience in estates, remote areas incl. Short to long term appointment.

**TRAINING**

We train you for mechanics and drivers, for maintenance program implementation, for fleet inspection and repair and for technology implementation.

CONTACT US :

✉ [julien.houdayer@aaz-performance.fr](mailto:julien.houdayer@aaz-performance.fr)  
☎ +33 611 74 63 86

[www.aaz-performance.fr](http://www.aaz-performance.fr)

looking for feed mills?  
ask **AWILA**

*We have the Solution!!!*

from smallest compact units for farm use ...

to automated milling mixing units...

to complete feed plants with pellet production

from grain silos plants...

to turn key commercial feed plants

Planning, design, and erection of turn-key feed mills, grain storage plants, mineral and vitamin dosing and premixing systems, pasteurizing systems, Production of intakes, conveying/storage systems for raw materials, mills, mixers, pellet presses, pellet coolers, oilmills, conditioners, control systems

**AWILA Anlagenbau GmbH**  
Dillen 1  
49569 Lastrup  
Germany

Tel.: +49 4472 892 0  
Fax: +49 4472 892 226  
email: [info@awila.de](mailto:info@awila.de)  
Internet: [www.awila.de](http://www.awila.de)

**AWILA**  
Anlagenbau GmbH

**AWILA Workshops Germany**

**T-L** RELIABLE IRRIGATION PERFORMANCE...  
**LIKE NO OTHER.**

**T-L IRRIGATION SYSTEMS ARE EASIER ON YOU.**  
Experience maximum uptime and eliminate the hassles of electric drive machines with the simplicity and reliability of T-L's exclusive hydraulic design. Safety, high maintenance costs, and unexpected downtime will no longer be major concerns.

**STOP COPPER THEFT.**  
Copper wire is being stolen from electrically powered pivot systems at an alarming rate, sometimes on multiple occasions. T-L's hydrostatically powered pivot systems can be designed with no wire to steal, eliminating the problem entirely.

**RECOVER YOUR LOST PRODUCTION WITH T-L.**  
Eliminate the "spoking" effect caused by the start-stop operation of electrically-powered pivot irrigation systems and get the benefits of even water distribution only hydraulically driven T-L systems can provide.

**T-L Center Pivot**

**Electric Center Pivot**

Contact T-L, your T-L dealer, or visit [www.tlirr.com](http://www.tlirr.com) to learn more.

**T-L ... LIKE NO OTHER.**  
[www.tlirr.com](http://www.tlirr.com)

151 East Hwy 6 & AB Road · P.O. Box 1047  
Hastings, Nebraska 68902-1047 USA  
[sales@tlirr.com](mailto:sales@tlirr.com) · [www.tlirr.com](http://www.tlirr.com)

Phone: 1-800-330-4264  
Fax: 1-800-330-4268

Phone: (402) 462-4128  
Fax: (402) 462-4617

**60 YEARS**  
IRRIGATION SINCE 1955 EXCELLENCE

**ISO 9001**

AfricaRice's Smart-valleys approach, a participatory, sustainable and low-cost way to develop inland valleys for rice-based production systems is helping improve the agricultural production in sub-Saharan Africa.

# Smart-valleys: transforming inland-valley rice farming in Africa



Inland-valleys have high fertility and water availability, making them suitable for rice cultivation.  
(Photo: Agota Kadar/Shutterstock)

**I**NLAND VALLEYS – FLAT-BOTTOMED, relatively shallow valleys that form natural rainwater catchment areas – are a common landscape across Africa. Owing to their high fertility and better availability of water compared to the surrounding uplands, these lowlands have high agricultural production potential. The availability of water allows two to three crops to be harvested per year, while in the uplands, only one crop can be cultivated. During the rainy seasons, rice is the only major crop that can be grown in the wet and temporarily flooded conditions. On the valley fringes, cash crops such as maize, cotton, cashew, mango and banana are common.

However, the agricultural potential of inland valleys have remained largely untapped owing to the challenges of water management, which is essential to make these flood-prone lowlands arable. With the looming threat of food security, agricultural experts have stressed on the need to vitalise inland valley agriculture to improve food production in Africa, particularly rice cultivation.

## The inland-valley challenge

The main challenge in inland-valley cultivation is water control. The geographical features of these lowlands make them prone to flooding and this calls for the need for water management systems to ensure sustainable agricultural production.

There have been several initiatives to develop water management systems in inland valleys in Africa in the past, however, they have had little success. The requirement for expensive topographic studies and high investment costs to construct elaborate water control infrastructure have been few of the challenges met by these

initiatives. A lack of understanding of local ecosystems and participation of local communities have also contributed to why these inland-valley schemes were not able to make a long-term impact on African agriculture.

Experts have since stressed that the most adapted systems to manage the water in the inland valleys are low cost management systems that are adapted to the agro-ecological environment of the region and which can be operated and maintained by the farmers.

**After implementing the Smart-valleys approach, farmers have seen rice yields under rainfed conditions increase from 1.5-2 tonnes per ha to 3.5-4.5 tonnes per ha.**

## 'Smart-valleys'

To address these issues of inland-valley farming, AfricaRice, in collaboration with the Lowlands Division of Benin Ministry of Agriculture, Livestock and Fisheries and the Togolese Institute for Agricultural Research with support from the Japanese Ministry of Agriculture, Forestry and Fisheries, developed a system called Smart-valleys. This is a participatory, sustainable and low-cost approach to develop inland valleys for rice-based production systems in sub-Saharan Africa.

The idea for the Smart-valleys approach for rice cultivation in inland valleys was inspired by a simple, low-cost land preparation



method from Asia called *sawah*. In this system, water inlets and outlets are used to control water in flooded rice fields and facilitate soil fertility management.

In 1997, the *sawah* system was introduced and tested in the Ashanti region in Ghana and the Bida region in Nigeria by Japanese scientists in collaboration with local research and development partners. It was found that the system helps improve land preparation and transplanting, reduce water runoff and loss of fertiliser and maintain a water layer in the field to help control weeds. The *sawah* system was found to hold great promise for African inland valley farming and it was estimated that more than 20 million ha of the 190 million ha of inland-valley lowlands in Africa are suitable for this system.

In 2009, with strong technical and financial support from the Japanese Ministry of Agriculture, Forestry, and Fisheries (MAFF), the Africa Rice Centre (AfricaRice) launched the Sawah, Market Access, and Rice Technologies for Inland Valleys (SMART-IV) project in Togo and Benin. The project is carried out in collaboration with national and non-government partners.

After the first two years of the project, farmers did not widely adopt the conventional *sawah* system because the targeted areas had a continuous natural water supply while there were few inland-valley sites in Benin and Togo with a continuous water supply. This limited the scope for achieving large-scale adoption of the system. The project scientists had to modify and adapt the system to local conditions of rainfed smallholder farmers.

### Improving the approach

The modified *sawah* approach was named Smart-valleys. It is also the name of the follow-up project to SMART-IV developed and validated in the project countries. Smart-valleys involves relatively simple, low-cost water management structures that can be constructed and maintained entirely by farmers themselves. With only limited additional cost to farmers, it can help double rice yields through improved water control, especially if it is accompanied by good crop management practices.

Built on the philosophy that farmers know their lands better than anyone else, one of the cornerstones of the Smart-valleys approach is farmer engagement. The project stresses on farmer participation throughout the development process, thereby creating a strong sense of ownership among them.

"Farmers are the key players in this system; otherwise, this system will not be sustainable," remarked Worou Soklou, land development specialist for AfricaRice.

### The working model

The Smart-valleys approach follows a step-wise procedure focusing on design, lay-out and construction of low-cost water control infrastructure after a careful selection procedure paying attention to both socio-economic and biophysical factors and making extensive use of farmer knowledge.

The Smart-valleys approach starts with the identification of inland valley sites with potential for rice cultivation by a technical team working with farmers in the field. The team comprises members who are trained in the Smart-valleys approach, and comprehend the social and hydrological setting of valleys with potential for rice cultivation. Together, they create a dossier containing information about the valleys to be developed, the importance of rice in the surrounding community, the potential to grow and market rice, the suitability of the soil and water source for rice cropping, land tenure, etc. The dossier allows the technical team to discuss with the communities that want to exploit the valley and those that are downstream that might be affected by the development.

The plan and design of the development is based on this dossier,

consultations with technical teams and farmers' knowledge and experience of water flow and retention on the soil surface. The design outlines the water intake, drains and bunds to enable greatly improved water retention in the valley lowlands and drainage of excess water from the valley. It may also include simple structures to divert water from a natural source and provide irrigation to the rice fields when required.

### Reaping the benefits

In Benin and Togo, 139 Smart-valleys sites have been established and are operational, with around about 2,000 farmers cultivating rice in them. More than 200 ha in Benin and 135 ha in Togo were developed using this approach. After implementing the Smart-valleys approach, farmers have seen rice yields under rainfed conditions increase from 1.5-2 tonnes per ha to 3.5-4.5 tonnes per ha. In addition to this, the Smart-valleys have also provided farmers with major advantages including lower vulnerability to drought risks due to increased water retention in their fields and less risk of fertiliser losses due to flooding.

The project also provided inputs to the national strategy for inland valley development in Benin that is being prepared by the Ministry of Agriculture, Livestock, and Fisheries.

According to AfricaRice deputy director general Marco Wopereis, the main advantage of the Smart-valley approach is higher yield and lower risk. This allows farmers to start using inputs such as mineral fertilisers, which, in turn, help them to further increase rice production.

After its success in Benin and Togo, Smart-valleys is being rolled out in Burkina Faso, Liberia and Sierra Leone – countries that have a high potential for development of rice-based systems in inland valleys. <sup>19</sup>

**Pioneering Plant Health** **OMEX**

- Suspension Fertilisers
- Clear Solution Fertilisers
- Soluble Powder Fertilisers
- Organomex Range
- Fertiliser Coatings - MDS
- Health Promoters
- Seed Treatments
- Bio-Fertilisers
- Bio-Stimulants
- Kingfol Range

**www.omex.com**

OMEX Agrifluids Ltd, Saddlebow Road, King's Lynn, Norfolk, UK  
Tel: +44 (0)1533 817500 Email: agrifluids@omex.com

Intercropping coffee plants with shade trees is a sustainable way for farmers to continue coffee cultivation in the face of the threats posed by climate change.

# Coffee in the shade

Climate change is predicted to have a strongly detrimental impact on coffee production. (Photo: Atstock Productions/Shutterstock)

**C**OFFEE IS A major cash crop in sub-Saharan Africa, forming the backbone of economies in countries like Uganda, Ethiopia and Ghana. With climate change, coffee cultivation patterns across the world are changing, posing serious threats to production and farmer livelihoods.

Studies predict that the regions suitable for coffee cultivation will shrink as a result of rise in temperatures and precipitation patterns shift. A recent report published by the Climate Institute, a non-profit organisation in Australia, revealed that climate change will reduce the global area suitable for coffee by about 50 per cent, apart from exacerbating the threat of diseases like coffee rust and pests like the coffee berry borer.

In Uganda, for instance, areas suitable for coffee production are projected to reduce and it is predicted that if farmers do not take measures to adapt to climate change, 3.5 million Ugandans directly involved in the coffee value chain will lose their livelihoods and foreign export earnings from coffee exports, which was equivalent to US\$415mn in 2015/2016, will be seriously impacted.

There are many ongoing projects to develop low-cost and multipurpose solutions that can help coffee growers across the world adapt to climate change. In many coffee-growing regions, farmers are trying to adapt by planting at higher and cooler altitudes.

**When done right, shade trees not only help farmers continue to grow coffee but also yield enhancements like food, timber, among others.**

## Intercropping

In regions where mountainous terrain is not available, farmers are turning to agroforestry, a practice of intercropping coffee plants with trees. The shade provided by the trees helps reduce the ambient temperature of the coffee plants. When done right, shade trees not only help farmers continue to grow coffee but also yield enhancements like food and timber.

While the benefits of shade trees are many, they also pose a set of challenges. Shade trees often compete with coffee plants for nutrients and prevent optimum amount of sunlight from reaching the plants. Some shade trees also increase the incidences of pests and diseases in certain conditions.

Choosing which shade trees to grow is, therefore, crucial. The considerations that influence the choice of shade trees involve both the other environmental services the shade tree needs to provide, and whether or not that specific species will not cause more harm than good.

## Shade Tree Advice tool

The International Institute for Tropical Agriculture (IITA) and partners in Uganda and Ghana have developed a Shade Tree Advice Tool that can help farmers choose which trees to plant that fit their specific needs. The Shade Tree Advice tool consolidates both scientific and farmer knowledge to help farmers identify trees that fit closely to their specific needs and to help them choose the trees to plant.

The pilot study that developed the first prototype of the Shade Tree Advice tool was conducted in Mt Elgon in eastern Uganda, where the effects of increasing temperature are worse than higher up the mountain. The first step in building a database of shade trees in the region was an on-farm inventory of the shade trees present on 50 farms in the low, middle and high altitude zones, respectively. The second step was to survey 100 farms in each altitude, in which farmers first ranked various tree-based environmental services by preference, and then ranked shade trees in their ability to provide these environmental services. The database therefore was built based on local use and knowledge of shade trees, and can therefore help farmers at specific altitudes choose the right shade tree.

A prototype of the Shade Tree Advice Tool has been built and is currently available as a website. It can be found at [www.shadetreeadvice.org](http://www.shadetreeadvice.org). The database is



uploaded to the tool, and the tool gives the user the ability to access the information in an easy-to-use way, without having to scroll through the raw data. The user, either the farmer himself or an intermediary such as an agricultural extension agent, can choose the country, region, crop and subzone that fits their criteria. They can then choose the environmental services they are interested in, as well as how important each environmental service they have chosen is. The tool then displays the shade trees that best fit the criteria, and the user has the option of learning more about the best shade trees that are being advised.

As the tool is only a prototype at this stage, work is being done to refine it, and an offline app is also envisioned to make it more readily accessible to farmers and remotely based extension agents. The tool is also not specific to just Arabica or even just coffee. The process was also completed for Robusta coffee in the Greater Luweero District of Uganda, where different rainfall gradients were used. Outside of Uganda, studies were done on Arabica coffee along altitudinal zones in China, and among cocoa farms along rainfall gradients in Ghana.



Finding the right type of shade tree is essential to making intercropping work. (Photo: Dr Morley Read/Shutterstock)

Although shade trees are a key practice in adapting to climate change in select perennial agroforestry systems, there has so far not been an easy way to give advice on the

best trees to plant. This tool fills a gap, and with continued work to build the database, it can help advise farmers on how to choose appropriate shade trees around the globe. **E**

**PJB-C**  
BATTERY KNAPSACK SPRAYER

*Endless Possibilities*  
**ONE SOLUTION**

JACTO PJB - 20/16/08c

POWERED BY  
**JACTO BATTERY**

JACTO PJB - 16c

JACTO PJB - 08c

JACTO PJB - 20c

**In the size you need**  
The Jacto PJBc series combines technology with ease of use in three size capacities: 20, 16 and 08 litres. (subject to availability in your area)

**PAN TRADE**

AFRICA SALES ENQUIRIES: PAN TRADE SERVICES LTD - London, UK  
Tel: +44 208 090 1072/Fax: +44 208 959 3319/e-mail: info@pantrade.co.uk

**jacto**

www.jacto.co.uk

Facebook: jacto2m4farm

Twitter: jacto2m4farm



Maintaining high standards of hygiene in eggs set for hatching can play a major role in producing healthier and higher quality chicks. Dr Terry Mabbet explores good poultry practices that can ensure better hygiene and high yield in poultry farms.

## Hygiene management for high hatch numbers



Treatment of hatching eggs is essential to control shell-borne infections in hatched chicks. (Photo: Franz12/Shutterstock)

**G**OOD POULTRY PRACTICE is often a matter of common sense and none more so than health and hygiene measures required for high hatchability of healthy chicks. All else being equal, the cleaner the eggs set for hatching in the incubator, the better are the results achieved as healthier and higher quality chicks. The science is simple. Pathogenic bacteria, which can never be totally eliminated from poultry practice, respond rapidly to the warm and humid conditions in the incubator.

The bird's egg is designed to exclude pathogenic microbes but also to allow free gaseous exchange as the chick embryo respire, grows and develops. This requires

a porous calcium carbonate shell to allow oxygen to diffuse in and carbon dioxide to diffuse out. But egg shell pores are potential weak points through which bacteria can enter to disrupt and destroy developing chick embryos.

Sub-standard hygiene can reduce hatchability by up to 15 per cent but is easily avoided by using common-sense on-farm measures that may be as simple as collecting floor eggs separately from nest eggs.

Microbial contamination of hen's eggs can occur congenitally or extra-genitally. Congenital contamination invariably happens in the ovary and involves a range of well-known pathogenic microorganisms including salmonella bacteria, mycoplasmas and certain virus particles. These egg transmitted pathogens are controlled by vaccination, blood testing and subsequent removal of infected hens or in the case of mycoplasmas, the use of antibiotic egg dipping.

Extra-genital contamination is something that happens after the egg is laid and which typically causes rots, mould growth, bangers (eggs that explode once inside the incubator), early dead chick embryos and a higher first-week on-farm chick mortality, the latter often being the result of yolk sac infection. Eggs laid-on and collected from the floor will be the most heavily contaminated by potentially pathogenic microbes and therefore most at risk.

Evolution of the egg, complete with membranes and a hard and inert but porous calcium carbonate egg shell has furnished the embryo with a comprehensive system of protection for unimpeded growth and development and successful hatching of the free living chick.

The eggshell has thousands of pores that are sufficiently large to permit bacterial cells and fungal spores to pass through and enter the egg. Passage through most of these pores is prevented by the presence of

**Sub-standard hygiene can reduce hatchability by up to 15 per cent.**





a blocking cuticle but sufficient numbers are open to allow the entry of microbes. Two inner shell membranes act as a further barrier and an antibacterial lysozyme, located in the egg albumen, is active against *Staphylococcus* bacteria.

#### Infection routes

Under normal circumstances, a healthy breeder hen lays eggs with an essentially sterile shell. At the point of lay (oviposition) the eggs are hot and moist but cool down quickly which has the effect of drawing (pulling in) contaminating bacteria through the eggshell.

It follows that the environmental conditions into which the egg is laid will have a significant influence and effect on the concentration and range of pathogenic microorganisms that it carries and holds and can potentially transfer into the incubator. Motile bacteria in large numbers, especially in the presence of moisture (eg, condensation) on the external surface of the egg, pose the biggest risk and likelihood of egg penetration and yolk colonisation by microbial contamination.

Even those eggs which are visibly clean can carry anything from 50,000 to one million bacteria. Soiled and dirty eggs may

carry a bacterial load in excess of 10 million. For practical purposes the level of bacterial contamination will depend upon whether eggs are laid in the nest box or laid on the floor.

Condition of floor litter further affects contamination. Damp litter sticks to the birds' feet and feathers while exceptionally dry litter creates dust. Condition and depth of nest-box litter will affect contamination level of eggs laid there, while the manner in which eggs are handled and treated post collection will also affect contamination level, irrespective of whether they were laid in a nest box or on the floor.

#### Clean nests means clean eggs

Key issues involved in the production of clean eggs for incubation and hatching are: design, nature and condition of the nests; separation of soiled eggs from clean ones; frequency of egg collection; degree of care exercised in egg handling;

personal hygiene of those involved in the procedure and the disinfection of eggs.

Nest boxes must be easily accessible (to hens), clean and hygienic, generously supplied with litter and sufficient in number, with at least one nest allocated for every four hens. Overall, they must be sufficiently attractive so that hens do not lay any eggs on the floor. Nest boxes must be in place and position prior to the onset of lay. They should be positioned for easy accessibility and comfort of the hens, rather than convenience for the farmer, as the number one priority.

Nests should be started near the floor surface and elevated gradually up to 30-40 cm from the litter. Softwood shavings are one of the best choices for litter and should be replenished (topped up) or replaced every seven days. Populations of bacteria in the litter can be reduced to safe levels by using prills of an approved disinfectant that are deployed in nest

**Automatic nests offer a range of advantages, including a reduction in the amount of egg handling and a corresponding reduction in the risk of shell breakage and egg contamination.**



## SOLID SOLUTIONS FOR ALL STAGES OF POULTRY PROCESSING

As the world's market leader, Marel Poultry knows how to translate its global knowledge into local poultry processing solutions.

- Solid equipment for new plants or for expansion projects
- Processing solutions for capacities of 500 broilers per hour and higher
- From semi-automatic processing to full automation
- Personal training and support for operating continuity

Visit us at Poultry Africa 2017, 4-5 October, Kigali, Rwanda

Contact us to find out more:

[info@marel.com](mailto:info@marel.com) | [marel.com/poultry](http://marel.com/poultry)

ADVANCING  
FOOD PROCESSING





boxes at rates recommended by the manufacturer.

Automatic nests function best in slatted floor areas and should be closed up at night. This is because hens which sleep in nests, as well as hens with dirty feet resulting from wet floor litter, are significant factors which increase the contamination of nests.

Nest eggs and floor eggs must be collected separately while always making sure egg collectors wash their hands between collections to avoid cross contamination. Floor eggs should be packed separately with clear identification to avoid any mixing of clean and soiled eggs.

Some nests will invariably be more popular than others with the hens and if the eggs are not collected sufficiently frequently from these over-loaded nests then breakages will be unavoidable. Operators should collect eggs at least four times every day with a late afternoon collection to avoid eggs staying in the nest boxes overnight.

### Treatment of hatching eggs is the best way to control shell-borne infections such as salmonella.

Automatic nests offer a range of advantages including a reduction in the amount of egg handling and a corresponding reduction in the risk of shell breakage and egg contamination. Egg collection by hand allows eggs to be sorted and packed directly onto the incubator tray and subsequently conveyed on a monorail to the packing area.



The warm and humid conditions in the incubator make eggs susceptible to microbial contamination. (Photo: Branislavpudar/Shutterstock)



Maintaining clean nesting boxes can help in producing clean eggs for incubation and hatching. (Photo: Thanasus/Shutterstock)

Around four fifths of time spent on a breeder farm is concerned with egg collection and handling. Detailed thought afforded to the most cost effective mode of harvesting of what is essentially a delicate living embryo in an equally delicate shell will pay dividends.

#### Disinfection, dry cleaning and wet sanitising of eggs

There is general agreement amongst veterinarians that treatment of hatching eggs is the best way to control shell-borne infections such as salmonella. Disinfection of eggs can be carried out by dry cleaning followed up by fumigation or alternatively by wet sanitising the eggs. Whether using fumigation or wet sanitisation, poultry producers should only use approved and recommended disinfectant chemicals.

Dry cleaning using Scotchbrite pads or sandpaper is an ideal mechanical method

for cleaning slightly soiled eggs and should be supported by follow-up fumigation of a chemical disinfectant. Fumigation will usually destroy a high proportion of bacteria on the external surface of the shell but several important requirements must be satisfied for its success.

Eggs must be placed on plastic trays to allow adequate circulation of the vapour and the procedure should be conducted in a custom-designed chamber. This must be hermetically sealed (gas tight) to maintain a biocidal concentration and to stop any vapour from escaping. Last but not least, operators must use the recommended dose and employ a gas neutraliser at the end of the procedure.

Fumigation will not be effective if eggs are very dirty or badly soiled because the active disinfectant will not be able to reach the pathogenic bacteria inside the particles of dirt and soil. That is why eggs must be pre-cleaned prior to fumigation.

#### Wet sanitisation of eggs

Sanitising machines will effectively and efficiently disinfect the eggshell and thus avoid the practical problems associated with wet cleaning hatching eggs. Standard sanitising machines are designed to accept trays of eggs on a conveyor and to subsequently spray them with disinfectant. When used correctly they are more cost effective due to significant labour savings.

Temperature of the disinfectant should be higher than that of the egg to prevent bacteria from entering the egg by suction. Operators should only use the concentration recommended on the disinfectant product label which will be high enough to kill pathogenic bacteria without any risk of damage to the egg. Chlorine-generating products are popular but require constant monitoring and replacement with fresh product when the concentration falls below that required for effective disinfection. **E**



**Protect your livestock  
with the new red mite,  
fly and beetle range.**



HokoEx



Permost CS



SoFast



Permex 22 E



Permost Uni Fly Spray



**hi** Animal Housing

[www.hockley.co.uk](http://www.hockley.co.uk) - 44 (0) 161 209 7400

Permex 22 E, Permost Uni Fly Spray contain permethrin and oxamethrin. Permost CS contains permethrin. HokoEx contains cypermethrin. SoFast contains imidacloprid. Use bioicides safely. Always read the label and product information before use.

United Kingdom



**Success  
starts here**



**ROBUST RESULTS**

The result of a balanced breeding program, the Bovans Brown is a highly versatile and robust layer.

- Excellent shell color
- Strong bottom line results
- Superior production and persistency
- Easy to manage in every housing system



[www.bovans.com](http://www.bovans.com)



Spoorstraat 69, 5831 CK BOXMEER, PO Box 114,  
5830 AC BOXMEER, Netherlands-EU

+31 485 801911 | +31 485 801912  
[info@hendrix-genetics.com](mailto:info@hendrix-genetics.com) | [sales@hendrix-genetics.com](mailto:sales@hendrix-genetics.com)



The poultry industry in Africa is going through a stage of unprecedented growth driven by changing consumer patterns and rising demand for poultry products. Olivier Roelfs, regional manager at Meyn Food Processing Technology, speaks to *African Farming* about the fast developing poultry processing market in Africa.



MEYN's Flex Plus drum thigh separator machine. (Photo: MEYN)

## Poultry processing in Africa poised for growth

### Can you tell us a little about MEYN and the markets you cater to?

Meyn is a leading supplier of innovative poultry processing solutions. The Meyn company, established in 1959, is located in the Netherlands and active in over 100 countries worldwide with people who passionately work together to create leading poultry processing solutions. Our three factories are located in the Netherlands, US and Poland. We serve our customers through an international network of 16 sales offices. The main markets we cater to across the globe are Europe, US, Russia, Middle East, Brazil, Mexico, Thailand and China.

### What is your presence in Africa?

Meyn is active all over the continent, from Cairo to Cape town and from Lagos to Nairobi. We have a strong presence in the South-African and Egyptian markets and we are also very active in fast developing markets like Algeria and Nigeria. In order to cater to the majority of the African

countries, Meyn has developed a strong network of local agents who have been trained in our in-house training facilities in The Netherlands in order to give the best possible support to our customers throughout Africa.

**We see more and more processors buying solutions which help them with saving labour costs and reaching higher yields during the process of killing, evisceration, cut up and deboning.**

### Poultry in Africa is described as a market of great potential. Can you tell about the poultry processing market in Africa?

The reports all state the same – the African poultry industry is rising. The drivers are the

fast growing population, a rising middle class and ongoing urbanisation. The efficient feed conversion rate makes growing poultry very popular. Although you see the broiler production numbers rising, still in many African countries a large percentage of the birds are sold on the “wet market” instead of being processed in professional facilities. Of course, Meyn would like to see a change to this but we have to be realistic, in many countries buying broilers in the live market is part of local culture and change will come but it will take time. Cultural and religious diversity and also the large variety in capacity requirements of our customers demands for tailor made solutions.

For the developing markets, for example, we have developed a new offering, the LEAP concept. LEAP stands for low investment, expandable, (semi) automatic processing. This concept is designed for processors in upcoming markets. We have identified a number of steps for effortless growth. It starts with identifying an ideal location, which is



# MOBA

## RELIABILITY

Every minor crack in your egg production chain has huge consequences.

### FARMPACKERS

MOPACK FOCUS ON INDIVIDUAL EGG HANDLING



**Mopack 55**  
Cap. 20,000 eph

**Mopack 70**  
Cap. 25,000 eph



**Mopack 100**  
Cap. 36,000 eph



**Mopack 150**  
Cap. 54,000 eph

Choose a partner to rely on, 24/7.

[www.moba.net](http://www.moba.net)

Visit us at Poultry Africa  
Kigali Convention Center, F03, Kigali Rwanda  
4 - 5 October 2017



## There is a reason why world is moving towards Healthy Animal Food Production



The secret is a centuries old science, now perfected to global standards by Ayurvet. An EU-GMP, ISO 9001-2008 certified company that makes natural feed supplements for farm animals, leading to healthier animals and healthier animal produce like no others. Reduce usage of Antibiotics and synthetic chemicals in your feed and animal food production system with safe, scientific and clinically validated natural solutions.

Wanted Distributors in Morocco, Algeria, Cameroon, Kenya, Tanzania, Ghana and Zambia.

**No Residues Antibiotic Free**

**Give Your Animal Boost of Good Health...**

**...Productivity and Profitability will come Naturally !**

**570 Research Publications**

**Ayurveda**

**Natural**

#### SUPERLIV GOLD

Now Generation  
Growth Promoter &  
Liver Tonic

#### NBIOTIC

Alternative to  
Synthetic  
Antibiotics

#### METHIOREP

Cut your synthetic  
Methionine Addition  
Cost

#### STRESROAK

Natural All time Hit  
Anti-stress Solution and  
Performance Enhancer

#### TOXIROAK GOLD

Herbo-Mineral Broad  
Spectrum Toxin Binder  
and bioreutralizer



AYURVET Limited, Unit No 101-103, 1st Floor, KM Trade Tower, Plot No - H-3, Sector - 14, Kaushambi, Ghaziabad, INDIA  
Ph: +91 120-7100201 Fax: +91 120-7100202; e-mail: [pverma@ayurved.com](mailto:pverma@ayurved.com) web: [www.ayurved.com](http://www.ayurved.com)



big enough to cover the space needed for the customer's final capacity and is close to the farms and the market. A site master plan reflecting the growth and expansion plans is then prepared.

We design the initial set up and while designing take into consideration where the future extension will be installed. The equipment we install is based on a modular design, so once the capacity increases, we simply extend the machines.

Our customers can start with a low capacity processing line and once their market is growing they can expand their plant accordingly. The uniqueness of this concept is that expanding the line capacity is easy and there is no need to discard machines. It incorporates Meyn's top-of-the-line technology at all stages. With the introduction of LEAP, Meyn is able to supply poultry processing solutions with a capacity of 500 birds per hour up to 13,500 birds per hour.

### **Is there a trend of growing automation in the poultry industry in Africa? What are the factors driving this growth?**

Yes, indeed there is a trend towards more automation in the African poultry industry. We see more and more processors buying solutions which help them with saving labour costs and reaching higher yields during the process of killing, evisceration, cut up and deboning. The other factors driving the growth of automation are animal welfare and quality demands. Staff is not always easy to find and once the staff is properly trained there is the challenge of keeping them on board. Machines provide consistent output and quality and of course increasing hygiene during the process is becoming more important.



Olivier Roelfs, regional manager at Meyn Food Processing Technology. (Photo: MEYN)

### **Will automation play a role in meeting the rising demand and greater quality requirements in the poultry industry?**

Automation in the poultry value chain is essential in meeting the rising demand for poultry meat. In general, consumer habits are changing. Nowadays, you see a large young generation of men and women both working during the day and at the end of the day they will buy their groceries in supermarkets or visit a quick service restaurant (QSR). This development asks for different types of products, like further processed meat or cut up parts to be sold in the shops and supermarkets.

Meyn has developed several automatic solutions to cover the need for cut up and deboned products. A good example is our Food Servicer Cut up system which is developed especially to service QSRs. The Meyn Food Servicer cut up system is able to suit all food service eight-piece and nine-piece specifications currently in demand and offers the most versatile and efficient

method of producing fast food products. A similar concept focusing on retail products is our Compact Cut up system. This system is able to handle all basic cuts, including wing, breast and leg processing. The system is easy to operate and offers a highly efficient and compact method of producing high quality cuts, against very affordable costs. The system is easy to manage, easy to install and is immediately operational. The system is pre-wired and the controls are set to go once power is connected. Due to its very compact footprint, it is an interesting solution for processing plants with limited available production space.

### **What are MEYN's latest offerings in poultry processing equipment?**

Being innovative is essential for our business. Looking at the market developments and increase of demand for deboned and cut up products, it is not a surprise that our recent innovations are covering these needs. We have introduced the new high yield thigh deboning solution, a whole leg deboner which saves a lot of manual labour and we have developed a lower capacity version of our very successful high capacity breast deboning machine, the Rapid compact.

While development of new machines is important, developing new services are just as important. We are aiming to support our customers in every possible way. For example, our e-commerce system that provides customers the opportunity to order spare parts 24/7 has proven to be very successful. A helpdesk service that can log into the customers computer systems to give support from a remote distance, but also the several training modules we have developed to support our customers in their day-to-day operation is part of our innovation and support strategy. **E**



The growing demand for processed meat or cut up parts is pushing poultry processors to adopt automation. (Photo: MEYN)



# THINK BIG, START SMALL

## Expand your poultry processing plant as you grow your business!

You are thinking about how to set up a commercially viable poultry processing plant? You want to start small with 500 to 1,300 birds per hour – or you want to upgrade to 6,000 birds per hour capacity?



Consumer demand for poultry products is predicted to increase steadily worldwide.

The Meyn LEAP concept enables poultry processors to match this trend and the trend of wet markets converting into modern hygienic processing plants with a unique and expandable plant concept in which we work with you as your business grows.

Ingenious, flexible and cost-effective, this forward-thinking concept draws on all Meyn's poultry experience and incorporates our state-of-the-art innovations right from the beginning.

**If you're thinking big, Meyn will be with you all the way.**

**meyn**

Poultry Processing Solutions

Meyn Food Processing Technology B.V.  
P.O. Box 16, 1510 AA Oostzaan, The Netherlands  
T: +31 (0)20 2045 000 | E: sales@meyn.com

## Live poultry | turkeys transport crates

The largest worldwide range of collapsible (and non-) live chickens turkeys plastics crates.

Collapsible crates:

80x60x28 cms.

97x58x27 or 42

108x58x27

or 42 cms.

Non-collapsible crates:  
99x58x26 or 42 cms.



Various number of doors available.  
Sliding and swingin doors.  
Dolid and perforated bottoms.

## Systems

Various systems/containers for crops, meat, cheese, vegetables, for your processing plants and farms

Then day - old chick boxex, live quail crates, trays, etc.



INFO AVAILABLE ON  
AUTOMATED LOADING, CONVEYING, WASHING, RESTACKING SYSTEMS.

POULTRY SPECIAL PLASTIC PACKINGS



HEADQUARTERS : Lugano Switzerland  
Ph: 41.91.994.1579 • Fax: 41.91.994.1580  
Email: info@carfed.ch • Web-site: www.carfed.ch

Carfed S.A. via Basilicata, 10 20090 S. Giuliano Milanese - Italy  
Tel. +39 (02) 988.1140 • Fax. +39 (02) 982.802.74  
Email: info@carfed.it • Web-site: www.carfed.it



Poultry Africa 2017 expo and leadership conference for sub-Saharan Africa to be held in Kigali, Rwanda from 4-5 October 2017 aims to open doors for top names in the international poultry industry to foray into the African market.

# Creating an international platform for African poultry

**I**N AFRICA, DUE to a fast growing middle class, rapid urbanisation is driving change. Consumption patterns are changing from a vegetable- to a protein-rich diet. This large-scaled shift calls for the urgent developments in professional farming and availability of up to date technologies and innovations in the African poultry industry.

VNU Exhibitions' Poultry Africa 2017 aims to tap into this fast developing sector which is preparing to be introduced to new products and innovations and provide a platform for international companies to reach out to the sub-Saharan Africa market. The event expects to see participation from more than 1,000 visitors from across sub-Saharan Africa. Around 70 companies exhibiting in the segments of feed, feed ingredients and additives, animal health, breeding, hatching, farm production, slaughtering and Processing (meat) and handling/processing (eggs) will take part in the expo.

This event is organised by VIV worldwide and International Hatchery Practice and International Poultry Production in close co-operation with the Rwandan development board, the Rwandan Ministry of Agriculture and Animal Resources and the national development bank of Rwanda, BRD.

Speaking about the conceptualisation of the event, Diána Tóth, the event manager of the show, pointed out how there has not yet been a professional trade show dedicated to African poultry sector. "Poultry Africa 2017 is going to be the first professional business event for progressive poultry producers in sub-Saharan Africa," she said.

The show comprises of three elements: the expo, the leadership programme and technical seminars.

## Poultry Africa 2017 Expo

The Poultry Africa 2017 expo aims to give interantional players access to the sub-Saharan African market. "There is huge business potential in poultry markets across Africa. Through this event we are offering a platform for our clients to roll out their businesses in sub-Saharan Africa."

The expo will have around 70 international exhibitors representing the entire



poultry supply chain from genetics to hatching, breeding, feed, feed machinery, animal health and processing.

"We have had very good response to the event. The exhibition is 80 per cent full, with only a few spots left. Exhibitors from all over the world, mainly Europe, North America, China, India, Turkey, have registered for the expo."

Some of the biggest names in the international poultry industry including Big Dutchman International, CEVA Sante Animale SA, Evonik Nutrition & Care GmbH, Hendrix Genetics BV, Jamesway Incubator Company Inc, Marel/Stork Poultry Processing and ROXELL will exhibit at the event.

**Exhibitors from all over the world, mainly Europe, North America, China, India, Turkey, have registered for the expo.**

## Leadership programme

The Leadership programme of Poultry Africa 2017 is designed for high level management personnel in the African poultry industry who are interested in improving

production and investment to be more efficient and profitable in their farms. The leadership programme will take place on both days of the event and can be divided into two parts. The morning sessions on both days will be held by the World Veterinary Poultry Association, WVPA and will feature speakers on veterinary issues. Antimicrobial resistance, zoonotic pathogens, avian influenza and poultry welfare are some of the topics that will be adressed.

Afternoon sessions featured by VIV worldwide and partners, RABO bank and WATT Global Media will focus on business outlook. Topics such as trade opportunities for Africa, optimal feed supply and feed production for Africa, marketing outlook Africa and profitable farm management will be covered in these sessions.

## Technical best practises seminar

The third component of the event, technical best practises seminars, will be hosted by the exhibitors themselves will present their experience and the best solution for specific challenges that face the industry. Breeding and hatching, animal health, feed production and nutrition, farm management and finance will be some of the topics discussed. **E**





## Optimising gut health and feed efficiency

FEED EFFICIENCY IS one of the most important factors in animal production, it directly influences the feed costs and the total costs of production. In many farms the feed costs account for more than 50 per cent of the total production costs and therefore a reduction of it can be crucial for the overall profitability in animal production. Today's diets contain highly digestible ingredients and enzymes, which can be complemented by feed processing and the inclusion of feed additives to further improve the gut health of animals and consequently the feed conversion rate and performance.



Feed additives can play an important role in improving gut health and reducing the use of antibiotics in animal production. (Photo: krugloff/Shutterstock)

German feed additives company EW Nutrition has been working towards helping livestock farmers optimise the gut health and feed efficiency of their animals with a strong science based product portfolio in the field of functional, innovative feed and food additives. The current product portfolio of the company includes toxin solutions (Mastersorb), secondary plant compounds (Activo), natural egg immunoglobulins (Globigen), MOS (Bgmoss) and protected urea (Prote-N).

The Activo line was developed as a phytobiotic products range. The in-feed variant of this additive is a micro-encapsulated, synergistically acting combination of secondary plant compounds – natural substances extracted from plants. The formulation has been developed for stimulation of appetite and digestion, adapted for the use in different birds from breeder to laying hens and commercial broilers. As Activo products improve gut health, they are also a valuable tool to reduce the use of antibiotics in animal production and fight the challenges of antibiotic resistance.

Activo Liquid offers selected secondary plant compounds in combination with organic acids to be applied via the drinking water. This liquid complementary feed is used for appetising purposes and to prevent and fight bacterial challenges. It proposes antimicrobial effects and is flexible in its use on farm. The product supports the birds in feed-related challenges and stressful periods of production.

The ingestion of mycotoxin contaminated feed has consequences in the animal's health, welfare and performance; ranging from lower nutrient absorption to organ injury, secondary infections and death. Additionally, disruptions in the intestinal epithelium – mediated by the ingestion of mycotoxin contaminated feed – promote an increase in the population of exotoxin producing *Clostridium perfringens*. Subclinical or clinical necrotic enteritis can develop, leading to low performance, diarrhoea, dehydration and high mortality. The Mastersorb Product Line was developed thinking about an innovative solution to control toxin challenges; composed of ingredients that act synergistically together, Mastersorb products prevent the absorption of myco and bacterial toxins in animals and improve liver and immune functions.

# mastersorb<sup>Gold</sup>

# mastersorb<sup>fm</sup>

Mastering Toxins

**Do you have an idea about the damages caused by mycotoxins?**



ew | nutrition

**Supporting animal health and welfare through feed efficiency and better return of investment**

[www.ew-nutrition.com](http://www.ew-nutrition.com)



Recombinant vector vaccines hold potential to change the approach of Newcastle disease (ND) prevention and are strong tools toward the long-term disease control. Dr Reza Bentaleb, poultry business manager at Ceva Santé Animale writes.

# Redefining Newcastle disease control

Early vaccination is vital to fighting ND in poultry. (Photo: Szepei/Shutterstock)

**O**NE AMONG THE top five of the most costly poultry diseases, the economic impact of the highly contagious Newcastle Disease (ND) is enormous. However, despite being recognised for almost 90 years, being caused by one single serotype of paramyxovirus and having commercially available vaccines, ND is still a grave challenge to veterinarians and farmers all around the world. In Africa, particularly, this disease is a constant threat to the modern poultry industry and backyard farming.

**Live attenuated vaccines, which are the backbone of ND vaccination programmes, can cause many adverse effects in the birds.**

## Limitations of ND vaccination programmes

Vaccination is an important part of the prevention. However, although vaccination programmes in endemic countries are usually very heavy, demanding and directly or indirectly very costly, protection is not always achieved.

Vaccinations conducted in the farms, either to avoid early interference, or to

boost previous immunisations, are very often poorly conducted.

Moreover, live attenuated vaccines, which are the backbone of ND vaccination programmes, and several boosters of which are necessary in layers even during lay, can cause many adverse effects in the birds. They may be responsible for causing lesions in the upper respiratory tract and post vaccination and rolling reactions (PVR) that slow down the growth, worsen the flock's uniformity, make the chickens susceptible to other pathogens and reduce egg production.

There have been major innovations in vaccines brought in through biotechnology to fight these issues associated with vaccination. One of them has been the development of a live recombinant vector vaccine, Vectormune ND.

## The vector HVT-F vaccine

Recombinant vector vaccines are produced by inserting one or more genes from a microorganism (called donor) into the genome of another microorganism (called vector). In this way, the immune-relevant antigens of the two organisms are presented to the immune system of the animal by replication of the vector antigen. Therefore, immunity against both the vector and the donor (pathogen) will be induced.

Vectormune ND is a recombinant vector vaccine of the rHVT-F type, which uses HVT as the vector and in which genome the Fusion (F) gene of a genotype I, D-26 strain of NDV has been inserted.

The HVT virus used to carry and express the F gene is the safe and very stable virus, used to vaccinate against Marek's disease.

The "F" insert, the insertion site, the promoter selected to ensure the expression of the F gene are all key elements explaining the uniqueness of this vaccine with most of them patented and proprietary to Ceva Animal Health.

## Onset of immunity

The onset of immunity induced by Vectormune ND depends directly on the replication of the HVT virus (vector) and consequently on the expression of the fusion (F) gene of ND virus.

The protection progressively increases with time reaching full protection at around three to four weeks of age. In fact, immunity can be detected as early as two weeks after vaccination.

However, in regions where ND pressure is high, it is recommended to strengthen up the protection during the first weeks of age by applying a live ND vaccine by spray at one day of age (in the hatchery) and,





depending on the case, adding a field booster at around 10-15 days of age.

### Duration of immunity

One of the trends in poultry farms is to keep the layers longer in the farms without molting (100 weeks), but the duration of immunity induced by the vaccines has become critical.

Vectormune ND uses herpes virus of turkey (HVT) as the vector. It remains in the birds for their whole life and its replication constantly boosts the ND protection. Therefore, a single vaccination with Vectormune ND at one day of age, after reaching complete clinical protection against NDV challenge at three to four weeks of age, induces 100 per cent of clinical protection up to 72 weeks of age and more. It removes the necessity for boosters with live ND vaccines (as lasota) commonly applied from three to four weeks of age and during production, thereby eliminating the stress of several vaccination and providing better focus on the control of other respiratory diseases such as infectious bronchitis.

### Reduction of shedding

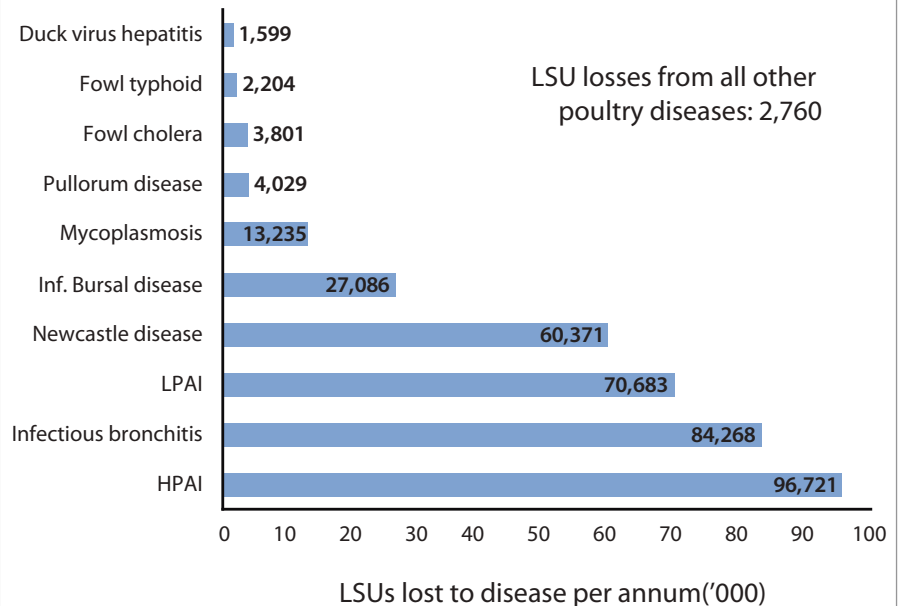
Since a poultry producer's main objective is to prevent high mortality, vaccines are now also evaluated by their capacity to reduce the shedding of virus.

Compared to live or killed vaccination programmes, Vectormune ND significantly reduces the re-excretion of the wild NDV through the oro-pharyngeal (or oro-nasal) and cloacal routes.

In fact, this capacity to block the challenge virus increases with the time. The difference in shedding reaches more than one million-fold compared to controls.

### Wide spectrum of protection

All ND viruses belong to a single serotype (PMV1). However, with the improvement of molecular techniques, different genotypes



Top 10 diseases in poultry from 2006-2009. (Photo: Ceva Animal Health)

of the NDV have been identified in different geographical areas.

NDV may induce strong variation in the severity of disease and this is why they have been put into different categories according to tropism, pathotype and virulence such as velogenic, mesogenic, lentogenic and apathogenic-enteric strains. NDV strains are also classified in various genotypes.

The most prevalent genotypes currently are V and VII. Genotype VII is widespread in Asia,

the Middle East, Africa and South America, genotype V is widespread in Central America and genotype VIII and IX are also found in South Africa and China, respectively.

Several challenge studies were conducted in different countries and under different conditions using commercial broilers, commercial layers, commercial turkeys and SPF chickens. In all cases, the protection induced by Vectormune ND was extremely high against all genotypes tested.

### Protection against ND

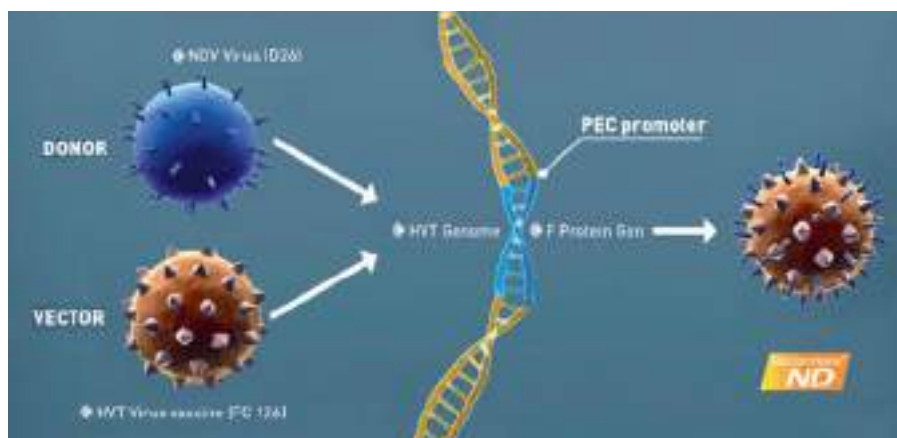
Vectormune ND will most probably change the approach of ND prevention and will soon be considered as the strongest tool toward the long-term control against the disease.

In high challenge areas, where ND outbreaks bring unacceptable losses to poultry producers, Vectormune ND has proven its superiority to other conventional vaccine as it evades MDA NDV and can be applied in the hatcheries (ie, in controlled environment and with well trained workers).

With more than 20 billion chickens vaccinated since the product's introduction in 2007, Vectormune ND induces cross-protection against all tested genotypes (II, IV, V, VII, VIIa, VIIb, VIIc, VIId, VIIe and VIII), reaches complete clinical protection, provides 100 per cent of protection for over 72 weeks of age and reduces the shedding of the virus.

However, even with efficacious vaccines, it is necessary to take into consideration the limits of biosecurity, the urgent need of training and legislation to effectively fight ND. Without such a broad approach, ND will continue to impact producers for a long time to come. **E**

**Compared to live or killed vaccination programmes, Vectormune ND significantly reduces the re-excretion of the wild NDV through the oro-pharyngeal (or oro-nasal) and cloacal routes.**



Schematic representation of the construction of Vectormune ND. (Photo: Ceva Animal Health)



Paul Grignon Dumoulin, global technical service coordinator at Hendrix Genetics Layers, writes about the optimum brooding conditions to ensure the health of layer chicks.

# Brooding – the key to healthy layer chicks



The temperature of the chicks should be measured with an ear thermometer pressed gently onto the cloaca after arrival in the house. (Photo: Hendrix Genetics Layers)

**I**N ORDER TO give your flock the best start possible, brooding conditions for newly placed chicks is very important.

Because chicks are sensitive to their surroundings during the first five days of life, it is crucial to make sure their environment is clean, well-organised, well-lit and kept at the right temperature and oxygen levels. Focusing on a few keys areas will ensure that the day-old chicks are comfortable and will develop successfully over the next weeks as they transition to the pullet stage.

## Water and feed

The first step is to make sure the chicks are eating and drinking as soon as they arrive in the poultry house. Water lines must be clean, so it is recommended to flush the water lines one to two hours before the day-old chicks arrive at the house.

When setting up the drinkers, keep the nipple line at its lowest level during the first week, and keep the water pressure low so that all the nipples carry a droplet. It is important that the chicks can easily access their water once placed so that they can start hydrating after being transported from the hatchery.

Place the feed close to the water lines to ensure all chicks in the barn can access their feed and water and begin to eat and drink right away. If the majority of the flock can access what they need at the beginning of development, this will ensure they are uniform in their size and developmental

stage. This will be important later on to be able to feed the flock according to their stage of development and production.

## Lighting

Day-old chicks and reared pullets need sufficient light to explore their new home and find their way to food and water. Especially if the birds are placed in a floor, slat, or aviary system, they will need to be able to see where to find the feeders and drinkers. A minimum of 20 lux is recommended.

## Temperature

The temperature of the air, floor, litter and equipment in the house must be optimum to keep the chicks comfortable. This will greatly affect their health and ability to properly develop bodily systems.

Although the behaviour of the chicks is a good indicator for the in-house temperature (are the chicks huddled together for warmth? Are they opening their wings and panting?),

**Because chicks are sensitive to their surroundings during the first five days of life, it is crucial to make sure their environment is clean, well-organised, well-lit and kept at the right temperature and oxygen levels.**

measuring body temperature is more accurate. After arrival in the house, the temperature of the chicks should be measured with an ear thermometer pressed gently on to the cloaca, 40°C is recommended.

It is important for African farmers to take time to warm up the poultry house before chick delivery. Often in warm climates, the air temperature is sufficient, but the litter/floor or equipment/cage temperature may be too cold. Concrete floors should be at a minimum of 28°C before any litter is distributed, and litter or equipment/cages should be 30°C before chick placement.

## Ventilation

Since many egg farmers in Africa use an open house system, one common practice is to place additional plastic curtains to keep heat within the house. Use this method with caution since it is important to keep air circulating throughout the environment. Without proper ventilation, the birds can be exposed to high levels of CO<sub>2</sub> or even CO, causing mortality.

Both day old-chicks and reared pullets need sufficient supply of oxygen and removal of CO<sub>2</sub> and ammonia. Relative humidity should be at a minimum of 60 per cent; continue to register this daily. It is also important to be aware of the risk of high CO<sub>2</sub> levels when using open fire heaters.

Keep an eye on these key areas to ensure the future successful development of your flock. **E**



# INSTALL THE ULTIMATE ANTIVIRUS



**Vectormune<sup>®</sup>**  
**ND**

**vectormune**  
**ND RISPENS**

**1 STEP FORWARD  
IN NEWCASTLE  
PROTECTION**

induces 100% of complete  
clinical protection at 3 to 4  
weeks of age, up to 72 weeks  
of age and more

**Vectormune<sup>®</sup> ND reduces Newcastle Disease virus **shedding**,  
with maximum **protection** and no **side effects**.**





## Improved breeds to boost poultry production in Nigeria

A TEAM OF experts from the African Chicken Genetic Gains (ACCG) in Nigeria has developed a new disease-resistant breed of chicken with higher egg output.

This was stated by Funso Sonaiya, the principal consultant, ACCG-NG and lecturer in the Department of Animal Science, Obafemi Awolowo University, according to Premium Times.

ACCG is an Africa-wide collaboration led by the International Livestock Research Institute and funded by the Bill and Melinda Gates Foundation that works to test and make available high-producing, farmer-preferred chicken strains that increase smallholder chicken productivity in Africa.

Tests were carried out in the Federal University of Agriculture Abeokuta, Fol-Hope Farms, Ibadan as well as in five zones – Kwara, Rivers, Imo, Nasarawa and Kebbi states – involving 2,100 farmers and the 'six genetics' chromosome. In the last two years, the organisation had conducted extensive baseline survey of smallholder poultry



The new breed produces a higher number of eggs compared to local breeds. (Photo: Anton Havelaar/Shutterstock)

farmers in Nigeria and distributed over 65,000 chicks to 2,100 smallholder chicken farmers in 60 villages across five main agro-ecological zones.

"The six genetics produces up to about 200 eggs annually while the local breed

produces less than 65 annually. The adult size for a local breed which is what is commonly available in many homes/poultry farms is 1 kg at 20 weeks while the new breed of six genetics chicken weighs 3 kg at 20 weeks," Sonaiya said.

## Jamesway outfits Hendrix's new hatchery

GLOBAL INCUBATOR COMPANY Jamesway has announced that it will be providing equipment for Hendrix's new genetics facility in Grand Island, Nebraska, USA. This 24 million layer chick hatchery is supplied with Jamesway Platinum 2.0 Single-Stage incubators and hatchers.



The new facility is a 24 million layer chick hatchery. (Photo: Martchan/Shutterstock)

The Platinum 2.0 with its removable ECU allows the entire machine to be fully disinfected in minutes, giving it high level of biosecurity. Jamesway will also supply the HVAC systems, 30 P120 incubators and 18 P40 hatchers. The hatchery's opening is scheduled for 15 August with the first hatch to be pulled within the last weeks of September.

Based in Boxmeer, the Netherlands, Hendrix Genetics is a privately-held, international multi-species breeding company with activities in layer, turkey, swine, traditional poultry and aquaculture breeding.

The layer business unit of Hendrix Genetics breeds pure line layers and produces parent stock of day-old chicks in five main production centres.

**IMPEX**

Innovative drinking technology

Impex Barneveld BV  
Harselaarseweg 129 | P.O. Box 20 | 3770 AA Barneveld | Holland  
T +31 (0)342 416641 | F +31 (0)342 412826 | [www.impex.nl](http://www.impex.nl) | [info@impex.nl](mailto:info@impex.nl)

Visit us at Poultry Africa  
October 4 & 5 Kigali,  
Rwanda - Stand B02

ORIGINAL FOR LIVESTOCK





# Turn real-time data into real world efficiencies.



**Pennent® Mill Manager.** Working as the operational hub for your mill, Pennent® Mill Manager software links critical feed mill functions into one user-friendly interface.

By providing deep visibility into all aspects of your feed mill in real time, Pennent® Mill Manager gives you the power to manage your feed mill with improved efficiency, more accuracy and greater control.

From formulation through payment, Pennent® Mill Manager connects systems and processes across your feed mill. Data is entered only once, saving time and reducing errors. And, the system platform is designed to integrate with existing enterprise software.



- Improve operational efficiencies to reduce costs



- Make better decisions, faster, using real-time data



- Streamline regulatory compliance with accurate record keeping

[formatsolutions.com](http://formatsolutions.com)

Contact us to discuss our full range of products.

Tel: +1-800-701-5794 or +1-952-984-4700, option 3 (USA) or +44 1483 726081 (UK)

Email: [FS\\_Support@cargill.com](mailto:FS_Support@cargill.com)



In the face of erratic weather patterns, more smallholder farmers are turning to irrigation, a trend that holds great potential for improving agricultural productivity in Africa.

# The importance of smallholder irrigation

**A** REPORT BY the International Food Policy Research Institute (IFPRI) states that although irrigation in Africa has the potential to boost agricultural productivities by at least 50 per cent, food production on the continent, especially among small-scale farmers is almost entirely rain-fed.

"The high yields obtained through irrigation, coupled with other benefits such as increased incomes, food security, employment creation, drought relief savings are an indication that irrigation can be a vehicle for the long term agricultural and macro-economic development," an FAO report on smallholder irrigation states. With water being the scarcest resource especially in the smallholder sector, the need for irrigation development in this sector is apparent.

However, the past few years have seen a sharp rise in irrigation among small-scale farmers in sub-Saharan Africa. Climate change which has put most farmers at the mercy of erratic rainfall is quoted as the major reason driving this trend. This coupled with the greater demand for food by growing populations around the world is pushing farmers to seek alternate measures to ensure better harvests.

The International Food Policy Research Institute (IFPRI) estimates that more than one million hectares of small farms are now under irrigation in sub-Saharan Africa. In Tanzania, for instance, the area of small farms with access to irrigation rose from 33,500 ha in 2010 to about 150,000 ha in 2016, according to IFPRI figures.

However, there is still a long way to go. Speaking at a World Water Week gathering in Stockholm IFPRI researcher Ruth

Meinzen-Dick said that up to 29 million ha in Tanzania alone could potentially be irrigated. She also pointed out that boosts in irrigation could help protect the region's food security in the face of more extreme weather conditions driven by climate change.

"Smallholder farmers' irrigation is a climate resilience option," said IFPRI researcher Dawit Mekonnen based in Ethiopia told *Reuters*.

## Smallholder irrigation

In different parts of the continent, large-scale, government-funded irrigation systems have been established to provide farmers access to irrigation. While many of them have met with success, it is still an uphill climb for smallholder faced with the urgency of climate change to gain access to irrigation.

Research by the International Water Management Institute (IWMI) has found that many smallholders taking the lead and investing in their own low-cost, small-scale irrigation systems. Surveys carried out by IWMI reveal a growing trend for individual and community-owned agricultural water management systems in sub-Saharan Africa. In Ghana, for instance, small private irrigation schemes were found to cover 25 times more land than public irrigation schemes, the *Guardian* has reported.

The AgWater Solutions project, conducted by the IWMI revealed that supporting smallholder irrigation could have a significant impact on productivity and incomes.

The systems used for small-scale irrigation, such as pumps and on-farm ponds, are relatively cheap and require far less

investment than large scale irrigation projects. An IFPRI report titled *What Is the Irrigation Potential for Africa?* reveals that the irrigation potential of Africa calculated much greater returns from investing in small-scale agriculture than in large-scale, dam-based systems. The internal rate of return (IRR) for large irrigation projects was found to be seven per cent, but 28 per cent for small-scale irrigation because it provides greater access.

## Challenges in expanding irrigation

One of the major hurdles in irrigation development in sub-Saharan Africa is the lack of infrastructure. A good percentage of ground water resources in sub-Saharan Africa are not mapped, making it hard for smallholders to know where water is available.

"Sub-Saharan Africa faces large challenges to implementing irrigation. Those challenges are related to low levels of expertise, knowledge, and capacity to develop and manage irrigation; the absence of an adequate policy and strategic framework; the often disappointing results of previous irrigation development and the need for continued support for recurrent costs from the public sector; relatively high costs of conventional irrigation development and increasing competition over water," the IFPRI report states.

While growing access to more affordable Chinese-made water pumps is encouraging more farmers to irrigate their farms, expanding access to irrigation on a larger scale will require changes at the policy level. Education and training of farmers about irrigation and how to implement it efficiently and sustainably are of vital importance. **E**



# CIMBRIA & GSI JOINED TOGETHER

GLOBAL LEADER IN GRAIN  
AND SEED SOLUTIONS



## CIMBRIA & GSI

THE PERFECT MATCH FOR GRAIN  
AND SEED TURNKEY SOLUTIONS

Joined together Cimbria and GSI are the world's largest supplier of equipment, solutions and technologies for the grain and seed industry.



[WWW.CIMBRIA.COM](http://WWW.CIMBRIA.COM)



[WWW.GSIEAME.COM](http://WWW.GSIEAME.COM)

SOLUTIONS. TOGETHER.



Much of the recent progress in baler development has concentrated on machines for making big square or round bales, but small, conventional balers are still the most popular choice on African farms. Mike Williams reports on the latest developments and innovations in the baler market.



The biggest selling Claas balers in Africa are the two Markant series models. (Photo: Claas)

## Innovation driving progress in balers

**A**TTRACTIONS OF SMALL bales include being light enough to be handled manually and avoid the need for high capacity lifting and loading equipment. They are made by balers with a relatively low price that attracts customers who do not have a big work load, and the balers are suitable for tractors in the popular 45 to 70 hp size range. The bales are also a convenient size for small numbers of livestock.

The SB series small balers from Case IH are available in three models, with the SB541 at the top of the range attracting the biggest sales. The SB541 specification includes a 1.91 m wide pick-up reel, the widest in the range, and like all SB models it has knotters which are gear driven for reliability. Twine and wire tying versions are available, with twine being the most popular choice generally in Africa, although some customers in North African countries prefer the wire version.

Tractor recommendations for the Markant series balers from Claas are 45 hp for the 55 model, increasing to 60 hp for the Markant 65. Both balers share the same 46 cm x 36 cm bale cross section, the bale length is adjustable from 0.4 to 1.10 m and the specification for both balers includes a cable operated lift mechanism for the pick-up reel, with hydraulic lift available as an

**Attractions of small bales include being light enough to be handled manually and avoid the need for high capacity lifting and loading equipment.**

option. Important differences between the two Markants include a 1.85 m wide pick-up on the 65 instead of 1.65 m on the 55, and the 65 has an extra tine on the feeder assembly to cope with a bigger flow of crop material and it also has a larger twine box.

The recommended minimum power requirements for New Holland's BC5060 and BC5070 small balers are 45 and 60 hp and both make bales up to 132 cm long with a 46 cm x 36 cm cross section. Between them, the two BC series models account for more than two-thirds of the New Holland baler sales in Africa, with the lower specification 5060 easily the most popular model.

### Big square balers and round balers

In spite of the continuing popularity of small bales, sales of big square balers and round balers are increasing, particularly on the larger farms with a sufficient work load to

justify the extra cost of the baler and special handling equipment. Because of their shape, size and high density, big square bales are ideal for handling large amounts of bulky crop material, and this is a big advantage where animal feed or straw has to be transported over long distances. Big square bales are the obvious choice for supplying hay and lucerne from Africa to the expanding export markets in the Middle East, and they are also used for transporting sugar cane for biomass projects.

The handling and transport efficiency of big square bales is influenced by the bale weight, and some of the leading manufacturers have recently introduced new and updated models offering increased density or a bigger bale size, or in some cases both. The new BigBaler Plus models from New Holland are an example, producing heavier bales by increasing the density by up to 10 per cent and also by extending the maximum bale length to 260 cm to provide a bigger volume. The four BigBaler Plus models were announced last year with bale cross sections ranging from 80 cm x 70 cm for the 870 model to 120 cm x 90 cm for the 1290 baler at the top of the range. Design features available on the new models include a sensor that records bale weights automatically, an idea New Holland



helped to pioneer using weighing equipment that is said to be accurate to within plus or minus one per cent. Moisture sensing is also available as well as a mis-tie sensor that checks the knotter performance and SmartFill equipment helps to fill the chamber evenly to produce uniform bale density.

### Technological innovations

Sensors for measuring individual bale weights and the moisture content of the crop material are also available in the options list for the LB series big square balers from Case IH, and both are increasingly popular among contractors and big acreage farmers who need information about crop yields. By using a GPS link on the tractor, bale weight and moisture content information can also be used to produce maps that help to identify yield variations, the makers explain. LB series balers are available with 1.98 m or 2.23 m pick-up reel widths and the bale chamber cross-section is either 80 cm x 90 cm or 120 cm x 90 cm.

**In spite of the continuing popularity of small bales, sales of big square balers and round balers are increasing, particularly on the larger farms .**

The OptiForm bale chamber on two of the six models in Massey Ferguson's MF 2200 big baler range can increase the maximum bale weight by up to 20 per cent by achieving a higher density. OptiForm is standard equipment on the XD or 'Extra Density' version of the MF 2270 baler and



The BB1290 baler is the top model in New Holland's BigBaler Plus range of big square balers. (Photo: New Holland)

on the MF 2290 model at the top of the range. The 2270XD model has a 120 cm x 90 cm bale chamber, increasing to 120 cm x 130 cm on the 2290, and like the rest of the 2200 baler series, the OptiForm models are available with single or tandem axles. They also include the new C100 Bale Monitor control screen with a range of functions including electronic adjustment of the bale length. Automatic chain lubrication is standard on all models and bale weighing is an option.

Claas offers six models covering five different big square bale sizes in their Quadrant baler series, said to be the biggest choice of bale dimensions and crop cutting systems currently available. The bale cross section measurements range from 80 cm x 50 cm up to 120 cm x 100 cm and the equipment list on the latest models includes redesigned knotters with an oscillating fan producing a 140 kph air blast to clear crop debris from the area around the knotters. Also, new on some Quadrant models is a hydraulic drive option available for the pick-up reel, the top press roller and the feed auger.

The increased interest in round balers is confirmed by the growing demand for the fixed chamber FB 3130 and 3135 models in the Kuhn range. Kuhn is also seeing an increase in sales of their VB 2260 and 2265 variable chamber models for baling crops such as grass and alfalfa, and there is also an increase in the number of customers using balers with crop chopping equipment. On some of the bigger livestock farms and cooperatives there is a demand for a baler/wrapper combination for harvesting high quality silage.

Where crop material has to be transported over longer distances, the preferred option for some Kuhn customers is to use big square bales from their LSB range, with 120 cm x 70 cm and 120 cm x 90 cm bales emerging as the most popular sizes. The Kuhn LSB range includes the standard models and the DX versions designed to achieve higher densities, and there is a demand for both versions.

Jurgen Schlebusch of John Deere in South Africa says one of the reasons for the increasing demand for both round and big square balers is the fact that urbanisation and improved living standards are helping to increase the consumption of beef and other animal proteins, creating the growth market for machinery to increase the production of quality hay and other feeds to meet this demand.

The newest addition to the John Deere baler range for Sub-Sahara countries is the F440E, a fixed chamber round baler designed as an entry level model available at an affordable price to suit the needs of smaller farms. Pick-up width is 1.5m with a 1.9 version available for customers with heavier windrows, the bale diameter is 1.2m and the F440E can be equipped for net wrapping or for twine or both.

### The 'camless' pick-up

A development that is available from a growing number of baler manufacturers is a pick-up reel that does not have a cam track mechanism. This is a feature that was



Bale weighing and moisture measuring sensors are available for LB series big balers in the Case IH range. (Photo: Case IH)

pioneered by Krone when their EasyDrive pick-up first appeared 10 years ago on the Comprima round baler, and since then the 'camless' pick-up has been adopted by other companies. Eliminating the cam mechanism is said to offer a number of benefits including fewer moving parts to help increase reliability and reduce the service requirements, it allows faster working speeds to achieve a smoother flow of crop material with increased output, and the noise level is reduced.

A unique feature of the Krone Comprima round baler is the special chamber design that allows it to operate with either a fixed, a semi-variable or a fully variable diameter baling action. The Krone range also offers the Bellima fixed chamber round baler with a minimum power requirement of only 34 hp. The bale diameter is 1.2 m and the standard version has a 1.4 m pick-up, and a 1.8 m wide version is on the options list. Krone also offers a range of BiG Pack big square balers including the Multipack model that can make a single bale consisting of up to

The new John Deere F440E round baler has a 1.9m wide pick-up and a fixed chamber making 1.2m diameter bales. (Photo: John Deere)



The MF 2270XD 'Extra Density' baler from Massey Ferguson can increase bale weights by up to 20 per cent. (Photo: Massey Ferguson)

**A development that is available from a growing number of baler manufacturers is a pick-up reel that does not have a cam track mechanism.**

nine individual small bales, an arrangement that offers small bale versatility with big bale handling efficiency.

#### The Lely Welger range

The Lely Welger range of round balers from Holland includes both fixed and variable chamber versions, starting with the RP205 model making 1.25 m fixed diameter bales and equipped with a 2.25 m wide pick-up designed to work without a cam track. The 1.25 m fixed diameter bale chamber also features on the RP245 model which has a

higher specification including a crop chopping unit to increase the bale density. Lely was the company that introduced the HydroFlex control system that helps to avoid blockage problems when working in heavy and uneven swaths. If crop material starts to form a blockage as it travels into the bale chamber, a section of floor is lowered to increase the aperture and allow the material to clear, reducing the risk of hold-ups and, in some situations, allowing faster working speeds.

Lely is also working with the Vermeer company in America to develop the first non-stop round baler, a project that is said to be almost at the production stage, with prototype balers working on farms in several countries this year. Called the CB Concept, the new baler does not stop or slow down to release each completed bale, allowing work rates to increase to as much as 120 bales per hour while also simplifying the tractor driver's work load. **E**

The Lely CB Concept experimental non-stop round baler is said to be close to the production stage. (Photo: Lely)



**MASCHIO**  
**GASPARDO**  
Growing Together

maschio.com





# AGRI TECHNICA<sup>DLG</sup>

THE WORLD'S NO. 1

**JOIN US AT THE WORLD'S LARGEST  
AGRICULTURAL MACHINERY TRADE FAIR!**

- 2,900 exhibitors from 52 countries
- 452,000 visitors from 115 countries
- 394,000 m<sup>2</sup> exhibition area in 23 halls

## 2017

**WHERE INNOVATION MATTERS.**

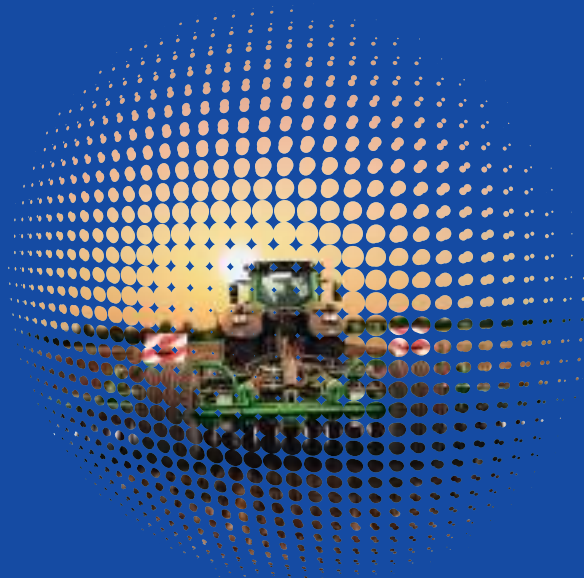
12-18 NOVEMBER HANOVER, GERMANY | PREVIEW DAYS 12/13 NOVEMBER

[www.agritechnica.com](http://www.agritechnica.com) | [facebook.com/agritechnica](https://facebook.com/agritechnica) | made by DLG

**MORE INFORMATION:**

Hotline: +49 69 247 88-265

E-Mail: [expo@dlg.org](mailto:expo@dlg.org)



## Turning something small INTO SOMETHING GREAT

Don't leave it to chance



### Equipment for the FEED AND BIOMASS INDUSTRY



GRAF GmbH  
D-68542 Heddesheim  
[info@graf-gmbh.com](mailto:info@graf-gmbh.com)  
[www.graf-gmbh.com](http://www.graf-gmbh.com)

GRAF Equipment GmbH  
D-76464 Konstanz  
[info@graf-equipment.com](mailto:info@graf-equipment.com)  
[www.graf-equipment.com](http://www.graf-equipment.com)



Providing farmers with easy access to reliable data is essential in order to improve agriculture production and food security in Africa.

# Access to data crucial to food security

Access to drought forecasts, rainfall distribution and other climate data can help farmers better plan their resource utilisation. (Photo: Rudy Lopez Photography)

**T**HE USE OF data in agriculture is growing at an unprecedented rate with innovations in precision farming and the integration of the internet of things and big data in farming. However, in sub-Saharan Africa, the use of data for decision-making and action for agricultural growth is obscured by many challenges.

During a ministerial conference on agriculture and nutrition data at the 4th Agritec Africa International Exhibition in Kenya, key players in the agricultural sector including policymakers, farmers, private agribusiness firms and financial institutions came together to discuss the elusive role of data in African agriculture today. The conference, which was organised by the Global Open Data for Agriculture and Nutrition, discussed efforts to reduce food crises in Africa.

According to experts, available data remains largely inaccessible to players along the agricultural value chains such as farmers, processors, traders and consumers. With the growing threats of climate change and the fast escalating demands of food security, the need to integrate data in agriculture has never been as crucial as it is now. The FAO estimates that world population will reach 9.1 billion by 2050, and to feed that number of people, the agricultural sector will need to grow by 70 per cent.

Speaking at the conference, the Kenyan cabinet secretary for agriculture, livestock and fisheries, Willy Bett, pointed out how the farming sector in the region suffers from

impacts of climate change, inadequate resourcing and lack of data. "While acknowledging that resources are not the only solution for the challenges in agriculture, data remains a practicable investment for food and human security," he said.

He stressed on the need for African countries to understand the potential value of data, and let entrepreneurs use it to help create the tools necessary to empower citizens for innovative agricultural transformation. According to Bett, data could be useful in supporting 'climate-smart' agriculture information on areas such as weather patterns, market demand and soil profiles that are not easily available to farmers.

**Available data remains largely inaccessible to key players along the agricultural value chains such as farmers, processors, traders and consumers.**

## The importance of climate data

Reliable climate data can make a drastic difference to the way farmers work. Weather patterns play a major role in determining agricultural performance. Lack of real-time access to drought forecasts, rainfall distribution and pest outbreaks has a big impact on production and farmer livelihoods. More accurate weather information would allow smallholder farmers make better resource management decisions. Apart from this, weather information also gives farmers

access to services such as crop insurance.

One of the biggest challenges in developing an effective system of weather forecast and warning systems in Africa is related to the National Meteorological and Hydrological Services (NMHS), which owns and operates most of the infrastructure that is needed for providing weather, climate, water and related environmental services. The NMHS operates well below capacity in several African countries, with many countries not having the minimum number of operational meteorological stations to adequately provide ground observation data. A recent study showed that in Africa, about 80 per cent of the data from meteorological services fail to provide adequate information and early warnings for farmers. The World Meteorological Organisation (WMO) estimates that, in Africa, there is a need for an additional 4,000-5,000 basic meteorological observatories.

While there is a need for action from governments to promote policies and projects that can provide farmers open access to data, partnerships with the private sector and developmental organisations can also contribute to creating and distributing reliable climate data.

## The TAHMO project

The Trans-African Hydro-Meteorological Observatory (TAHMO) was launched in 2012 with a plan of establishing 20,000 weather stations across Africa to help smallholder farmers in Africa obtain





## LEMKEN mechanical seed drill Saphir 7

The Saphir 7 mechanical drill enables the timely and exact placement of fine seeds to give plants the ideal head start. A reliable mechanical metering system is combined with double disc openers to ensure that seeds are drilled at constant depth, even in tough, dry or reduced tillage conditions. The Saphir 7 mechanical seed drill can be combined with the Zirkon 8 rotary harrow to create the ideal seedbed, or with roller frame only.

### 3 reasons for combining tillage and seed drilling into one pass

1

#### Saves time...

Not only can it save time, but it can also greatly reduce fuel consumption. On top of time and fuel savings it makes it easier to get the seed into the soil whilst conditions are just right.

2

#### Conserves moisture...

By reducing the amount of tillage passes needed to form a good seedbed, evaporation can greatly be reduced whilst increasing the water holding capacity of soil.

3

#### Minimal tillage...

The combination of the Saphir 7 mechanical seed drill and Zirkon 8 power harrow makes one pass tillage possible. The double disc openers on the Saphir 7 are designed to cope with reasonable amounts of trash.



africa@lemken.com

Contact us to find out more about our LEMKEN products:

**Rainer Sy, +49 28 02 81-383, r.sy@lemken.com**

**Yves Desjardins, +49 28 02 81-607, y.desjardins@lemken.com**

**LEMKEN**  
The Agrovision Company

## BALDAN EQUIPMENT: MORE EFFICIENCY, BETTER RESULTS!

balidan.com.br







**AFRICA SALES ENQUIRIES:**  
Pan Trade Services Ltd. - London, UK - Phone: +44 208 090 1072 / Fax: +44 208 959 3319  
e-mail: info@pantrade.co.uk - www.pantrade.co.uk



reliable and accurate weather data to increase crop yields.

TAHMO stations are typically installed at local schools, where they can also be used for education. The stations use an innovation called ATMOS 41, an all-in-one weather station that fulfils all weather measuring needs such as air temperature, relative humidity, vapour pressure, barometric pressure, wind speed and direction, solar radiation, precipitation and lightning. While most all-in-one weather stations provide the option to measure either solar radiation or precipitation, ATMOS 41 provides both measurements in one device.

Data generated by TAHMO stations is sent to an online platform to aid accessibility and analyses to guide farmers.

"Providing a reliable source of weather information gives farmers some degree of certainty in weather measurement," said Nick van de Giesen, a director of the project and a professor of the Netherlands-based Delft University of Technology, in an interview with SciDev.Net.

"In Africa, weather influences how households decide to farm and the amount of household income coming from crop sales. When rains fail or prolong, livelihoods are lost," van de Giesen explained. Most African farmers depend on the rain, and thus the project is providing information such as the onset and cessation of rainfall across different parts of Africa to guide farmers.

#### The ENACTS programme

The Enhancing National Climate Services initiative (ENACTS) led by the International Research Institute for Climate and Society is a multi-faceted initiative designed to bring climate knowledge into national decision making in Africa by improving availability, access to, and use of climate information.

ENACTS delivers robust climate data, targeted information products and training

Meteorological services in most African countries are under-resourced. (Photo: Deshxx/Shutterstock)



**The TAHMO project was launched to help smallholder farmers in Africa obtain reliable and accurate weather data to increase crop yields.**

that is relevant to needs of the farmers, enabling them to apply climate information to decision making. The initiative aims to understand natural variability in temperature and precipitation over national, regional and district scales and assess the impacts on development outcomes; understand climate sensitivity to map populations and systems at risk of climate variability and change; and improve the timing and scale of climate-sensitive interventions and design early-warning systems.

#### KMD Map Room

The Kenya Meteorological Department (KMD) in collaboration with US-based

International Research Institute for Climate and Society (IRI) and UK Department for International Development has developed an online tool that uses climate data to boost resilience to climate impacts.

The maproom tool is a collection of maps and other figures that monitor climate conditions at present and in the recent past. The maps and figures can be manipulated and are linked to the original data. The tool was developed after researchers collected ground-based climate observations data in Kenya, blended it with global satellite data, and generated datasets that could be analysed by statistical techniques to create climate products with local relevance and national coverage, enabling targeted decisions and development gains.

These are just a few of the many initiatives underway in the continent to give farmers access to climate data. However, larger movements at government and policy making are needed to make the desired impact on increasing productivity and achieving food security. <sup>1</sup>

# SaMASZ®

**Perfect CUT**  
perfect cutting in all conditions





SaMASZ Sp. z o.o. | Mobile: (+48) 512 823 047 | [www.samasz.com](http://www.samasz.com)

 [youtube.com/grandSaMASZ](https://youtube.com/grandSaMASZ)

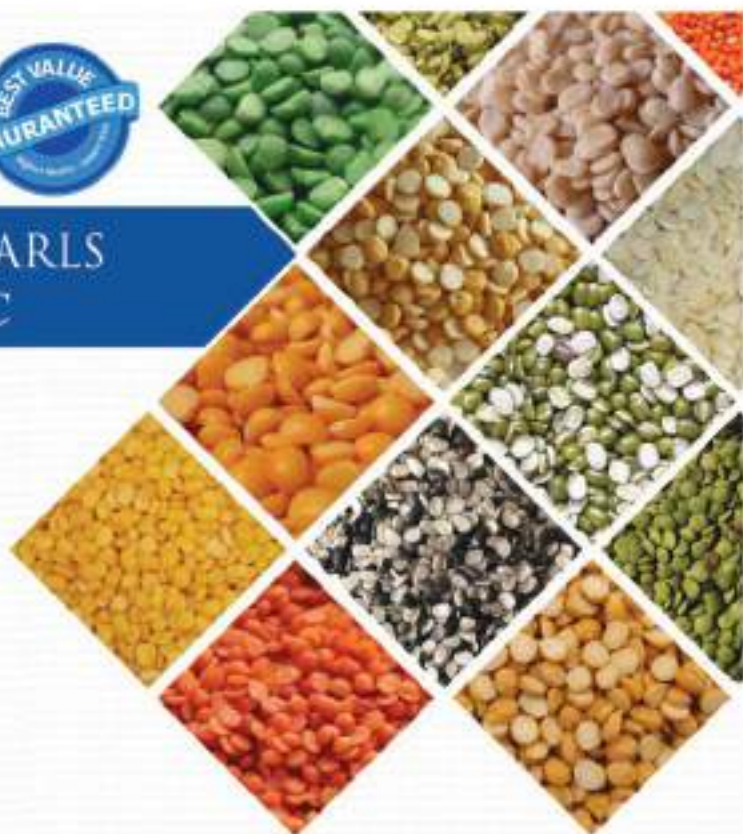
**We are looking for the dealers !**



**MILLTEC**  
ISO 9001:2008 / ISO 14001:2004



FOR PULSES LIKE PEARLS  
THINK MILLTEC



CLASSIFIER



PRE CLEANER



DESTONER

- End-to-End Solution for Pulse Milling Plants.
- Yield Management Solutions available.
- Multiple grain processing capability.



PEARLER/POLISHER



COLOR SORTER



PACKING MACHINE



DAL DRYER

**PREFERRED GLOBAL COMPANY  
FOR ALL FOOD PROCESSING SOLUTION**

MILLTEC Machinery Pvt. Ltd  
No. 51/A, 1st Phase, KIADB Indl Area  
Bommasandra, Bangalore -560099  
[www.milltecmachinery.com](http://www.milltecmachinery.com)



DOWNLOAD APP

TOLL Free: 1800 - 102 - 8431  
TEL: +91-80-28016666 +91-80-27831128  
Email: [marketing@milltecmachinery.com](mailto:marketing@milltecmachinery.com)  
[exports2@milltecmachinery.com](mailto:exports2@milltecmachinery.com)

[www.facebook.com/milltecmachinerypvtltd](https://www.facebook.com/milltecmachinerypvtltd)

[www.twitter.com/milltecmpl](https://www.twitter.com/milltecmpl)

[www.linkedin.com/company/milltec-machinery-private-limited](https://www.linkedin.com/company/milltec-machinery-private-limited)

## Case IH enters Nigerian tractor market through partnership with Dizengoff

CASE IH HAS announced its entry into the Nigerian market and has unveiled the range of tractors that will be sold and serviced by its exclusive distributor and after-sales service supplier, Dizengoff Nigeria.

The company is introducing a wide range of tractors to Nigeria, with 35 to 213 hp models capable of meeting the mechanisation requirements of every size of farm.

Initiating the exclusive partnership agreement signed earlier this year between Case IH and Dizengoff Nigeria, an official launch ceremony was held at the NAF Conference Centre in Abuja on 15 June. The guests included Senator Dr Adamu Abdullahi, chairman of the Senate Committee on Agriculture, representatives of farmers' associations and commercial farmers.

Other notable attendees included Marco Raimondo, Case IH business director for Africa and the Middle East; Andrew Baker, CEO of Dizengoff Nigeria's parent company Balton CP Group UK; Antti Ritvonen, country manager of Dizengoff Nigeria; Promise Amahah, president of the Young Farmers' Network; and Emmanuel Ijewere, coordinator with Nigeria Agribusiness Group (NABG).

At the event, Raimondo commented, "At Case IH we are constantly renewing and expanding our product offering to meet the growing needs of farmers in Nigeria and indeed the world-over."

"We have exactly the right kinds of equipment to meet farmers' needs, to help them raise their efficiency and productivity, and are

very excited about our new collaboration with Dizengoff Nigeria," he added.

Case IH tractor models being made available in Nigeria include the 35-75hp JXT range of utility tractors for the smaller scale farmer who needs a totally reliable tractor for a variety of root crop and harvesting applications; 80-88hp and 110-140hp models from the Farmall Series of versatile front loader tractors with compact dimensions and a high power-to-weight ratio, designed to take on general duties on arable farms and tough tasks on livestock units; 112-141hp options from the Maxxum Series, which have a hard-earned reputation as the best mid-range machines on the market; and 142-213hp Puma tractors.

## Nurturing the development of African agriculture

**ADOPTION OF EFFICIENT and sustainable agri-machinery solutions** will play a major role in making Africa food secure. Agri-machinery company, Escorts Agri Machinery, which has been catering to African market for over 10 years now, has been working towards making an active contribution towards this end. The company specialises in providing end-to-end solutions starting from soil testing, agricultural mechanisation, irrigation solutions, threshing and harvesting to post-harvesting and packaging.

Escorts' Farmtrac is a leading brand of tractors ranging from 12HP to 110HP. According to the company, these tractors, which have been tried and tested for African conditions, are committed to serving the farmer by ensuring the fruits of his labour convert a bountiful harvest for the nation.

Escorts' customer centric approach and



Close to 8000 Farmtrac tractors have already been delivered in Africa. (Photo: Escorts)

years of experience have helped it to translate global advances into rugged, reliable and cost effective solutions that are a key to success and prosperity. Its range of tractors has multi-tasking capability that makes them most versatile and comprehensive product in their class. Close to 8000 Farmtrac tractors have already been

delivered in Africa, with continuous flow of orders from the continent.

Escorts caters to 26 African countries with high volume of orders received from Nigeria, Tanzania, Ghana, Benin, Madagascar and Burkina Faso. Its presence in Africa adds to the global arena of Escorts with Farmtrac being present in 62 countries including USA, Europe, west Asia and south-east Asia.

The Escorts Group is among India's leading engineering conglomerates operating in the high growth sectors of agri-machinery, construction and material handling equipment, railway equipment and auto components. The Agri Machinery Group of Escorts commenced its manufacturing operations in 1964 and it has since been using its experience and expertise to power and propel change in farming landscape across the globe.

**Privé**

**Store your grain with Privé**

Privé is one of the most well-known and reliable manufacturers of round silos to store grain. More than 50 years of experience in Africa. Capacity from 20 to 10 000 tons.

MADE IN FRANCE 10 YEARS WARRANTY

afao 50 YEARS

CONTACT: 98, avenue du Général Patton - CS 30536, 51010 CHILONS EN CHAMPAGNE CEDEX, FRANCE  
Tel: +33 (0)3 26 08 66 66 Fax: +33 (0)3 26 08 66 99 E-mail: contact@privé.fr

[www.prive.fr](http://www.prive.fr)



## John Deere rolls out smarter S700 combines

JOHN DEERE WILL introduce the advanced grain harvesting technology from front to back in its combines and headers for model year 2018 production. This includes four new S700 Combine models (S760, S770, S780 and S790) that offer producers significant improvements in smart technology, improved operator comfort and better data, along with the 700C/FC Series Corn Heads and 700D Drapers for more efficient grain harvesting, the company stated.

Building on the proven field performance of the S600 Combines introduced in 2012, the new S700 Combines incorporate the latest in automated harvesting technology. Many of these changes are aimed at making it easier on the operator by allowing the combine to make needed adjustments automatically, on the go.

"These new S700 Combines are a culmination of enhancements to our previous model that optimise and automate harvesting operations for coarse and small grains," said Kevin Ripple, marketing manager for harvest at John Deere. "We've enhanced the overall intelligence of these combines by automating more adjustments and calibration tasks, and improved the lifetime durability and productivity of front-end equipment to create a high performance harvesting solution unlike any other on the market today."

To make it easier for operators to maximise the performance of their new S700 Combine, John Deere introduces the Combine Advisor package. Combine Advisor incorporates seven technologies to help operators set, optimise and automate the combine for the most effective harvesting performance based on their crop and field conditions.

Auto Maintain is a function within Combine Advisor that is supported with ActiveVision cameras. "These cameras give the operator a view into the tailings and clean grain elevators via the



The John Deere S780 Combine is one of four new S700 Combines introduced for model year 2018 production. (Photo: John Deere )

display, and analyse the information to maintain optimal threshing performance based on operator set targets," Ripple explained.

Another addition to the S700 Combines is Active Yield technology that automatically calibrates the mass flow sensor. This saves time by eliminating the need for manual calibrations and ensures the best data is collected.

The biggest physical difference customers will see in the S700 Combines compared to previous models is in the cab. This starts with a new state-of-the-art CommandCenter, providing a common user experience across Deere's larger tractor and self-propelled sprayer lines, that emphasises customisation and operator comfort.

Machine performance features of the CommandCenter include a Gen 4 interface and monitor with 4600 processor; CommandArm and multi-function control lever with greater ergonomic design and customisable buttons; premium activation with AutoTrac, RowSense and HarvestDoc; and Extended Monitor and mobile device features. In addition, operators will find set up and start up much quicker and easier, thanks to more intuitive harvest run and setup screens.

ORGANISED BY



**Centre for  
Management  
Technology®**  
into our 34<sup>th</sup> year

## 3<sup>rd</sup> Cassava World Africa

10 - 11 Oct 2017 / Lusaka, Zambia



### *"Raising Cassava Productivity in Africa to Meet Rising Demands in Food & Industry"*

#### Key Highlights

- Innovations in cassava applications & processing technologies: Hear from HQCF, starch, syrup, ethanol and food manufacturers on local sourcing, potentials and concerns
- Tackling land issues, and governments' incentives for cassava farming
- Access to agri financing & options
- Utilizing technology & mechanization to advance cassava farming
- Improving productivity & quality – learning from Asia
- Moving towards zero waste: effective utilisation of cassava biomass for production of livestock feed and biogas
- Alternative crops (corn, wheat, sorghum) & its impact on cassava markets
- Latest update on cassava seed varieties & soil fertility management

#### Confirmed Speakers from

- Zambian Breweries
- Flour Mills of Nigeria
- Rockefeller Foundation
- Psaltry
- International Fund for Agriculture Development (IFAD)
- Citizens Economic Empowerment Commission
- Ministry of Agriculture, Animal Industry and Fisheries (Uganda)
- Tanzania Private Sector Foundation (TPSF)
- International Institute of Tropical Agriculture (IITA)
- Union Dicon Salt
- Commoditia
- Tanzania Agriculture Export Process Zone
- Praj Industries
- Bayer

#### Sponsor or Book your Exhibition Space

This event is an excellent platform to promote your organization to influential players & investors in the industry. Talk to us for sponsorship packages or book your exhibition space now! Contact [fiona@cmtsp.com.sg](mailto:fiona@cmtsp.com.sg)

Visit us at [www.cmtevents.com](http://www.cmtevents.com) to register or contact [grace@cmtsp.com.sg](mailto:grace@cmtsp.com.sg)

**Klinofeed®**  
Five in one multifunctional feed additive  
The best choice for economic feed production

**Mycotoxin Binder**  
Broad spectrum binding effect

**Ammonia Remover**  
Absorbs ammonium ions in intestinal tract

**Pellet quality improver**  
Improves the PDI

**Improving Digestion**  
Supports intestinal flora

**Anti-caking Agent**  
Improves the flow of feed

**unipoint ag**  
Switzerland  
Phone: +41 52 305 20 41  
Mail: info@unipoint.ch  
www.klinofeed.ch

**GMP+**  
PDV 114900

**ZEROGERM**  
**HYGIENIZANT**  
**TABLET FUMIGANT**

**Slow burning**  
Powerful disinfectant and sanitizing of sheds, poultry farms, hatcheries, silos, tanks, ships warehouses, transport means, storage places, hospitals, refrigerators, docks

**Stable vapor concentrations for 4 hours disinfecting 250/400 cubic meters**

**Active for more than 6 hours**

**Easy application, quick and easy**

**Stops fermentations, is insect repellent, non-corrosive, does not give unpleasant tastes and odors**

**EUROFEED**  
technologies S.p.A.

[www.eurofeed.it](http://www.eurofeed.it)

## South African agri-machinery sales records growth

SOUTH AFRICAN AGRI-MACHINERY sales saw a strong rise in June, marking a growth of 24 per cent year on year. According to the South African Agricultural Machinery Association (SAAMA), the combine harvester sales for June were the highest since 2014. The boost in sales has been attributed to rising prices, the volatility of the rand, as well as the strong recovery in agriculture production. South Africa has seen strong harvests this season with the US Department of Agriculture estimating the



SAAMA estimates that the total tractor sales for 2017 will be between 5,700 and 6,000 units. (Photo: Kotkot32/Shutterstock)

2016-17 South African corn harvest at a record 16.4m tonnes, double of last season's drought-affected level.

SAAMA chairperson, Lucas Groenewald commented that the overall sentiment in the market is currently quite positive. "As farmers harvest their crops, they are better able to estimate their production and, although crop prices are depressed because of the record yields, they are better able to make considered decisions on buying equipment," he noted.

## ADVERTISERS INDEX

Company	Page
AAZ Union	17
Alvan Blanch Development Co. Ltd	7
AWILA Anlagenbau GmbH	17
Ayurvet Ltd	27
Bentall Rowlands Storage Systems Ltd	15
Carfed SA	29
Centre for Management Technology (Cassava World Africa 2017)	49
Ceva Santé Animale S.A.	35
DLG Service GmbH	43
Ellis Machinery	11
Eurofeed Technologies S.p.a.	50
EW Nutrition GmbH	31
Format Solutions Ltd	37
Goizper Sociedad Cooperativa	15
Graf GmbH	43
Griffith Elder & Co Ltd	5
GSI Hungary Kft.	39
Hockley International Limited	25
Hozelock-Exel	11
Impex Barneveld b.v.	36
Institut de Sélection Animale B.V.	25
Jaarbeurs B.V.	9
Kukje Machinery Co. Ltd	52
LEMKEN GmbH & Co. KG	45
Maquinas Agricolas Jacto S.A.	2
Maquinas Agricolas Jacto S.A.	21
Marel Stork Poultry Processing B.V.	23
MASCHIO GASPARD S.p.A.	42
Meyn Food Processing Technology BV	29
Milltec Machinery Pvt Ltd	47
Moba B.V.	27
Omex Agrifluids Ltd	19
Pan Trade Services Ltd	45
Prive S.A.	48
SaMASZ Sp.z o.o.	46
Swingtec GmbH	51
T-L Irrigation	17
Unipoint AG	50
Zest WEG Group Africa	7

## 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](http://www.alaincharles.com)  
or email at [circulation@alaincharles.com](mailto: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



# FOG & ULV APPLICATION TECHNOLOGY 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



**fontan® + swingfog®**  
QUALITY WINS





## Korea Born and World Well-Known!

Branson Tractors explores to adapt state-of-the-art technology and develop new products for your better Agri-life style.

You are invited as a valuable distributor !  
Go together with **Branson Tractors** !



**KM KUKJE MACHINERY**

**We are searching for a new family member**

Contact Info.

Tel. +82 +43 730 1295

Fax. +82 +43 730 1493

E-mail. [jewoon.ryu@kukjemachinery.co.kr](mailto:jewoon.ryu@kukjemachinery.co.kr)



QR CODE

Powered by Branson Engines



Gen-set engine



Industrial engine



Eco-friendly engine