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African Farming and Food Processing

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Recent developments

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The role of liquid fats

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New complex for sub-Sahara

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African Farming and Food Processing

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Farming Calendar 2016

JUNE

8-10	IFTEX 2016 *www.hppexhibitions.com/floriculture/2016/nbo*	NAIROBI
19-21	Africa's Big Seven 2016 *www.exhibitionsafrica.com*	JOHANNESBURG
23-25	AVI Africa 2016 *www.sapoultry.co.za*	JOHANNESBURG

JULY

21-22	Aviana Zambia 2016 *www.avianaafrica.com*	LUSAKA

SEPTEMBER

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

OCTOBER

4-6	Ethiopia Agrofood Plastpack *www.agrofood-plastpack.com*	ADDIS ABABA
21-22	Aviana Uganda 2016 *www.avianaafrica.com*	KAMPALA

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

Agritech a resounding success

WITH THE EXPANDED irrigation zone and sprayer arena, diverse crop trials/demonstrations, enhanced livestock sales section, equipment display arena, VIP business area, the Zambia agro SME village and the 4X4 vehicle testing track, the third edition of the Agritech was a resounding success.

Thousands of farmers, business executives, media and the general public converged at the country's premier agricultural showcase in Chisamba, central Zambia from 14-16 April. As evidenced by an increased attendance from organisations across Zambia's borders, the expo is becoming bigger and a focal point for conducting agribusiness in the region.

Of particular interest was the Energy Park, given the current energy crisis afflicting Zambia and the region. Innovative ways of getting off the grid, anchored on global expertise, were on display.

The expo provided a formidable platform for all players in the agriculture value chain to discuss the challenges facing the sector, and come up with solutions on how to address them. Information on the latest technology in farming, farm mechanisation, seed varieties, financing options and irrigation solutions makes the event a must-attend!

dmg events acquires EMS South Africa

ONE OF THE world's leading event companies, dmg events, has announced the acquisition of long-established pan-African exhibition organiser Exhibition Management Services Pty Ltd (EMS) – headquartered in Johannesburg.

Geoff Dickinson, CEO, dmg events, said: "This acquisition is part of our strategy to become key event players in Africa. EMS offers a strategic hub in Africa's largest economy."

Amongst others, Africa's Big Seven (AB7) – the continent's biggest food and beverage industry trade expo – will be added to the existing portfolio of dmg events.

IFTEX Kenya 2016 celebrates its fifth anniversary

THE ANNUAL INTERNATIONAL Floriculture Trade Expo (IFTEX) will be held in Nairobi from 8 to 10 June 2016. The industry-wide event serves all segments of the African floriculture chain: breeders, propagators, growers, cargo and trade suppliers. The Expo offers a unique platform for business-to-business sessions between growers and buyers drawn from the Kenyan, regional and international markets.

The number of pre-registered visitors for the upcoming IFTEX is at the same level as last year. However, it looks like the quality of the already registered attendees is considerably higher.

The Kenyan-based international exhibition has grown into one of the most important cut flower trade events in the world. It took just five years to accomplish this mission. With a record number of over 200 exhibiting flower-related companies this year, IFTEX will be more attractive than ever before.

Schreurs East Africa showing their roses at last year's IFTEX.

Kenya is the leading exporter of fresh cut flowers in Africa. Statistics show, that for every three roses sold in the European market, one of them comes from Kenya.

Kenya is also the main exporter of roses to other countries, such as Japan.

This follows the business and agricultural friendly environment created by the Kenyan Government in the horticultural industry. Government incentives includes the provision of investors with an enlarged and ready facilitated market for their products. The expansive road network all over the country allows ease of conducting the horticulture business nationwide.

The climate perfectly suits the growth of flowers in this country. Having both temperate and tropical climatic conditions as well as good soils always ensures the best quality roses in the region.

In addition, the flower sector greatly contributes to Kenya's growth, providing up to 11 per cent of the country's GDP. The growth in the demand for the products is currently placed at an increasing rate of three per cent per annum. Kenyan growers have high hopes of reaching even more markets.

The industry employs a huge number of Kenyans. Recent statistics places the total number of people directly employed by the flower industry at 4.5mn.

However, various challenges and limitations face the growers, the main one being the Economic Partnership Agreements. The Agreements define the terms of business in the industry. Growers are very keen for them as they define the future of the flower industry in Kenya.

'Thinking big' for youth and agriculture

THE AFRICAN DEVELOPMENT Bank (AfDB), in collaboration with the International Institute of Tropical Agriculture (IITA), has organised the ENABLE (Empowering Novel Agri-Business-Led Employment) Youth Program Design Workshop in April in Abuja. Two hundred participants from more than 30 countries attended the two-day workshop, which featured prominent speakers, including private sector industrialists Aliko Dangote and Tony Elumelu, Ministers of Agriculture and Ministers of Youth from 10 African countries.

The objective of the ENABLE workshop is to build a well-grounded evidence-based understanding of the ENABLE Youth Program Concept among key stakeholders. The participants shared their experiences and lessons learnt in promoting youth employment in agriculture in Africa. This will permit the Bank and its partners to fine-tune the ENABLE Youth programme design through knowledge of proven best practices Africa-wide.

The ENABLE Youth Program in African Agriculture is one such initiative which, in its pilot phase, has provided evidence that, with greater access to the agribusiness enterprise, and institutional support, youths, with their passion and energy, can become the driving force of agricultural transformation in Africa.

Following the AfDB's high-level conference on African Agricultural Transformation held in Dakar in October 2015, Governments across the continent, international development partners, agri-business companies, finance institutions, youth and women's groups have expressed interest in working with the AfDB in collaboration with IITA to develop and roll-out country-specific ENABLE youth programmes designed to sustainably tackle youth unemployment and promote food security.

New AGRA-World Bank agreement

IN A NEW push to catalyse growth in sub-Saharan Africa's agriculture and food sectors, the Alliance for a Green Revolution in Africa (AGRA) and World Bank Agriculture Global Practice have signed a letter of intent to strengthen co-operation, share information, and deepen collaboration, including jointly developing a strategic portfolio of projects for greater impact.

"At a time when AGRA is focused on a significant push for Africa's agricultural transformation, the partnership with the World Bank provides new energy and drive for the realisation of this ambition," said Agnes Kalibata, president, AGRA. "We are very excited to partner in this initiative for achieving our common goals."

AGRA's goal is to double yields and incomes for 30mn farming households across sub-Saharan Africa by 2020. This objective will be met by supporting productivity improvements on smallholder farms, increasing poor farmers' access to markets and finance, while safeguarding the environment.

Specifically, AGRA and the World Bank will work jointly to identify policy constraints that are hindering agricultural transformation in Africa and collaborate on designing mechanisms to deal with these constraints, benefiting millions of smallholder African farmers.

"Across sub-Saharan Africa, agricultural transformation holds the key to economic growth and feeding more people with nutritious, safe and affordable diets," said Jürgen Vögele, World Bank senior director for the Agriculture Global Practice. "Our collaboration with AGRA is extensive and we look forward to taking our partnership to the next level so that we can together work to end poverty and boost shared prosperity on the African continent."

Multinational NERICA rice distribution project

EVERY YEAR, AFRICA imports one third of global rice production, with West Africa alone importing nearly 20 per cent (5.2mn tonnes). By 2020, if domestic production continues to be outstripped by growing demand, Africa will need an extra 17mn tonnes of husked rice, costing several billion in already rare foreign exchange. Any increase in the price of rice on the international market will have a negative impact on food security, particularly for poor households.

Increasing production of African rice is, then, another strategy for reducing poverty and food insecurity, in West Africa in particular, where rice is the basic foodstuff whose cultivation is showing the fastest increase.

In 2005, seven countries of West Africa – Nigeria, Mali, Sierra Leone, Benin, Ghana, Guinea and the Gambia – sought assistance from the Bank to strengthen their food security at regional level, through financing dissemination of new technology and sharing knowledge about the new varieties of NERICA (New Rice for Africa) rice.

The key objectives in the seven countries of West Africa involved in this project are:

* **To improve food security and reduce poverty for farming households.**
* **To increase national rice production with a view to reducing imports.**

As a result food security will be strengthened through better yield resistance to dry spells because NERICA rice varieties mature more quickly and are much more weed-resistant; varieties with a protein content 25 per cent higher than the average for other varieties of rice on the international market.

Also the level of poverty reduced for 241,000 families, and there will be savings in foreign currency spending and increased revenues from exports in rice and its seeds.

One Acre Fund expands to Malawi and Uganda

ONE ACRE FUND, a nonprofit agriculture organisation that supplies smallholder farmers with the financing and training they need to increase their incomes and food security, has officially opened its Malawi and Uganda operations. Malawi and Uganda began as pilots in 2013 and 2014 respectively. One Acre Fund now serves 400,000 smallholder farmers – with an estimated two million people in those households – across East and Southern Africa.

"The majority of the world's poor are hard-working smallholder farmers who can reach their full potential with access to finance, training, and services," said Andrew Youn, One Acre Fund's founder and executive director. "I'm thrilled to announce that One Acre Fund is now able to serve smallholder farmers in Malawi and Uganda and we will continue to grow our programme until no farmer goes hungry."

Participating farmers in the One Acre Fund programme receive a complete bundle of agricultural inputs and services on credit, including the delivery of high-quality seeds and fertiliser, training on how to maximise crop yields, and education on how to minimise post-harvest losses. To accommodate clients, One Acre Fund offers a flexible repayment system: Farmers may make payments toward loans in any amount and at any time during the growing season as long as they complete repayment by the season's end. In 2015, 99 per cent of One Acre Fund farmers repaid their loans in full and on time.

One Acre Fund is currently working with 2,600 farmers in the Zomba, Mulanje, and Chiradzulu districts of Malawi and 3,700 farmers in the Jinja and Kamuli districts of Uganda. Loan packages vary depending on the size of land registered; farmers may enroll as little as half an acre of land. To be eligible for a loan, farmers are required to submit a small down payment of the total loan, meet regularly with a local One Acre Fund field officer, and attend in-person agricultural trainings.

Founded in 2006 in western Kenya, One Acre Fund works with more than 400,000 smallholder farmers in Kenya, Rwanda, Burundi, Tanzania, Malawi, and Uganda, and anticipates it will serve one million farmers by 2020.

Western Cape's first drone pilots graduate

UAV INDUSTRIES, THE Western Cape's only drone pilot training centre, has released its first batch of 14 graduates. These are the first certified trained pilots who are authorised to fly drones in the region. This spells the commencement of new jobs in the country for a brand new industry, with just four training schools currently in South Africa.

UAV Industries chief instructor, Greg Donaldson, explained, "People think that drones are just good for Cape Town's booming film industry, but there is a wide diversity of industries that will need, and employ, certified drone pilots – agriculture particularly will be huge. Anything that manned aviation does today that doesn't involve the transportation of passengers will be taken over by drones over the next five to 10 years so there are huge opportunities for the industry. Things are moving incredibly quickly.

"What we're offering through our training school is the ability to licence the pilot and to get the equivalent in manned aviation of a commercial pilot's licence. There is a pre-on site programme and then there's two weeks full time on site between the ground school and flight school, totalling three to four weeks in total.

"There is a lot of detail and requirements that are needed for people to understand the airspace that one's operating. We need this time to shape expert flyers into commercial flyers. It's not the ability so much to fly a drone, but it's that concept of safe flying - all the risk assessments that go around a mission or a flight, and understanding how to integrate manned and unmanned aviation. Crucial in our course is airmanship. You can be the best radio control aircraft flyer, but you'll fail our course if you don't have situational awareness of, not just the drone, but the other users of the airspace around you - people on the ground, buildings, and property. For the final pass to get your licence, we bring a Civil Aviation designated examiner out from Johannesburg who tests out every single student to Civil Aviation standards and we will not recommend a student to that test unless they meet our standards - we haven't had one student fail so far. It's a very good measure. The designated examiner has been very complimentary of the standard which we train our students, specifically airmanship safety."

Olam connects with cocoa farmers

NEARLY THREE-QUARTERS of the world's four million metric ton annual cocoa bean crop is grown in West Africa, where farmers must often overcome challenges accessing clean water, health services and even education as they struggle to eek out livings on small parcels of land. Olam, which is the world's largest buyer of cocoa beans, is building a network to help improve the lives of these farmers directly, by improving and supporting productivity and sustainability. The solution depends, in large part, on using technology to connect with them.

"These farmers often keep records with pencil and paper, or maybe on an Excel spreadsheet," explained Simon Brayn-Smith, who leads the Olam Farmer Information System, or "OFIS," as commercial director for Cocoa Sustainability. "That keeps them isolated, not only from us and from one another, but also from the insights their collective needs and experiences might yield."

Launched in 2014, OFIS relies on capturing that farmer data onto smartphones via an app, assisted by purpose-built questionnaires to capture unique environmental and behavioral attributes, such as geography and level of farming experience. Since a lot of remote areas in Africa are without mobile coverage, the app collects data offline until it can access a network.

When this information is correlated with Olam's records, an individual farm development plan can be prepared by an automated system that can generate or update 30,000 plans in an instant.

OFIS in action on a farm in Côte d'Ivoire (Image: Olam)

Measuring and weighing for agriculture

FARMERS DEPEND ON the reliability of key figures and parameters in order to make crucial decisions for the future and set the course for a favourable yield. Measuring and weighing provide farmers with the numbers and reference values they need to ensure they will make the right decisions. The moisture of agricultural products is an important quality parameter for the harvest and storage capacity as well as an important measure for marketing.

In order to determine the exact moisture content of harvested crops, thermal water extraction must be carried out with a drying scale or a drying oven. In practice this method takes too long.

The Agreto moisture meters provide faster measurements that measure either the conductivity or electrical capacitance of the sample. One or more calibrations are converted to the moisture. The Agreto moisture meters thus provide accurate results within seconds.

Agreto offers innovative solutions relating to livestock scales, hydraulic scales, platform scales, scales kits, soil compaction meters, temperature probes, moisture meters for hay, straw and grain. The company is hoping to expand in Africa and is currently looking for interested partners who want to distribute their products in their countries.

Former Nigerian leader launches prize to spur Africa's agriculture innovation

FORMER NIGERIAN PRESIDENT Olusegun Obasanjo has launched a new food prize to spur innovations in agricultural production and marketing in Africa.

The Africa Food Prize is the pre-eminent award recognising an outstanding individual or institution that is leading the effort to change the reality of farming in Africa – from a struggle to survive to a business that thrives.

The US$100,000 prize puts a spotlight on bold initiatives and technical innovations that can be replicated across the continent to create a new era of food security and economic opportunity for all Africans.

Obasanjo reminded African governments to fully implement the Malabo Declaration on agricultural growth and transformation for shared prosperity and improved livelihoods.

He said the award would be one of the efforts aimed at advancing food security and production on the continent to encourage, inspire and bring about transformation.

"We want to encourage, reward and celebrate our hard-working people and to make agriculture attractive enough for more people, especially the teeming youth, to come on board," Obasanjo said.

He expressed the confidence that the award would grow in stature and prestige to celebrate Africans.

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Embedding transnational agribusiness and GMOs into African agriculture

THE AFRICAN CENTRE for Biodiversity (ACB) has just released the report *For your own good!*, which outlines the GMO industry's expansion across Africa. The report focusses on non-commercial traditional crops, such as cassava, sorghum, sweet potato, pigeon pea, cowpea, banana and rice, which corporations are attempting to genetically modify and roll out under the guise of philanthropy.

The report reveals that a great deal of research and development is currently underway into the genetic modification (GM) of these crops. Most of the on-going trials concentrate on drought and salt tolerance, nitrogen use efficiency, resistance to tropical pests and diseases and nutritional enhancement (biofortification). The key countries that have been targeted include Burkina Faso, Egypt, Ghana, Nigeria, Kenya, Uganda and Malawi.

The genesis of GM research into these crops can be found in royalty-free donations of various patented GM traits by several transnational companies to experimental programmes undertaken by African scientists employed by government ministries. These companies include Monsanto, Dupont and Pioneer Hi-bred.

The main players involved include the African Agriculture Technology Foundation (AATF), which is on the receiving end of many of the technological property rights donations, the Agricultural Biotechnology Support Program (ABSP) and the Program for Biosafety Systems (PBS). The Bill & Melinda Gates Foundation (BMGF) and USAID fund the latter organisations.

Addressing the need for seed

RESEARCHERS BELIEVE THEY have uncovered a promising opportunity for reaching smallholder farmers in developing countries with vital crops that could help them respond to a host of challenges including climate change and malnutrition. It could have important implications for the way seed sales and distribution are organised, particularly in sub-Saharan Africa.

For decades, scientists have developed new crop varieties aimed at responding to the most persistent environmental and nutritional challenges faced by smallholders. But many of these have not made it to the people who need them most – the farmers themselves.

That's because the method for disseminating new seeds neglects some of the most important outlets used by smallholders, according to research published in the journal Food Security today. The paper explains that modern crop seeds are typically sold by a relatively small group of licensed agro-dealers clustered in major towns and cities. The seeds are certified for quality and sold to farmers in sacks.

But following what is thought to be the largest study of seed transactions to date, researchers found that the majority of farmers in these countries do not buy seed from these so-called "formal" markets.

Instead they prefer to use local market stalls, independent traders and even "mom-and-pop" stores. These informal markets, while sometimes considered off-the-grid in terms of location, are often much more accessible for many farmers, especially women. Even though they don't offer certified seeds, many farmers prefer informal markets, partly because they can buy from people they know and purchase in smaller quantities, enabling them to try different varieties at low risk.

In addition, informal markets tend to stock a much wider range of seeds than those available from agro-dealers, which typically sell only maize and a small selection of vegetables. It means smallholders use informal markets to purchase as much as two-thirds of beans and other legumes – vitally important smallholder crops due to their protein content.

Speckled sugar beans.

"Science has a strong track record of innovation for developing stronger, higher yielding crops, but now it needs to focus on innovations in delivery," said Louise Sperling, a senior technical adviser at Catholic Relief Services, who led the research while working at the International Centre for Tropical Agriculture. "As new varieties of heat- or drought-tolerant crops become available, it's crucial we get them into farmers' hands quickly and effectively. Our findings suggest how and where we need to expand our efforts."

They hope their findings could bring about recognition of the importance of informal markets, with a view to them eventually offering new varieties and high quality seed on a continuing basis.

The findings are a great way to celebrate the United Nations International Year of Pulses because it gives us a clear opportunity for reaching more farmers with better beans.

The Dry Bean Producers' Organisation (DPO) and The National Science and Technology Forum (NSTF) have partnered with IYP 2016 in South Africa. The following brands are also partners of IYP in South Africa: Tiger Brands – Lion; Pioneer Foods – Imbo/Crossbow; Pouyoukas Foods; AGT Foods Africa, and The Heart and Stroke Foundation SA.

Bagtech - from Africa to Africa

BASED IN DURBAN, South Africa, Bagtech International has over 25 years' experience in agribusiness across the African continent. Nowadays, Bagtech is focused on offering a supply chain management service and developing custom-made equipment for handling bulk fertiliser. The company offers advanced technology through an innovative management system in partnership with Festo in order to provide accurate information to itsclients. The company's main goal is to offer their clients all of its expertise in the fertiliser industry by providing consultancy, equipment and services around Africa. As far as products are concerned, the company can design in-house fertiliser blending plants from very small capacities to over 100 tons per hour, coating plants, bagging equipment from 10 kg to one ton, screening equipment and any other compact fertiliser plant as per customer needs.

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

With nearly 30 years of development in the agro-industry in Africa, Bagtech offers its own technology in fertiliser equipment - always focusing on continuous improvements for customer benefit. The company has developed auto correction algorithms which detect changes of flow characteristics in fertilisers due to changes in density or moisture. Advanced and intelligent monitoring systems can assist plant operators with the control of the plant and supply critical information when needed, accessible from around the world. Highly accurate Servo radial gates control the flow of fertilisers very precisely without causing any damage to the product.

Private and public sector investment essential

ZAMBIA MUST TAKE action to invest in industrialisation in order to be competitive and take advantage of the business opportunities in the region, Zambeef joint CEO Dr Carl Irwin told delegates at the recent Zambian International Investment Forum (ZIIF).

"Zambeef strongly believes in Zambia's potential to feed itself and the region given its abundant resources. But only in adding value to our produce can we fully realise the sector's full potential," said Dr Irwin.

During the forum, themed "Investment for Industrialization, Wealth and Job Creation", Dr Irwin appealed to participants in the agribusiness sector to embrace and invest in new technologies that would help transform the agriculture sector into a more efficient production base that can then allow the sector to tap into wider regional markets.

Zambeef is one of Zambia's success stories and leading agribusiness and food processor thanks to unrelenting investment on the part of the company, he explained. The group has invested heavily in cropping, livestock and manufacturing divisions as well as skills development equipping both employees and small-scale farmers involved in the value-addition chain.

Dr Irwin highlighted some of the benefits of focusing on value-adding operations and the opportunities presented for the national economy; increased national food security, social development in rural areas, job creation, and tax and duty generated as result.

He also stressed the importance of developing and strengthening local capacity in order to achieve a more streamlined development across the sector.

"Small to medium scale farmers play a vital role in the value chain. For example, over 90 per cent of livestock in the country is in the hands of these farmers. Zambeef has partnered with the farmers at different levels, in effect providing a ready market for their products as well as linkages to local and external markets. By further equipping the farmers with technical knowledge and skills, we hope to improve productivity and the quality of livestock and produce in the country," he said.

Dr Irwin stressed the importance of Public-Private Partnership in both infrastructure development and policy development, calling on the private and public sectors to come together in investing for a successful agriculture and agro-processing sector focused on value-addition to resulting in the creation of sustainable wealth and jobs for Zambia.

New bio-innovation helps Kenyan mango farmers fight fruit flies

MANGO FARMING IN Kenya has become an economic venture that is shaping livelihoods for many families in the country. In its general horticulture scene, mangoes, avocados and passion fruits are the top export fruits.

Numbers show that the country earns over 100bn shillings (US$1bn) annually from the horticultural sector. However, experts say that the figures could double if the fruit fly menace is eradicated.

But now thanks to a new biological solution, farmers can rest easy and watch their profits soar.

An initiative by the Kenya Plant Health Inspectorate Services (KEPHIS) has come up with pheromone traps to contain the fruit fly.

The trap is basically liquid hydrolysed protein bait solution which contains amines and organic acids to attract fruit flies inside the trap. The fruit flies are then drawn into the trap. Although the trap attracts both genders of fruit flies, it mostly targets females, hence breaking the breeding cycle, according to Farm Biz Africa.

With the new invention, mango farmers in the country are ripe with hope that their profits are as good as doubled.

Big efficiency for Africa's smaller farmers

ESTABLISHED IN 1780, LEMKEN has grown to become one of the worlds' leading manufacturers of premium agricultural machinery. Yet, despite the large demand for innovation, the company has gone back to its roots to offer two implements specifically for Africa's developing farmers.

What makes the Achat 70 unique from other cultivators is the fact that it can loosen and mix the soil at the same time. This is thanks to the unique shape of the share, and the steep angle which the tine

makes to the ground. What this means for the farmer, is that the Achat makes it possible to loosen the soil up to 25 cm deep and mix in organic material evenly over the entire working depth without plugging up. Most cultivators can do only the one or the other, where the Achat can do both.

The Achat also has an integrated cage roller which is mounted on the rear and is mainly used to regulate the working depth. This means that when working in the ground, the weight of the Achat rests on the roller and not on the tractor three-point which greatly reduces wear on the tractor and makes operation much easier for the driver.

But what the roller does to the soil is much more important. After the tines have loosened the soil and mixed in material, the roller helps to crumble the surface and greatly reduces water loss to evaporation. It also helps to level the soil surface and forms a firm seedbed in one pass.

The Achat is available in three models with 1.5, 1.8 and 2.2-metre working widths and requires between 40-75 hp depending on soil conditions.

A well-designed and properly adjusted mouldboard plough can be a very useful tool to the small scale farmer; and the Opal 090 is such a tool.

The clean turning action of the LEMKEN mouldboard on the Opal 090 enables the farmer to loosen and aerate the soil, whilst also burying weeds so that it is easier to form the ideal seedbed for the following crop. In the long run, ploughing can help reduce the use of chemical weed control and can greatly contribute to soil fertility when enough plant material and manure is ploughed back into the soil.

The Opal 090 is a reversible mouldboard plough, which means that the driver can plough the field from one side through to the other, and leaves behind no wheel tracks or unploughed sections as is mostly the case with a conventional plough.

International markets warm up to Kenyan farmers' multipurpose herb

A BURGEONING EUROPEAN appetite for basil, a versatile aromatic herb in the mint family, has opened a window of opportunity for farmers in Nakuru County in Kenya who are now earning up to US$2,000 a month in exports.

Working with Premier Seeds Ltd, a vegetable seed company, the farmers, who have traditionally relied on the overcrowded cereal farming, have now found a lifeline in a perennial herb whose multiple health and nutritional benefits have made it a hit internationally.

International buyers say East Africa meets a paltry 15 per cent of their demand even as markets continue to balloon following the discovery of new uses of the herb. "The markets have expressed an insatiable appetite for the herb. With our first farmers, we are producing 1.6 tonnes of basil against a demand of six tonnes per month from the importer we work with. The onus is on us to sell more, the markets keep telling us," said Mr. Simon Andys the founder of Premier Seeds.

To get maximum output that meets international standards, the herb is grown in greenhouses. To assist farmers who might not meet the cost of constructing the greenhouses, Premier Seeds has entered into a financing agreement with financial institutions allowing farmers to own greenhouses which they later pay for in installments from the proceeds of the basil at agreed rates with the financiers. The financing also caters for the sale of seeds and agronomic support. The farmers grow Premier Seeds Sweet Aroma 3 variety, which belongs to the sweet basil variety, one of the preferred varieties by chefs globally.

Simon Andys, founder of Premier Seeds, inspects basil in one of the greenhouses.

The herb has become an instant hit among farmers making an initial foray into horticulture for its ease of cultivation and growth traits. A bushy annual plant, it takes on average 42 days to mature. Farmers harvest the leaves after every 10 days. A typical greenhouse, measuring eight by 30 metres, produces on average 125 kg of basil every week with a kilo going for US$5. In a month, a farmer is able to make on average up to US$2,000. The crop is also a pest and mosquito-repellent, meaning it is rarely attacked by pests.

In a bid to inculcate farmers to farming practices that meet international standards, Premier Seeds has also trained farmers in how to adhere to good agricultural practices like Global GAP and EureGap. Such farming practices include pest management and pesticides use, use of certified propagated materials plus traceability "We take time to explain to the farmers we are working with, that the export market is very particular about the quality of the produce we sell to them. That will be determined by what they do on the farm. We are glad the farmers have taken this to heart," said Mr Andys. Buyers also make ad hoc visits to farms to track the growing conditions of the herbs.

Such training has assisted farmers in understanding the quality of herbs required for exports. After harvesting, farmers grade and package the herbs on the farm before the herbs are taken to the airport. "The farmers know the right leaves and stems required in the international markets. So they do the sorting, grading and packing themselves. They know if they package the wrong quality their produce will be rejected. They have become so good in it that we have not had any problem with our international buyers," Andys added.

And as the international markets warm up further to the culinary herb, Premier Seeds is now preparing to work with the farmers to grow other herbs including coriander, oregano, lovage, dill and melissa in the course of the year.

Changing lives through community partnerships and sustainable development

KELLOGG, TECHNOSERVE-SOUTH AFRICA and the traditional authority as representatives for the community, have launched the Lambasi Farming Development Initiative (LFDI) in the OR Tambo District of the Ingquza Hill Municipality, Eastern Cape. Lambasi comprises six villages that fall under traditional Paramount Chief Mthuthuzeli Faku. The Lambasi community farmers are organised into development committees for each village, and the village development committees combine to form the Lambasi Development Trust. Chief Faku presides over the trust together with the 11 development committee members representing around 300 people. Agricultural development falls under its Lambasi Agricultural Development Company.

In 2015, a baseline study was conducted by the Monitoring and Evaluation Department of TechnoServe, South Africa. Their report determined high levels of food insecurity with the majority of households headed by women. The family size was large, about nine, and all sustained mainly by vegetable gardens and the remittances from social grants. The majority of the community is steeped in extreme poverty.

Clearly, there was a great need to encourage and support the Lambasi community in commercial maize production. For the first time, the farmers in the area would be able to farm commercially with the use of modern farming methods that supported the environment, and be able to generate a surplus for sale.

This pilot project conducted in 2015 involved the planting of 250 ha of sugar beans and 50 ha maize that were harvested in July. As at July 2015, 400 farmers had been recruited into the programme, of which 70 per cent were women.

Smiles all around as women farmers receive certificates post FAAB training.

The success of the project has been such that there is potential in 2016 to increase the hectares to 1,500. The aim had been to have at least 50 per cent women participants, for example,

The results of the baseline study will be used to assess the impact of the Lambasi project from 2016 onwards, on the social economic status of the farmers and will be key in determining the necessary future injections to improve the practice of sustainable farming in this community. So far, there has been an extremely positive reaction and positive results, warranting possible replication of the project in more places around the country in future, to combat hunger and contribute to the retention of a safe environment. Kellogg is committed to being a national and global player for hunger relief, food security, equality and addressing the impact of climate change. In South Africa, the Lambasi project is no doubt a shining example of what is possible when corporate collaborates with communities to make a better life for all.

Various factors decide the wellbeing of the mother and producers must tend to their flock with care.

Healthy layers essential for economic egg production

THE SUCCESS TO economic egg production is good hen welfare. If layers are selected with care and ensured proper housing, feed and protection against disease, it will lead to an uninterrupted high supply of good quality eggs.

It is imperative to maintain good layer management practice from day one. During the next 18 weeks, careful and canny producers will furnish their flocks with warmth, space, dry litter, recommended vaccines, clean water and appropriate feed formulations so that chicks grow and graduate into pullets and finally into mature layers.

Feeding is all about providing correct rations at the right time and varying the composition and amount with the rapidly changing requirements of growing, developing birds. The starter diet for chicks up to eight weeks of age features high protein (20 per cent) and low crude fibre (five per cent) feed with coccidiostat inclusion.

As chicks move into the ninth week, stage protein (18 per cent) and crude fibre (7.2 per cent) are reduced and raised, respectively. These so-called grower rations are generally quite cheap to purchase, but producers still need to guard against spiralling costs due to feed wastage, which is a consequence of behaviour patterns in birds of this age and it is typically high. Feed wastage is minimised by making sure that feed troughs are not overfilled and that tube feeders are not fully open. Producers can make or buy feed troughs custom designed for spillage reduction.

Failure to control wastage may lead to feed losses of around 25 per cent and transform a potentially profitable egg production enterprise into a loss-making venture even before the first egg is laid. Birds will be ready for housing in the egg-laying environment at 18 weeks of age in young pullets.

Layer hen management

A regular supply of top quality eggs can only be achieved by well-tended layers. This, in turn, requires knowledge and patience by the farmer to ensure laying hens are well-housed, fed and watered and experience as little stress as possible. Successful management of laying flocks hinges on the following basic factors: This article will consider the following:

- Housing and light management
- Feed and water management
- Heat stress and cannibalism
- Moulting and culling

A regular supply of top quality eggs can only be achieved by well-tended layers.

Housing and light management

In the interests of disease management, layers' quarters, whatever the type, should be located at least 100 metres from houses where chicks and growers are being raised. The choice of housing is wide and includes intensive (battery cages) and semi-intensive (Californian type battery house, slatted floor housing, deep litter housing and the aviary type house). Producers should be aware that the textbook economic advantages of housing layers in intensive battery houses are often outweighed by production losses due to stress.

Layers' rations must contain three to four per cent calcium needed for extra strong bones to cope with the stress and strains of egg production and laying. (Image: Hindustan Animal Feeds)

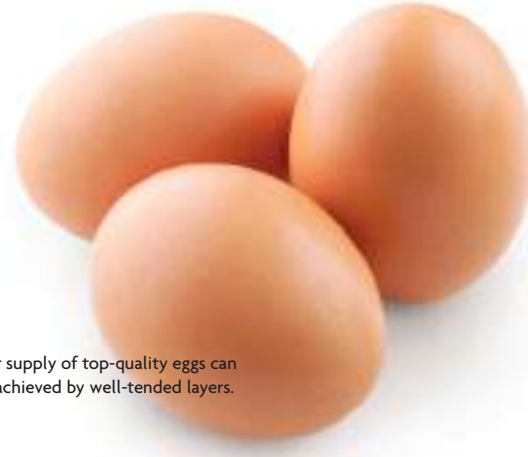
For this reason many farms, where space is not restrictive, opt for the half inside/half outside system that reduces heat stress on birds during hot season months. Where land is plentiful and predators are not a problem, farmers can use the field ark that is moved onto fresh and clean parts of the pasture every day. In countries with high rainfall, chickens can be kept on pebble yards, which are washed clean daily by rainfall.

Where appropriate, the length of the artificial day used in the house can be manipulated to stimulate egg production. The artificial day may be lengthened in one step or by a series of steps until it is 16-18 hours, at which stage the maximum number of eggs laid in the shortest possible time should be achieved. More usually and sensibly, the natural lighting of the open type housing traditionally used in the tropics is augmented by two hours of artificial light, administered in two single hour periods, one in the early hours of the morning (03.30) and the other in the early evening (19.30). Comparative studies have shown this light regime, which is economical with electricity, compares favourably in production terms with the conventional programme of .continuous lighting (natural and artificial) from 03.30 to 2030.

Feed and water management

Feed and feeding advice for laying hens may seem contradictory. Feed restriction is essential, especially for heavier breeds, if hens are to start laying at the best time and in the best condition. At the same time general advice dictates birds should never be deprived of feed and feeders should never be empty.

Hens should start to lay no earlier than 22 weeks old and not too fat and not too young. If sexual maturity is attained too early, the length and quality of overall performance will suffer. Eggs will be fewer and smaller with more prolapses towards the end of the laying period. Such birds lack vitality, die earlier and are more likely to be culled. These problems can be avoided by carefully restricting feed at the right time and in the right way as advised for specific



A regular supply of top-quality eggs can only be achieved by well-tended layers.

breeds by the farms that sell day-old chicks. Feed restriction should only be used under the following guidelines:

- Use expert advice from the breeding farm relating to the particular breed you have purchased
- Do not start before the birds are at least nine weeks old
- Supply feed in a restricted programme based on regular weighing of birds to obtain an accurate live-weight average for the flock
- Weigh birds weekly
- Sample one in 10 of the flock; half from the front of the pen and half from the back
- Take birds at random using a catching wire
- Weigh at the same time each week just before feeding
- Provide adequate feeding space so that all birds can feed at the same time
- Make feed change periods gradual. When 10 per cent of egg production has been achieved (at about 23 weeks) the flock should be on layers' mash
- Stop restrictive feeding if birds become ill or show symptoms of stress; return to feeding ad libitum

The mechanics of restrictive feeding are varied. Farmers can adopt a once-a-day feeding method and, if automated, replenish the troughs at night. Others may prefer to use the 'miss a day' method but this carries the risk of increased cannibalism due to the combined effects of boredom and hunger. This is overcome by offering extra rations based on high fibre cereals such as millet or using 'greens' that keep the birds 'happy' without adding the calories. Feed restriction practices can save the farmer up to 15 per cent in feed costs although potential savings should not enter into the equation when deciding whether or not to embark on this course. Reducing feed wastage (up to 12 per cent in laying flocks) is a safer and more sensible way of saving money.

Layers' rations must contain three to four per cent calcium needed for extra strong bones to cope with the stress and strains of egg production and laying, and as a vital ingredient for production of the shell that is mostly calcium carbonate. Feed lacking in calcium must be boosted with supplementary supplies in the form of grit (for instance, oyster-shell grit). Rivers may have accumulations of fresh water mussel shells that can be used by local poultry producers as sources of supplementary calcium.

Producers must ensure that these high calcium levels are present in the diet well before (at least two weeks) laying starts. This timing coincides with the hormonal changes that allow extra calcium to be laid down in the bones, especially the medullary bone tissue from which calcium is mobilised for eggshell formation. Poultry require the full range of vitamins, nutrients and amino acids, but Vitamin D in particular has a crucial role in the metabolism of laying hens. Hens lacking in Vitamin D are unable to utilise calcium and phosphorous with serious consequences for bone tissue and eggshell.

Ample supplies of cool and clean fresh water are essential for laying hens, especially in the tropics where they will suffer with heat stress. Lack of water will results in loss of production and higher mortality risk.

Dr Terry Mabbett

Olam's chicken and egg investment in Nigeria

OLAM INTERNATIONAL IS investing US$150mn (30bn Naira) to set up two state-of-the-art animal feed mills, poultry breeding farms and a hatchery to produce day-old-chicks in Nigeria.

At a co-hosted ground-breaking ceremony held in Kaduna State in April, Olam Group Nigeria and the Governor of Kaduna State, HE Malam Nasir el-Rufai, welcomed the Minister of Agriculture and Rural Development, Chief Audu Innocent Ogbeh representing the President of Nigeria, HE Muhammadu Buhari. The event marked the commencement of works on the project site.

Olam's CEO for Africa, Mr Venkataramani Srivathsan, commented: "This is the latest investment by Olam in Nigeria's domestic food and agricultural production sector. This new venture into animal feed is a win-win for Olam and Nigeria. Domestically produced meat is being hampered by a lack of good quality feed, support for farmers and availability of young stock, but consumption is set to increase. By investing in poultry and fish feed, we can utilise the wheat bran from our wheat milling operations, as well as maximise our sourcing networks to buy corn and soy from local farmers. Our investment in the hatchery will help boost poultry production and, in the long run, help reduce the country's reliance on imports. This development underlines the continued confidence we share in Nigeria's ambition for self-sufficiency."

According to Ade Adefeko, head corporate and government relations, Olam Nigeria: "At full capacity, both feed mills are expected to produce in excess of 600,000 tonnes per annum of high-quality poultry and fish feed. The poultry breeding farm in Kaduna is expected to produce over one million hatching eggs every week for the hatchery."

Namib Poultry Industriers training centre launched


Image: The Namibian.

NAMIB POULTRY INDUSTRIES launched its training centre at the chicken farm on the route to Okahandja at a cost of N$1.287mn (US$82,661).

The company's development programme was initiated in 2013 with the aim of creating an environment and opportunity for sharing of skills and knowledge as well as to enable entrepreneurs to use these skills in business to better enrich their lives, according to Ashante Manetti, the public relations, corporate social responsibility and stakeholder co-ordinator.

The different categories of training include outlet development, outlet equipment, promotions, customer education, demonstrations, sampling and skills development.

"In all these categories, we have found a way to develop our customers, to help develop their SME businesses, educate our consumers and develop a skill set that is already being used on a daily basis and in everyday lives," said Jacobus Henn, market development manager.

"The training facility is being used to educate and enhance skills within the economy and also facilitate training to informal market kapana cookers. In these training sessions we will share basic business skills and provide cooking techniques."

Liquid feed fats offer a good array of fatty acids, and their incorporation in poultry feed can satisfy needs at various stages of development.

Poultry feeds and the role of liquid fats

IN MODERN HIGH-DENSITY poultry feeds, liquid feed fats are an important component. They provide an excellent source of essential fatty acids and energy thanks to the range of crude vegetable oils and vegetable oil fatty acids blended into them. These include soybean, palm, rapeseed and sunflower.

Although liquid feed fats make up only a small percentage of compound feeds, they can have a significant impact on the diet of poultry as they offer a better array of fatty acids and a different acid profile than using crude soy oil alone.

Tailored formulation

Liquid feed fat producers work closely with raw material planners and production staff at feed manufacturers and poultry integrators to support their weekly raw materials requirements for vegetable-based oil and fat blends.

Being able to control the levels of fatty acids and energy, through different blends, is important, as poultry require significantly varying amounts of energy at different stages of their development. Liquid feed fats can make up five per cent of the compound feed of birds over five days old.

Young poultry utilise unsaturated fatty acids more efficiently than saturated ones.

Poultry liquid feed fat blends tend to have higher levels of oleic and linoleic acid as the birds utilise unsaturated fatty acids more efficiently than saturated ones, especially at a young age. Saturated fatty acids are also normally included in the blend as this aids carcass composition and egg size control.

The level of fat in the blend affects palatability and the overall physical quality of the feed whether in mash or pelleted diets. All fats should be blended from a strictly controlled range of sustainable ingredients to produce a consistent fatty acid profile, giving good digestibility and handling characteristics.

Being able to control the levels of fatty acids and energy, through different blends, is important.

Further benefits of liquid feed fats

Alongside the nutritional benefits, liquid feed fats can be more cost effective than crude soy oil, as they are usually less expensive.

They can also aid health and safety as, despite the seemingly innocuous nature of the materials involved, milling, handling and storing of grain and feed can all constitute a risk. Dust generated or circulated during these processes can ignite and cause an explosion.

Grain dust produced during the various agricultural processes,

Saturated fatty acids aid carcass composition and egg size control.

including harvesting, drying, handling, storage and processing can also cause respiratory problems for exposed employees.

In the UK, for example, the Health and Safety Executive has reported that "respiratory disease is a major occupational health risk. For example, in agriculture, the number of occupational asthma cases is double the national average. Studies have shown that workers' exposure to grain dust can be substantial.

Workers with occupational respiratory disease may develop permanent breathing problems, becoming disabled and unable to work."

By binding the compound feed pellets together, the liquid feed fats act as a dust suppressant, making it easier and safer to transport and distribute feed.

Regular checks give the greatest feed safety to customers.

Safety throughout the food chain

Food safety is essential along the food chain. It is vital that nothing undesirable enters the feed, as this could cause problems for the poultry and the end customer. It is important that there are several tests on the feed, not just the initial raw ingredients.

Problems can occur during poultry feed blending or storage, and this should not be overlooked. Consumers are increasingly concerned about where their food comes from, and suppliers must be confident that they can ensure safe practices throughout the food chain.

Regular checks give the greatest feed safety to customers, to ensure that all blends are only released for sale once the various test results are proven satisfactory. This "positive release" system is the most "feed safe" method of operating, ensuring full traceability, and minimises the risk of a product recall, which benefits everyone in the industry and end customers.

Big part to play

Although they account for only a small part of the overall poultry feed, liquid feed fats make a major contribution to energy management, handling ability and a safe working environment in a cost-effective manner.

wattaagnet

There is an urgent need to increase fertiliser supply to meet future food needs. In West Africa, where the population is predicted to increase to 500mn by 2050, ECOWAS has initiated reforms to create a conducive environment.

Improving fertiliser production

CROP PRODUCTION IN Africa can be both frustrating and rewarding. Modern seed and complete fertiliser nutrient blends are not always available in some of the more remote areas of sub-Saharan Africa And even then, unique economic factors impact each area of Africa where payment methods for fertiliser materials, including credit, must be considered as part of a complicated overall process.

The advancement of nitrogen, phosphorus, potassium (N-P-K), and other essential nutrients has contributed to more than 50 per cent of the world's food production

However, esssential N inputs – regardless of where they are used – must be balanced with environmental considerations and the economic return to the user. Africa is no different than any other area when it comes to this balancing act, which is promoted by the fertiliser industry and called 4R Nutrient Stewardship: balancing the right fertiliser source at the right rate at the right time and in the right place.

West Africa's population is predicted to increase to 500mn by 2050, with about a 170 per cent increase in demand for food and therefore at least a three fold increase in demand for fertiliser. There is an urgent need to increase fertiliser supply, distribution and use (from the current estimated average of 10-12 kg to 50 kg) to meet future food needs.

There is a large gap between fertiliser production and current and potential fertiliser consumption in the region. The production of nutrients in sub-Saharan Africa is less than 10 per cent of global output and the West African market has a high potential for development.

Creating an enabling environment

To reduce this gap and encourage private investment, ECOWAS, with the support of its partners, has developed and initiated reforms to create an enabling environment.

In order to create a conducive environment for private sector investment, ECOWAS has formed policies to boost regional trade:

The Jorf Lasfar fertiliser complex in Morocco.

- **Free trade:** Policies on free movement of goods and services within the region (external tariffs, joint custom border posts, etc)
- **Logistics and infrastructure development:** Policies for improvement in infrastructure (rail, roads, improved efficiency in port operations, etc)

ECOWAS has also developed regional reforms specifically to improve the fertiliser investment and business environment:

- **Regional fertiliser regulations and quality control:** Adoption and implementation of regional fertiliser regulation by ECOWAS member states
- **Harmonised fertiliser labeling:** Prescription of minimum information on labels. There are five main requirements in labeling: grade, guaranteed analysis, net weight, sources of nutrients, and name and address of manufacturer, blender or re-packaging firm

Other enablers for the private sector are:

- Full participation of private sesctor stakeholders in the process of public decision making on fertiliser-related issues (eg, NACoFeCs and WACoFeC)
- Easy authorisation to operate as a manufacturer or importer and to establish plants
- Harmonised labeling requirments
- Straightforward registration of business and licensing of fertiliser dealers
- Right to appeal before appellate authority
- Confidentiality of information supplied by applicant
- Free movement of fertilisers manufactured within one of the ECOWAS member states

"The ocean is the origin of life. Africa is the origin of mankind. Africa will be the Green Ocean, the origin of our future."

Tarik Choho, CEO of OCP Africa
Its objective is to greatly increase its volumes of sales in Africa.

To increase agricultural productivity, the food security of its population and respond to the demands of the local private sector, ECOWAS is seeking to quadruple fertiliser used in West Africa over the next five years (ECOWAP + 10/CAADP + 10) by 2025.

To achieve this goal, ECOWAS expects to considerably strengthen its relations with the fertiliser private sector especially through WAFA, WAFSF and other key fora. It will also continue to implement reforms to create a conducive environment and facilitate the supply by the private sector of adapted and quality fertilisers to producers.

The smartest solution to test soil

SOILCARES IS A worldwide company, based in the Netherlands, but with an office working in Africa, based in Kenya.

SoilCares aims to educate and innovate the farmers of the world to the importance of soil testing by creating affordable, easy-to-use and innovative products that can be purchased by agro-dealers, fertiliser companies, governments and even the farmers themselves!

Currently there is the larger, more specialised product, the Lab In A Box (LIAB), which suits the precision farmer. It carefully analyses the micro-nutrients in the soil for specific reccomendations. The LIAB suits large-scale farmers, businesses or agro-dealers looking to make a profit on soil testing in their area. The LIAB is a highly specialised piece of equipment, with a price that reflects this.

In the final stages of production, there is the SoilCares scanner: A smaller, cheaper and faster product that tests the soil in only 30 seconds! The scanner connects to the user's mobile phone and gives results in real time. This product, which is completely new to the market, will suit small-scale farmers, small businesses or agro-dealers, co-operatives or farming groups, and innovative farmers looking to earn an extra income.

The SoilCares scanner tests the soil in ony 30 seconds.

Using near-infrared (NIR) technology, the scanner measures the amount of nitrogen (N), phosphorous (P) and potassium (K), determines the pH and organic matter level and sends appropriate and personal fertiliser and lime recommendations.

The scanner is targeted at Kenya's growing agricultural sector.

Both technologies are linked to a specially created soil database, which is created, crafted and honed from the Netherlands. All soil tests done using SoilCares technology are tested against the database, making it accurate and reliable. The more soil tests done, the more analysis added to the database, the more reliable it gets.

Of all Zambia's economic sectors, agriculture holds more promise than any other in the country's march to economic diversification. Nawa Mutumweno reports.

Zambian agriculture - a sleeping giant

SINCE MINING, THE country's prime industry, is a wasting asset, it is important, more than ever before, to explore sectors that are sustainable to wean the country from the copper spoon it was born with.

Zambia has 40 per cent of the water resources of the entire southern African region. Of the 58 per cent arable land, only 14 per cent is currently cultivated. In real terms, this means that of 42mn hectares (ha), only 1.5mn ha is farmed each year.

The agricultural sector employs 85 per cent of the population and makes up around 20 per cent of overall GDP.

Food processing

Food processing represents an outstanding investment opportunity in Zambia due to vast natural resources, extensive arable land, ample water and investment incentives and many joint-venture options.

The Zambia Association of Manufacturing (ZAM), said, despite its strong performance, the country's food processing industry has achieved only around one-quarter of its capacity and potential so far.

''There are vast opportunities for more investments in most sub-sectors of Zambia's food-processing industry, for both small-scale and large-scale projects,'' ZAM said.

High potential sub-sectors encompass growing and processing oil seeds; downstream processing of meat and dairy products; producing palm oil; manufacturing soy-based food products; million wheat, rice and maize to produce flour; producing juices, carbonated drinks, beer and other beverages; processing groundnuts; producing ketchup and other tomato-based products; roasting and grinding coffee beans; processing cassava, pineapple, mangoes and sugar cane; producing dried fruit and processing fish to exploit Zambia's vast fish resources. Other investment opportunities include producing tinned foods, confectionary, bread products, honey and cheese.

One example of potential food processing projects in Zambia is COMESA's Regional Investment Agency (RIA) promotion of a greenfield project to build pineapple-canning factories in the north-western part of the country

Mwinilunga district in the province has been ranked as Zambia's best location for pineapple production. In the 1990's, a pineapple processing facility in the area produced around 11,368 tonnes from 1,421 ha of pineapple plantations. The facility was later closed down. The planned new plant is expected to produce about 12,000 tonnes of processed pineapple per annum.

Aquaculture

Diversifying away from maize, one of the sub-sectors which is being promoted is aquaculture. In August 2015, the Government launched a US$10mn privately-owned fish farm, Yalelo. The firm, located on the shores of Lake Kariba in southern Zambia, already produces 6,000 kg of tilapia daily.

In a deliberate effort to increase domestic fish production, the Government is encouraging private investment.

Justine Kateya of Matuka, Zambia, purchased a tractor through the Tractor for Maize Program.

Cattle

The Common Market for Eastern and Southern Africa (COMESA) recently received US$400,000 to support the growth of the leather sub-sector in Zambia and three other member countries.

Zambia has the potential to grow its leather value chain to half a billion dollars a year if all hides are transformed into finished products. The state has also agreed to waive taxes on leather production machines and equipment to further enhance growth.

Farm block development

In a bid to grow the agriculture sector, Government is developing the Farm Block Development Programme with vast opportunities for investors. Ten farming blocks have been identified (one in each province).

''The Nansanga Farming Block in Serenje, central Zambia, is the most advanced, with roads constructed and power connected. We have already allocated pieces of land to small-scale and commercial farmers. We are in the process of awarding 10,000 ha of land to what is referred to as a core venture,'' Minister of Agriculture, Given Lubinda said.

Irrigation

Zambia's future indeed lies in agriculture and President Lungu's administration has emphasised its determination to pursue an agriculture-led economy through the rolling out of irrigation schemes and other innovations throughout the country.

Speaking during the launch of the construction of the US$28mn Mwomboshi Irrigation Dam in Chisamba, central Zambia, recently, President Lungu reiterated his commitment to diversifying the agricultural sector.

''The construction of this dam gives a practical expression of my Government's resolve to put agriculture at the centre of our economy. Irrigation farming is an act of diversifying the sector away from rain-fed agriculture."

Currently, the construction of dams is underway in Lusitu (Chirundu) and Musakashi in Mufulira district.

''We aim to have over 75,000 ha by 2030. To achieve this, the Government will ensure adequate funds for irrigation development annually. Currently, K56.7mn (US$6mn) has been set aside for irrigation in the 2016 national budget,'' he pointed out.

Key players in Zambian agribusiness

These include, inter alia, Zambeef Products, Zambia Sugar and the Zambia Breweries Group, a subsidiary of South African giant SABMiller, one of the world's largest beer manufacturers.

Zambia's agriculture is on the rise and is changing many lives in various corners of the country.

Zambeef: Zambia must take action to invest in industrialisation in order to be competitive and take advantage of the business opportunities in the region, Zambeef joint CEO Dr Carl Irwin told delegates at the fifth Zambian International Investment Forum (ZIIF) recently.

"Zambeef strongly believes in Zambia's potential to feed itself and the region, given its abundant resources, good soils, climate, as well as the ability to produce most crops given the right investment. But only in adding value to our produce can we fully realise the sector's full potential," said Dr Irwin, who was speaking at the opening of the high-level conference, which was officially launched by HE the President, Hon Edgar Chagwa Lungu and attended by the Minister of Commerce, Trade and Industry, Hon Margaret Mwanakatwe.

Dr Irwin highlighted some of the benefits of focusing on value adding operations and the opportunities presented for the national economy: increased national food security, social development in rural areas, job creation, and tax and duty generated as result.

Zambeef alone has generated US$220mn in revenue for the financial year 2015 and US$38mn of foreign exchange income for the nation; invested more than US$50mn in the last eight years; employed more than 6,000 staff and contributed US$18mn in tax and duty paid to the Zambian government

Zambia Sugar: Margins in both the regional and EU export markets are expected to remain under pressure from surplus sugar stocks on the world market. Realisation in these markets will continue to be influenced by exchange rate movements.

A smallholder farmer in Zambia uses drip irrigation. (Image: iDE)

Zambian Breweries: Zambian Breweries and National Breweries are among the largest buyers of maize, barley, cassava and sorghum in the country.

The group purchases a significant quantity of raw materials locally. A total of 40,000 tonnes of maize is bought from small-scale farmers for use in the production of opaque and clear beer. It has worked closely with commercial farmers in the growing of barley, with a planned annual uptake of 12,000 tonnes. In 2015, two small-scale barley outgrower pilot programmes were introduced with a view to further expansion

More than10,000 tonnes of sugar were consumed towards the manufacture of non-alcoholic drinks. A further 1,750 tonnes of sorghum was used in the production of its affordable Eagle lager, with a direct impact on 3,500 households in the year to 31 March 2015.

From 2015, the company introduced cassava into its Eagle lager formula. It is now developing an end-to-end supply chain supporting small-scale farmers in Northern and Luapula provinces, and, with innovative technology, will deliver a high quality, affordable clear beer that will grow to become a leading brand within the company's portfolio.

Zambia's agriculture is on the rise and is changing many lives in various corners of the country.

As Given Lubinda summed it all at the Agritech, ''The only sector that assuredly alleviates poverty is agriculture. Our focus is to grow this industry that is the future of the country.''

Agritech Expo hailed as "tremendously successful" by ZNFU

THOUSANDS OF SMALL-SCALE, emerging and commercial farmers arrived in Chisamba in April to be part of Agritech Expo Zambia and to view the latest farming products and services.

"Agritech Expo 2016 was tremendously successful," said Mr Ndambo Ndambo, executive director of the Zambia National Farmers' Union (ZNFU), the owners of the event. He added: "By every measure, the Agritech Expo 2016 lived up to its promise: it was bigger, better and more diversified, so much that it has continued being the leading outdoor agricultural and B2B event in Zambia."

The event also offered free workshops, live machinery, product demonstrations and also crop trial demonstrations. Agritech Expo has become known as an annual event where millions of dollars of business is done on the spot, as Wayne Wiid, executive country manager of AFGRI, returning platinum sponsors, attested: "The amount of leads we received during the show was extremely positive and some deals have already been concluded".

There were many compliments from exhibitors, sponsors and visitors:

"AFGRI would like to compliment all the personnel from Spintelligent for organising (yet again) an excellent Agritech Expo 2016. We, as AFGRI, are pleased with how the show was organised and managed during the three day period. The amount of leads we received during the show was extremely positive and some deals have already been concluded. We will most definitely be back as a platinum sponsor and also continue as one of the site preparation partners" said Wayne Wiid.

Nalini Naidoo, key accounts manager, Hydraform, South Africa, an exhibitor, commented: "Very well attended event, well organised and we generated some great leads for future business. We will definitely be back next year as the show gave us the opportunity to showcase our presence in Zambia and our clients were very happy to see us at the event."

Hanif Badat, general manager, Osho Chemicals, added: "Most exciting and created more opportunity to market and expose our products to small-scale and emerging farmers".

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Research has found that copper can effectively battle the leaf-spot disease in the flowering plants.

Fight banana leaf bug with the right fungicide

SIGATOKA IS A classic crop-debilitating disease causing rapid destruction of leaf photosynthesis and accompanying catastrophic reductions in bunch weight and quality of bananas. Genomics of the genus Musa (banana) are extremely complex but, as a general rule, desert bananas (AAA genome) are more susceptible than plantain bananas (AAB genome) and vegetable bananas (ABB genome). All are essentially susceptible to severe damage by Mycosphaerella fijiensis (black Sigatoka).

Copper fungicide has travelled the complete circle in the control of Sigatoka diseases of banana. Yellow Sigatoka (leaf spot) is caused by longer established Mycosphaerella musicola but the more recently found black Sigatoka (black leaf streak) disease caused by M. fijiensis is more aggressive and damaging.

Yellow Sigatoka was first recorded in Java in 1902, and by the late 1930s the disease was widespread in Central America and the Caribbean islands where chemical control using copper fungicide began in the 1950s, first with water-based sprays using ground sprayers, and later by aerial application as oil-based sprays.

Copper fungicide destroys the fungal spore as it germinates on the leaf surface and, therefore, prevents pathogen entry into the leaf and establishment of infection.

A major infection site for both yellow and black Sigatoka is the heart leaf and first completely unfurled leaf.

Black Sigatoka sets the agenda

The first symptom appears on the lower (abaxial) leaf surface as a pale yellow streak for yellow Sigatoka or a dark brown streak for black Sigatoka around one mm to two mm long. The latter lesion increases in size and subsequently develops into a dark brown to black advanced streak up to five mm to 10mm long with an ill-defined border. Advanced streaks coalesce into so-called young spots with a dark brown to black centre surrounded by a yellow halo.

Streaks usually appear within 14-21 days of infection, initially along the left hand margin of leaves three and four (looked at from the base of the leaf to its tip), but also on leaf two (counting down from the youngest unfurled leaf) when conditions are particularly favourable for leaf infection.

The shape of these necrotic leaf spots varies from almost circular to oval but where mass infection happens the dying and dead leaf tissue assumes a greyish/white colouration which makes the outlines of individual streaks difficult to see.

A major infection site for both yellow and black Sigatoka is the heart leaf and first completely unfurled leaf but all leaves are essentially susceptible to the more aggressive black Sigatoka disease. The stage at which leaves are infected will determine the pattern of leaf spotting. This, in turn, is governed by the pattern of leaf unfurling and whether infection is by conidia (asexually produced spores) or ascospores (sexually produced spores). Other factors may include the particular stage of heart leaf unfurling at the time of infection as well as the rainfall patterns and the timing of fungicide application.

Infection by M. musicola to cause yellow Sigatoka disease is by both conidia and ascopores, the symptoms of which are distinguished as leaf-tip spotting and line spotting respectively. Leaf spotting is more prevalent towards the apex of the leaf. Conidia of M. musicola are only dispersed by water. Water droplets loaded with conidia falling into the unfurling heart leaves cause various distinct patterns of line spotting. These in turn are affected by the exact stage of leaf unfurling and the particular part of the unfurling leaf surface exposed to the spore laden droplets.

The much fewer conidia produced by M. fijiensis are only dispersed by wind and, therefore, do not result in distinct infection patterns. However, heavy infection by ascospores of the unfurling heart leaf produces a distinct line of spotting along the left edge of the leaf.

Copper comes the complete circle

Copper fungicide has a long history and pedigree for control of these diseases with black Sigatoka now sufficiently serious to actually threaten the continuation of commercial banana production in some countries. Copper fungicide was first used commercially at the end of the 19th century to control downy mildew of grapevine in France and leaf rust of coffee in Sri Lanka. First research and development trials with copper fungicide against yellow Sigatoka disease took place in the French West Indies (Guadeloupe and Martinique) and the Commonwealth

Island of Jamaica. This research laid the groundwork for today's huge worldwide programme of fungicide spraying.

First trials used copper fungicides suspended in water and applied by shoulder-mounted low volume mistblowers. The two subsequent big milestones in delivery system (spray formulation) and application technique were the use of copper fungicide suspended in oil-based formulations instead of water-based formulations and the adoption of aerial spraying over ground-based spraying. Several reasons were behind the adoption of aerial spraying. Number one was the ability to cover a much larger area in a shorter space of time, which was particularly important given the sheer size of many commercial banana plantations.

However, there were other positive factors which soon became apparent as research and development proceeded. Oil-based formulations assist with droplet formation by the rotary atomisers mounted on the aircraft, while oil as a carrier liquid reduces in flight evaporation of droplets to maintain their size and momentum for targeted deposition on the banana leaves and minimal spray drift. Furthermore, oil spreads easily over the waxy hydrophilic surface of the banana leaf to improve spray coverage while sticking fungicide deposits to the leaf surface, thus improving tenacity and resistance to wash off by rainfall.

The petroleum oils used turned out to have a fungicidal capability all of their own and were eventually commercialised and used in their own right (without any fungicide added), as banana spray oils to control yellow Sigatoka. However, in areas where lots of small farmers traditionally grow vegetables in small plots amongst and near to banana plantations, there were reports and complaints that oils were causing a wide range of phytotoxic effects to a correspondingly wide range of vegetable crops, including tomato, cucumber, lettuce, sweet pepper, onion and cabbages. These reports were supported by observations made during laboratory and greenhouse studies conducted at the St Augustine campus (Trinidad) of The University of the West Indies.

Positive profile for copper fungicide

Copper fungicides are broad spectrum protectant fungicides. Bordeaux mixture (copper sulphate and slaked lime) was the very first product to be used although the particulate fixed copper fungicides such as cuprous oxide, cupric hydroxide and copper oxychloride are now the mainstay in control for copper based fungicides. 'Particulate' refers to the formulation (eg, wettable powder or wettable granule) of discrete particles while 'fixed' denotes the sparingly soluble nature of the copper fungicide because the active principle (the divalent copper ion – Cu2+) is firmly fixed in the molecule. This is a crucially important property of the protectant copper fungicide which remains on the surface of the leaf through heavy tropical rainfall to release Cu2+ ions over a period of time.

The typical necrotic streaks caused by Black Sigatoka. (Image: Bananaroots)

Copper fungicide destroys the fungal spore as it germinates on the leaf surface and, therefore, prevents pathogen entry into the leaf and establishment of infection. Effectiveness, therefore, depends on spray timing and coverage because those leaves, or parts of an unfurling leaf, that are exposed to infection after spray application are essentially unprotected and vulnerable to infection until the next spray application. However, significant amounts of fungicide may be redistributed by rainfall over the leaf and onto leaves below in drips and splashes running off the leaves.

Copper fungicide destroys the fungal spore as it germinates on the leaf surface and, therefore, prevents pathogen entry into the leaf and establishment of infection.

Rise and fall of systemic fungicides

Increasing interest developed in systemically acting fungicides as they began to appear in the 1970's, with the benzimidazole (MBC) group, including benomyl, thiabendazole and thiophanate-methyl, among the first on the market. These were soon followed by fungicides from other chemical groups including the morpholines, pyrimidines, triazoles and strobilurins.

Systemic fungicides with translaminar activity enter a leaf [and remain there] to provide protection from the inside for those parts of the leaf which did not receive spray because they were not exposed to spray droplets (due to the stage of leaf unfurling) at the time of treatment. True systemic fungicides enter a leaf and move around the plant to protect other leaves in addition to the one through which they entered.

Systemic chemicals are 'single-site' action fungicides but this highly targeted and potent fungicidal property has effectively sealed the demise and fate of many. There is now widespread reported resistance in M. fijiensis to the benzimidazole, triazole and strobilurin fungicides.

For example, triazole fungicides which are ergosterol biosynthesis inhibitors (steroid demethylation inhibitor's or DMI's) target a specific enzyme in the fungal metabolism and stop the synthesis of sterol a vital component of fungal cell membranes.

Fungicide resistance to single-site action fungicides is controlled by a single gene (one gene-one enzyme hypothesis). Fungal insensitivity (resistance) to the fungicide will, therefore, develop much more easily and quickly than will resistance to a broad spectrum fungicide (such as copper) which hits a wide range of enzymes in the fungal metabolism.

It follows that any resistance to a broad spectrum will therefore be controlled by a 'bank' of genes making it that more difficult to achieve, even for a genetically versatile fungal pathogen like M. fijiensis. There have been no reports of resistance to copper fungicides although they have been widely and intensively used for more than 100 years on most tropical and temperate crop plants.

Widespread fungicide resistance recorded in M. fijiensis has provoked a major re-assessment in chemical control with increased use of broad spectrum protectant copper fungicides high on the agenda. Cuprous oxide, which has the highest proportion of active copper in the molecule and which is generally accepted as the most efficacious of the particulate fixed copper fungicides (on a gram for gram basis), is the one to watch.

Dr Baksh

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Tim Guest discusses how Integrated Pest Management (IPM) approach to pest control is a far better option in many African scenarios – and one which should be adopted far more widely the world over.

IPM - keeping the water safe

THERE IS NO doubt that the effects of certain pests can be devastating for arable crops, in turn reducing the income for farmers and their families, affecting food supplies for the community, or even feed for livestock. Using pesticides to avoid such a scenario would, therefore, seem to be not an unreasonable course of action.

However, the impact of certain pesticides, particularly in an African setting, poses potentially greater perils than the same chemicals might pose in more developed regions. This makes an Integrated Pest Management (IPM) approach to pest control a far better option in many African scenarios – and one which should be adopted far more widely the world over.

A toxic chemical seeps into the ground, to the roots of an arable crop and destroys the weevil grubs set to wreck havoc and destroy the plants above. The chemical, a pesticide, leaches its way deeper and deeper into the earth and down, down towards the water table, finding its way into underground water courses and, eventually, into rivers if they haven't already been impacted by run-off from the fields. In developed nations, the negative effects of such a sequence of events are mitigated, or certainly disguised, by sophisticated water treatment processes and purified mains water supplies. As a result, privileged populations are none the wiser, as they sip a fresh glass of water from the kitchen sink, or fill up a watering can from an outdoor tap to water their gardens.

This sequence of events has a much more damaging effect, however, in developing regions where communities rely on wells and other natural water sources from which to draw water to meet their every, daily need. Drinking, washing, irrigation, sanitation are not niceties of life but rather the essentials. Water from a well needs to be fit for drinking from source. Water from the ground needs to be pure to nourish vital community crops and water livestock without the need for purification. Lives and livelihoods depend on it. There's no bottled alternative at the corner store. In many cases, there's no corner store at all.

The bottom line is that water needs to be protected from any kind of contamination at all costs in Africa's rural and semi-urban settings; while pesticides may offer one option, one solution to stubborn agricultural challenges, their over-use should be avoided where possible and where effective alternatives can be employed.

Water needs to be protected from any kind of contamination at all costs in Africa's rural and semi-urban settings.

Integrated Pest Management (IPM) – an effective alternative

Developing an effective IPM strategy takes into account and assesses each and every available pest control technique for a given scenario and develops an integrated approach using one or more suitable measures that will prevent, or at least discourage, pest populations from becoming established. In turn, this will help

An IPM approach to pest control can negate the widespread use of pesticides and thereby protect vital sources of groundwater from toxic contamination.

restrict or even negate the use of pesticides and other forms of intervention, keeping them at levels that can be justified economically and, most importantly, reduce risks from using pesticides to human health and the environment. With healthy crops being its ultimate aim, an IPM approach sets out to do so with the least possible disruption to the balance of any agro-ecosystem and through the encouragement of natural pest control mechanisms.

As we've mentioned before in African Farming magazine, the UN's Food and Agriculture Organisation (FAO) promotes IPM as its preferred method of crop protection, regarding it as crucial for sustainable intensified crop production and for reducing the very real risks the use of pesticides poses.

Last month, the FAO's Bill Murray discussed the subject of 'global co-operation on the lifecycle management of pesticides'. He said, "The adoption of the Sustainable Development Goals (SDGs) in September last year, along with the outcome of the discussions on climate change during COP21 [see: http://www.cop21paris.org] in Paris put the importance of sustainable agriculture and rural development at the centre of the global policy agenda."

He added that as part of the Rotterdam Convention in Rome, his organisation's work is embedded in the Strategic Framework of the convention, which he said, "serves as a first line of protection for parties against the unwanted import of potentially harmful, hazardous pesticides and industrial chemicals. It also facilitates access to a broad range of knowledge and experience to strengthen national decision making on the use of such chemicals".

This level of interest by the FAO clearly demonstrates how serious the uncontrolled and often unnecessary use of pesticides needs to be taken, particularly in the context of the African farming sector, where it has been shown in many regions that IPM offers very real and successful, beneficial alternatives.

Threat to water

Agricultural pests such as insects, fungi, and weeds that have the potential to impact crop production through decreasing yields, crop quality or even total crop destruction can all be controlled through the use of pesticides. By employing IPM practices as a pest control method, however, can also control these pests and negate the need for pesticide use, in turn reducing the impact of toxic chemicals on surface and groundwater supplies.

The problem with chemical pesticides is that they exhibit a wide variety of differing characteristics; persistent pesticides, for example, pose a greater threat to the environment than some others by remaining active for longer due to their chemical degradation processes.

Other highly soluble pesticides will be carried with the water flow and tend to leach from the soil into groundwater sources more readily than others. Some pesticides are very expensive, and while a higher potency of the chemical might destroy the target pest, it may also kill non-target species also and even impact the health of local communities.

The number of factors to be taken into account when using a toxic pesticide are just too many to consider here – drift and atmospheric toxic rainfall to name but two more. The bottom line is that their use will impact the groundwater supplies on which tens of millions of people across Africa rely for their survival. The good news is that IPM approaches can alleviate the problem and represents a balanced approach to optimising pesticide use, generally reducing the frequency of pesticide application – sometimes eliminating its need altogether – thereby reducing water contamination.

By employing IPM practices as a pest control method can control these pests and negate the need for pesticide use.

Proof of IPM's effectiveness is in the pudding – Kenyan successes

In Nairobi, the Stockholm Convention Regional Centre in Kenya (SCRC-Kenya), was established in the 1970s under the wings of the International Centre of Insect Physiology and Ecology (icipe – www.icipe.org) to research and develop alternative and environmentally friendly pest and vector management strategies that are effective, selective, non-polluting, non-resistance inducing, and which are affordable to resource-limited rural and urban communities.

Last year the centre was recognised for its excellent performance in taking an holistic and integrated approach through what it calls

Successful methods of IPM, as proven by the SCRC-Kenya, include: push-pull habitat management, biopesticide use, and classical biological control against the spotted stemborer.

'a 4-H paradigm' comprising: Human Health, Animal Health, Plant Health and Environmental Health. The centre's R&D has led to a number of effective alternatives that are today actively contributing to a reduction in the use of hazardous pesticides, including persistent organic pollutants (POPs) across Africa.

Some of the most successful initiatives taken by the centre that have led to a significant reduction in the use of chemical-based pesticides, include: 'Push–pull' habitat management strategy [see African Farming May/June issue 2015]; the use of biopesticides; fruit-fly IPM; diamondback moth biological control; classical biological control against the spotted stemborer, Chilo partellus.

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Insufficient drying may negatively impact on other stages of the rice post-harvest process, such as threshing, milling and even harvesting. Dr Terry Mabbett reports.

Drying is the most critical post-harvest step for rice

ALL CEREALS REQUIRE drying post-harvest and none more so than rice. Irrigated rice is in water for most of the crop growth and development cycle so it is hardly surprising that harvested rice contains a high concentration of water, generally around the 25 per cent w/w (weight/weight) mark. Negative effects in storage - including grain discolouration, encouragement of mould growth, leading in turn to insect pest infestation - are most frequently cited as reasons for strictly controlled post-harvest drying of rice, but too high moisture contents can also reduce the germination rate of rice earmarked for seed purposes.

Safe storage is clearly important, but insufficient drying may negatively impact on other stages of the rice post-harvest process, such as threshing, milling and even harvesting. Drying must be carried out as soon as possible after harvesting and ideally within 24 hours. Any delay in drying, incomplete drying or ineffective drying will invariably result in reduced grain quality and weight losses with accompanying financial penalty.

Traditional methods are still widely used and valued for their low cost and ease of operation.

Drying paddy in Madagascar. (Image: guezmer)

Unlike other small grain cereals such as wheat and barley, harvested as the separated grain, rice is traditionally harvested as paddy (the complete rice plant) and the grain separated post-harvest by threshing. Paddy drying methods include traditional and mechanical systems employing widely varying technological complexities with hugely different throughput capacities for use both on-farm and at commercial levels.

Traditional methods

Traditional methods, which are still widely used and valued for their low cost and ease of operation, include: 'Sun drying' and 'field drying and stacking'.

Sun drying on mats (mat drying) is

typically used for small to medium-scale drying. Threshed rice grain is simply placed on mats, nets or canvas and exposed to the sun. Pavement drying is a useful alternative favoured for larger scale drying by grain collectors and millers where grain is laid out on pavements specifically designed and established for grain drying.

Field drying and stacking is a method of drying hand-harvested crops prior to threshing and where farmers traditionally cut the rice panicles in the field and stack them in small piles over the rice crop stubble. This method is still used but definitely not recommended because it invariably leads to high losses when grain becomes over-dried and consequently shatters.

Alvan Blanch rice parboiling and milling plant for Hillcrest Agro-Allied Industries in Nigeria.

The basics of rice grain drying

Successful cereal grain (including rice) drying requires exposure to a moving body of ambient air of low relative humidity (RH) or alternatively to heated air, firstly to evaporate moisture from the grains and secondly to remove this moisture from the grain bulk. Given the crucial importance of drying in the overall scheme of successful rice processing, it is very important to understand and appreciate the fundamentals of moisture content in cereal grain and the mechanics of drying.

Operators must appreciate that rice grain is a hygroscopic material.

First and foremost, operators must appreciate that rice grain, (like cooking and table salt [sodium chloride] and cured cocoa beans) is a hygroscopic material. Thus, when rice is exposed to air with a low RH, the grain will release water into the air in the process commonly known as drying. However, when the same rice is exposed to air with a high RH the grain will absorb water

from the air in a process called re-wetting.

This movement of water in and out of rice grain occurs until equilibrium has been established between the moisture level in the grain and the air. The secret of success is to establish the final desired moisture content of the rice grain and called the 'Equilibrium Moisture content' (EMC) and then store the grain under specific atmosphere conditions of temperature and RH that will maintain the grain at that desired EMC.

Thus, during storage, the final and desired moisture content of the rice grain is determined by the temperature and RH of the air which surrounds the grain. And if the grain is not protected against rising humidity levels, especially during wet season months when RH will be intrinsically high, the grain moisture content will start to rise, leading to a rapid and serious deterioration in food-grain and seed-grain quality.

The industry has developed a wide range of portable meters which can be used on site by non-scientific personnel to measure grain moisture contents quickly, easily and accurately.

The mechanics of moisture content

Moisture content (MC) is defined as the mass (weight) of water contained in paddy or grain and expressed as a percentage of the total weight of rice. Two other terms that readers should be familiar with are 'Moisture Content Wet Basis (MCwb)' which refers to the total weight of the grain including the water contained therein, and, for research purposes ,'Moisture Content Dry Basis (MCdb)' which is the weight of rice dry matter remaining after all the water has been driven off.

Measuring the water content of rice is very important because:

- Harvesting losses and extra drying costs are incurred if paddy is harvested with too much moisture
- Farmers, millers and others are invariably faced with huge potential losses – physical and biological (moulds and insects) if grain is stored at a MC which is higher than the optimum 13 to 14 per cent w/w.
- Extra and unnecessary drying costs and significant losses in quality are incurred if paddy is over-dried.
- Loss in weight leading to a loss in profit if the rice grain is marketed too dry.

Alvan Blanch rice processing plant and cleaning system for Zuru Rice Mills in Nigeria.

Measurement of moisture content

The MC of grain can be measured using so-called 'primary' or 'secondary' methods.

The primary method is based on comparative (before and after) weight measurements using an oven or an infrared moisture balance, while the secondary method employs an electronic instrument using electrical principles to calculate the moisture content of the grain.

Over the years the industry has developed a wide range of portable grain moisture meters which can be used on site by non-scientific personnel to measure grain moisture contents quickly, easily and accurately. When selecting a moisture meter, users should ensure their choice is suitable for measuring moisture at, for instance, the rice crop harvest or rice grain milling stage, depending upon the activity they are engaged in.

The most practical option when planning to measure MC at the harvesting stage is a resistance-type moisture meter that provides rapid results and by only using small grain samples. The alternative capacitive moisture meters are more accurate but do require a larger sample and are more expensive to purchase and run.

Moisture content numbers for rice grain and seed

The desired moisture content (MC) and the consequences of not getting it right in terms of deterioration, damage and loss will depend on the actual stage of the 'rice process' from harvesting onwards:

Harvesting – A target MC of 20-25 per cent w/w at harvest; if the paddy is too wet, then the panicle heads will be un-filled with many 'green grains' present. If the paddy is too dry the grain will be prone to shattering.

Threshing – Target MC for mechanical threshing is 20-25 per cent w/w and less than 20 per cent w/w for hand threshing. Consequences of not getting it right are incomplete threshing and grain damage especially from cracking.

Drying – Final MC is 14 per cent w/w maximum. Moisture contents exceeding 14 per cent w/w cause increasing loss from physical deterioration including discolouration, mould and insect activity and damage.

Storage – Storage of rice as food grain requires a moisture content of less than 14 per cent w/w. For seed purposes rice should be stored at less than 12 per cent w/w and below nine per cent w/w if long term storage is involved. Moisture contents over and above these maximum levels are responsible for increasing levels of fungal, insect and rodent damage and loss of vigour for rice seed.

Milling – Desired MC is 13-14 per cent w/w. Grain cracking, grain breakage and over-milling will become significant problems if MC is not kept within this narrow range.

The need for a greater uptake of people-centred ecological agriculture practices and systems is now widely recognised, but solutions proposed for increasing food security in Africa are still largely skewed towards the industrialisation of African agriculture, with economically and environmentally unsustainable imported external inputs such as synthentic fertilisers, pesticides and herbicides.

Organic agriculture – for sustainable productivity

COMBATTING HUNGER AND feeding the continent, and the world at large, is one of the most important challenges today and in the future, with the answer to this hurdle being the need for further intensification of agricultural production.

Agriculture needs to safeguard the soils and ecosystems with their biodiversity, as well as farmers and local people. In short, it needs to be ecologically sound and sustainable in the long-term. Organic agriculture aims at a sustainable production system based on natural processes.

Undoubtedly, organic agriculture has the potential for delivering a very important component in combating hunger, feeding people and alleviating poverty in a sustainable way, especially in developing countries.

''Organic agriculture is an integrated system of farming based on ecological principles. It is defined as meeting the needs of the present generation without jeopardising the needs of future generations. It must also be economically sustainable to the farmers, and to society as a whole,'' the Field Crop Manual (Farming and Marketing of Organic Crops in Zambia, Southern and Eastern Africa) explains.

Key characteristics are that organic agriculture:

- Relies primarily on local, renewable resources
- Makes efficient use of solar energy and the production potential of biological systems
- Maintains and improves the fertility of the soil
- Maximises recirculation of plant nutrients and organic matter
- Does not use organisms or substances foreign to nature (eg, GMOs, chemical fertilisers or pesticides)
- Maintains diversity in the production system as well as the agricultural landscape and
- Gives farm animals life conditions that correspond to their ecological role and allow them a natural behaviour

Organic agriculture is a sustainable and environmentally-friendly production method, which has particular advantages for small-scale farmers in developing countries. It contributes to poverty alleviation and food security with a combination of many features, most notably by:

- Increasing yields in low-input areas over time
- Conserving biodiversity and nature resources on the farm and in the surrounding areas
- Increasing net income and/or reducing costs of externally purchased inputs
- Producing safe and varied food; and
- Being sustainable in the long-term

''The majority of farmers in the world, and especially in Africa, are small-scale traditional farmers who are organic by default. Teaching these farmers to add good organic practices to their traditional methods such as better soil nutrition – recycling organic matter (carbon) and mineral balance; improved pest and disease control; water use efficiency – especially increasing soil organic matter; better weed control methods; eco-function intensification: stacking systems, leads to increases in yields,'' said Andre Leu, president, International Federation of Agriculture Organic Movements (IFOAM), the international umbrella body of the organic world.

Organic vegetable cultivation.

Organic agriculture has the potential for delivering a very important component in combating hunger, feeding people and alleviating poverty in a sustainable way.

Climate change

One of the critical issues that is facing Africa is dealing with climate change. Farmers have to adapt to the increasing intensity and frequency of adverse weather events such as drought and intense damaging rainfall events.

''As most of Africa's agriculture is rain-fed, adaptation to climate change has to be the first priority to ensure food security. The good news is that organic systems have higher yields than conventional farming systems in weather extremes such as floods and droughts,'' the Ecological Organic


Organic exports from Uganda quintupled in five years, according to official statistics. (Image: Africa Agribusiness)

Alternative for Africa published by IFOAM in March 2012 reads in part.

On the African Union (AU) front, agriculture has been placed as a development catalyst on the continent, and was tailored towards the achievement of the just-ended Millenium Development Goals in the Declaration of the New Partnership for Africa's Development (NEPAD) and in the Comprehensive African Agriculture Development Programme (CAADP) through the promotion of increased public and private collaboration within the African agribusiness sector.

CAADP Pillar 3 recognises the need to direct agricultural development towards the most vulnerable populations so they benefit from the growth. This requires, according to CAADP, accurate, timely and reliable information systems that identify vulnerability, map and monitor poverty and assess the incidence of hunger and malnutrition in relation to agricultural productivity, which are essential for decision-making in response to unforeseen emergencies and needs.

Organic agriculture: The issues for Africa

It is non-debatable that organic farming is a perfect complement to the current efforts to strengthen conventional food production bases. Given the enormous potential of the sector, it is prudent that a feasible and sustainable framework for exploiting organic farming is put in place as soon as possible.

There are challenges for African countries to seize these opportunities, especially in terms of building productive capacities and market access, and reducing entry difficulties. Organic agriculture and other forms of sustainable agriculture are virtually absent in agricultural education, extension services, and research and development. This lack of awareness of organic agriculture, combined with dispersed supply, means that domestic markets for organic products are small albeit growing.

The African Ecological Organic Agriculture Initiative addresses itself to six requirements in organic agriculture – research, training and extension; information and communication; value chain and market development; networking and partnerships; supportive policies and programmes; and institutional capacity development.

The way forward

Given the renewed interest in organic agriculture, there is a need to take advantage of promising initiatives and opportunities, such as the EOA, to support the global effort to eradicate hunger and improve livelihoods, especially those of millions of smallholders and those who depend on organic agriculture for their livelihoods.

Concerted action is needed to support resource-poor farmers and producers, including women, to develop their capacities and self-reliance to optimise their productivity through farm inputs such as quality seeds, fertilisers and appropriate technologies, as well as certification systems for organic products.

According to UNCTAD-UNEP Capacity Building Task Force, governments should support the development of a domestic organic sector. There is also a need for development partners and actors in organic agriculture, agricultural extension and advisory services to scale up their financial support to organic agriculture in Africa as demanded by the African Ecological Organic Agriculture Initiative and Action Plan.

Indeed, there is hope for organic agriculture in the continent's poverty reduction agenda. All stakeholders should play an active part if this hope is to turn into reality soon.

Nawa Mutumweno

Many of the recent tractor developments are in the high horsepower sector, but there are also new and updated models for those with a smaller power requirement. Michael Williams reports.

Tractor progress

Power outputs for the new three-model T5 tractor series from New Holland start at 99 hp.

AFTER THE ANNOUNCEMENT OF new high horsepower tractors in 2015, this year's new arrivals from New Holland include the T5 series with three models offering outputs from 99 to 117 hp. The power unit is a 3.4 litre engine with improved torque performance and the transmission is a semi-powershift. Because tractors in this power range are often used for loader work, the T5 transmission has a shuttle to simplify forwards-reverse changes, and an adjustment on the latest T5 models allows drivers to select slower but smoother direction changes to reduce load spillage risks and allow more accurate stacking.

New Holland is also updating the T6 tractor series covering the 115 to 175 hp range. Five of the six models have four-cylinder engines while the top model can have six cylinders. A redesigned chassis offers improved traction while retaining a 4.3 m turning circle, and front axle suspension for improved control over rough ground is available.

The ArmaTrac range is built in Turkey by Erkunt Tractor Co, which is rapidly expanding its overseas marketing operations.

New arrivals from McCormick

The new arrivals in the McCormick range from the Italian-based Agriargo group are in the small to medium horsepower X5 and X6 series. There are four X5 models featuring increased fuel tank capacity, hydraulic system improvements include a 21 per cent increase in the oil flow, and the cab is redesigned. All models are equipped with 3.4-litre Perkins engines providing rated outputs from 95 to 113 hp.

Power outputs from the three X6 McCormick tractors are 111 to 130 hp, using FPT engines from the Fiat company, and the standard transmission has 36 forward gears and 12 in reverse, with additional creeper gears available as an option. The options list also includes 40 or 50 kph transmissions, and the X6 tractors can also be equipped with front axle suspension.

Competitively priced with no frills

The ArmaTrac range offers competitively priced tractors with a no frills specification in the small to medium power range. They are built in Turkey by Erkunt Tractor Co, which is rapidly expanding its overseas marketing operations. Two and four-wheel drive tractors are available, powered mainly by Perkins engines, and the popular models include the 504e with 50 hp output and a manual transmission with 12 speeds forwards and in reverse, and the 1104 Lux model has a 113 hp engine and a 16-speed gearbox. Specification improvements on current ArmaTrac models include an increased hydraulic performance, and this has produced lift capacities on the rear linkage of 2.2 tonnes for the 50 hp model, increasing to five tonnes for the 113 hp tractor.

Last year's list of new tractor developments from Claas included the launch of the new Atos series consisting of six new models powered by three and four-cylinder engines. Power outputs are from 76 to 109hp and lift capacity on the rear linkage is 3.6 tonnes for the three-cylinder 200 series models, increasing to 4.8 tonnes for the four-cylinder tractors. The standard specification includes a manual gearbox with 10 speeds forwards and in reverse, but 20 and 30-speed versions are also available.

Claas also announced additions to extend their Arion 400 series to six models, all with four-cylinder FPT engines producing from 90 to 140 hp and offered with a semi-powershift transmission. For customers needing more power, Claas has also introduced three additional Axion 800 series models, bringing the total to seven, covering the 205 to 280 hp sector. They have FPT engines with a power boost that automatically adds up to 15 hp extra for transport or p-t-o work.

Massey Ferguson 'Global Series' tractors have a no-frills specification and the emphasis is on cost-effective power. The Global Series started at about 75 hp, but two recent additions take the world tractor concept into the medium power sector. The new models are the MF 6700 series, both powered by 4.4-litre Agco/Sisu power units which produce 120hp for the 6712 model and 130 hp for the 6713 version. Platform and cab versions are available, and both models have a manually operated gearbox with 12 forward and reverse speeds; a powershuttle is on the options list, the top speed is 40 kph and the rear linkage has 5.2 tonnes lift capacity.

New models from Massey Ferguson

Also new from Massey Ferguson are the three MF 4700 models powered by three-cylinder engines producing 75, 85 and 95 hp. The synchro-shuttle 12-speed gearbox has a 40 kph top speed and creeper gears are available, and the rear linkage can lift 3,000 kg. Further up the power range, Massey Ferguson has introduced the MF 7700 series to replace the 7600 range. The seven models have six-cylinder engines with rated power outputs from 140 to 255 hp, but the standard specification includes Engine Power Management or EPM to provide a power boost, taking the maximum output to 280 hp for the top model. All 7700 models have a new maintenance-free front axle

suspension and the transmission options include the Dyna-VT constantly variable transmission or CVT.

The three new 4000 series Fastrac tractors from the JCB factory use 6.6-litre AGCO Power engines to produce rated outputs of 160, 189 and 217 hp, but the power boost feature increases the outputs by about 10 per cent. The new tractors retain the Fastrac's high speed capability with 60 kph available for transport work, maximum lift capacity is 8,000 kg on the rear linkage, the front linkage can lift 3,500 kg, and the load space behind the cab carries 4,000 kg. The self-levelling suspension is a special Fastrac feature, and on the new models it includes a new hydraulic front suspension that compensates for load changes to maintain the correct ride height. The drive system is a constantly variable transmission (CVT), and four-wheel steering is an option.

The 130hp version of Massey Ferguson's new Global Series 6700 tractors.

In the search for increased fuel economy and lower running costs, many of the leading tractor companies are squeezing more and more power out of four-cylinder engines.

In the search for increased fuel economy and lower running costs, many of the leading tractor companies are squeezing more and more power out of four-cylinder engines instead of moving up to six cylinders. An example is the top model in Valtra's new N4 tractor series announced at the end of last year, which has a four-cylinder engine producing a maximum of 185 hp, including the power boost, from four cylinders. All the N4 tractor engines are powered by four-cylinder AGCO Power engines with 4.4 litres capacity up to 125 hp, increasing to 4.9 litres for the top three models. A special transmission feature is the Automatic Slip Regulator or ASR that manages the engine speed to achieve optimum traction efficiency.

Valtra also announced the T4 tractor

The new high horsepower 9RX series tractors from John Deere are mounted on four rubber tracks.

series last year with six models from 155 to 215 hp rated output using 6.6 and 7.4-litre engines. Sales features include a completely new cab design with increased space and the maintenance routine is simplified by 600-hour servicing intervals plus built-in glass windows for checking the transmission and hydraulic oil levels.

High horsepower sector in Deutz Fahr 9 series

Four models cover the high horsepower sector in the new Deutz-Fahr 9 series from Same Deutz-Fahr. They are powered by Deutz TTCD series engines producing from 274 to 336 hp from 7.8 litres capacity. The specification includes a ZF Terramatic CVT transmission, front axle suspension is standard, the p-t-o has three operating speeds and the rear linkage has 12,000 kg lift capacity. Another recent development from Deutz-Fahr is the new CShift semi-automatic shift system featured on the powershift transmission for the latest Deutz-Fahr 6 series tractors. The transmission has six speeds in four powershift ranges, and CShift simplifies the range selection process.

With up to 500 hp available, the Vario 1000 series announced last year by Fendt is said to include the world's most powerful standard layout wheeled tractors. There are four models, all powered by six-cylinder MAN engines with 12.4 litres capacity and with rated outputs from 380 to 500 hp. The tractors are designed to deliver high power outputs at relatively slow engine speeds to improve fuel efficiency, and the engine in the range-topping Vario 1050 model runs at only 950 rpm to produce 40 kph with 60 kph available at 1450 rpm. The transmission, as on all Fendt tractors, is a Vario CVT.

Further down the power scale, Fendt has also added new models to the Vario 300 range. Maximum outputs are from 110 to 138 hp using AGCO Power four-cylinder engines, the Vario transmission has a 40 kph top speed and a three-speed p-t-o is standard. Lift capacities are 5,960 kg at the rear and 3,130 kg on the front linkage.

Tracklayers from John Deere

Tracklayers of various types feature in some high horsepower developments including the 9RX series from John Deere. The 9RX has articulated or pivot steering and power is delivered through four rubber tracks. The maximum travel speed is 40kph and the standard track width is 76 cm, but a 91 cm version is available to provide a further reduction in ground pressure. Four models are available with power outputs in the 470 to 620 hp range, using 13.5-litre John Deere PSS series engines for two of the tractors, while the top two models have 15-litre Cummins power units. All four engines are equipped with cooled exhaust gas recirculation.

Also new from John Deere are 14 updated models in the 6R and 6M series. The 6R models were announced last year followed by the 6M tractors this year, and

The three Rowtrac models from Case IH are based on the Magnum series with tracks at the rear.

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between them they cover the important 110 to 195 hp sector. Both four and six-cylinder power units are included, and the updates include improvements to the controls, while the latest version of the John Deere TLS front suspension offers better steering control and a smoother ride.

A different approach to tracklayer design

Case IH, the company that pioneered using four rubber tracks when they announced the first of their Quadtrac models in 1996, has taken a different approach to tracklayer design with the new Magnum Rowtrac models announced last year. The Rowtracs offer an alternative tracklaying option in the Case range, based on Magnum series wheeled tractors but with the rear wheels replaced by rubber tracks. Benefits are said to include improved traction with less soil compaction while reducing the surface 'scuffing' of a pair of conventional full length tracks. The three Rowtrac models have rated outputs from 311 to 379 hp, increasing to 382 to 435 hp with the power boost.

Also new in a busy period for Case IH product development are the two Optum CVX models. Powered by 6.7-litre FPT engines producing 270 and 300hp, Optum tractors feature a new four-range CVT drive system with a choice of 40 or 50 kph top speed, and the specification includes a four-speed p-t-o. Cab suspension is standard and ABS braking is an option. The Case range also includes additional Puma models bringing the total to seven. Outputs are 150 to 240 hp from six-cylinder FPT engines.

Engine outputs start at 457 hp for the MT800E high horsepower tracklayer series from Challenger, and the top model has a 12-cylinder AGCO Power engine delivering 598 hp, increasing to 646 hp with power boost. Improvements introduced last year include a restyled hood to improve the air flow around the engine and improving the maintenance access, and improvements to the engine have increased efficiency. The effectiveness of the work lights has improved and noise levels in the cab are reduced.

Fendt's recently introduced Vario 1000 series tractors offer outputs from 380 to 500 hp.

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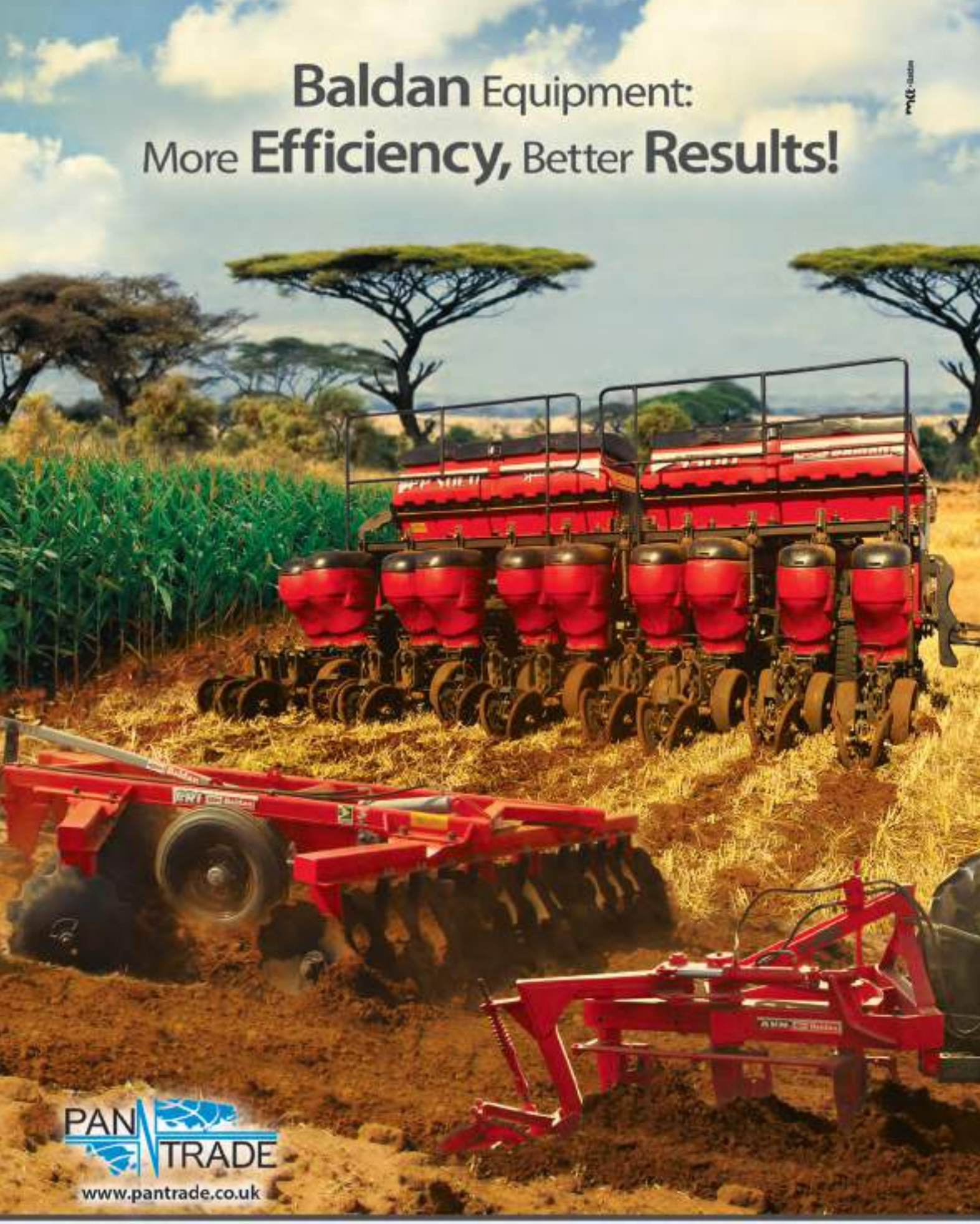

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Less stress, more efficiency in the logistics segment

AGRICULTURAL EQUIPMENT MANUFACTURER Claas has developed a new mobile application called Fleet View, which allows a farmer to co-ordinate grain transport tractor-trailer units in a harvesting fleet.

During harvest, combine harvesters have to be kept running while the weather is favourable, as downtime costs the farmer money. Through this app, the drivers are constantly informed about the grain tank fill levels and positions of individual combine harvesters in a fleet, helping drivers decide which combine harvester they must drive to next, said Claas.

Usually, drivers of tractor-trailer units would make that decision, based on their experience and intuition, and probably rely on a clear view of machines or depend on radio contact.

With large fields, visibility gets hampered. In addition, inexperienced drivers end up driving the tractor-trailer to the wrong combine harvesters. Claas' Fleet View solves this problem with a graphic display on a commercially available tablet PC or smartphone, which every driver in the logistics chain can be equipped with. The display shows the current field positions of all combine harvesters at all times, as well as their respective grain tank fill levels. This information allows the driver to immediately decide which combine harvester they should drive to next and which route they should take to do so.

The continuous flow of information between the combine harvester and transport vehicle is provided by four sensors in the grain tank, a

The display shows the current field positions of all combine harvesters at all times, as well as their respective grain tank fill levels.

Quantimeter and a transmission module on the combine harvester. The fill level of the combine harvester is continuously measured using the Quantimeter and the values from the grain tank sensors. The current fill level data are continuously transmitted by the transmission module to the tablet PC or smartphone via the mobile telephone network, and are updated in real-time. Since the quantity of data transmitted is very small, Fleet View still works perfectly well in regions with a weak mobile telephone network. The geo-positioning data of the combine harvesters, which are also required for the system to work, are obtained through a communications module which is also used by the Claas Telematics system. The transmission module required by the system is also part of the basic equipment of Telematics.

JCB product marks production milestone

A JCB PRODUCT that revolutionised the handling of loads on farms as well as construction sites has passed a major milestone – the production of the 200,000th machine.

The JCB Loadall telescopic handler was first manufactured in 1977, transforming lifting and loading tasks on building sites which until then had been carried out by a small team of men. On farms too the purpose-built machine boosted productivity, stacking bales, loading muck and shovelling grain, replacing rudimentary tractor-mounted hydraulic loaders.

The first JCB Loadall – the JCB 520 model – was produced at JCB's World HQ in Rocester, Staffordshire, in October 1977 and in the first full year of production less than 300 machines were made by just a handful of employees. Today thousands of

The JCB 525-60 model was introduced in 2015.

Loadalls roll off the production line every year and the business producing them employs around 800 people. JCB Chairman Lord Bamford said, "From very small beginnings, the JCB Loadall has become a very important machine for JCB and for the construction and agricultural industries. Revolutionary is often a word that is over-used, but in the case of the Loadall it is a perfect description. The way loads are handled on building sites and farms has never been been the same since we introduced the Loadall in 1977."

In addition to front-end two-wheel steering that made it easier to pilot a Loadall along the road, drivers could enjoy pirouetting in tight circles with all wheels steering or even shuffling sideways in crab-steer mode to get out of an awkward corner or take the edge of a bucket along the bottom of a wall in a cattle yard.

New Holland launches T6 all-purpose tractor series

NEW HOLLAND AGRICULTURE has launched the new T6 all-purpose tractor series that combines ultimate power with advanced technology to deliver unmatched comfort, visibility and manoeuvrability together with more power and performance. The new range also introduces New Holland's sleek new tractor family styling.

The new T6 complies with Tier 4B emissions standards with New Holland's ECOBlue Hi-eSCR (High-Efficiency Selective Catalytic Reduction) technology. With this after-treatment system the engine breathes clean air, optimising combustion, torque rise and fuel efficiency.

The new T6 engines achieve better performance by maximising power output from each cylinder. The new engine control unit brings the engine to maximum torque faster and holds through to the lower rpm longer, outperforming the previous generation's engine. The Engine Power Management develops more power and torque according to the load on the transmission, hydraulics and PTO. On the T6.165 it can deliver up to 33 extra horsepower when it is needed to maintain performance. Engine Speed Management ensures the engine speed is maintained under changing loads, for applications that require a constant PTO speed or to maintain a fixed forward speed in difficult terrain.

All these features result in a powerful, responsive and efficient performance that is achieved with the same fluid consumption (diesel fuel and DEF) as the previous generation, and with longer refuelling intervals.

Galvanising African agriculture through efficient farm mechanisation

MASSEY FERGUSON RECENTLY invited farmers and agricultural dealers from across Africa to attend its exciting 'Vision of the Future' farm mechanisation event at the AGCO Future Farm in Lusaka.

"This major event is a catalyst for ideas focused on farm mechanisation as a key driver for growth in African agriculture," said Thierry Lhotte, Massey Ferguson VP marketing, Europe/Africa/Middle East (EAME). "With up to 100 machines on show, this will be the biggest spectacle of MF farm machinery and agricultural services staged in Africa for many years. Our emphasis is firmly on the new generation of farmers, farm workers and agribusinesses and their vital role in advancing the future of African farming. We have planned a really dynamic and thought-provoking experience with plenty to inform, inspire and entertain our guests."

Reflecting Massey Ferguson's mission to supply a comprehensive and progressive system of farm mechanisation for all types of farm enterprise, machines from its full-line catalogue were showing their paces. A number of products saw their African debut at the event. MF tractors, harvesting machinery, implements, hay and forage tools, seeding and tillage and materials handling equipment, plus some of the latest farming techniques to support African agriculture, were on display and demonstrated. Alongside this was a programme of workshop sessions and seminars.

The MF 5709 working with the MFFD4-28 5 furrow disc plough in Winterton, South Africa.

This first-of-its-kind showcase event took place at the AGCO Future Farm in Lusaka. The occasion also saw the official opening ceremony of AGCO's state-of-the-art training facilities at the farm attended by Given Lubinda, Zambia's Honourable Minister of Agriculture and Livestock, Dr Rob Smith, AGCO senior VP and general manager EAME and Nuradin Osman, AGCO director of operations Africa and Middle East.

"As AGCO's global brand, Massey Ferguson is spearheading the company's strategy to transform African agriculture through inclusive and sustainable mechanisation," said Dr Rob Smith. "Vision of the Future will have broad appeal and plenty to interest farmers across the spectrum of agri-enterprises – from progressive emerging and smallholder operations through to established farmers and larger agricultural business including contractors and fleet owners."

Visitors to Vision of the Future were able to drive the latest range of Massey Ferguson machines, gain an insight into product engineering and connected technological services, spend time with field service teams and technicians on how to get the best from machinery and have conversations with key players who are shaping the future of the agricultural sector. In addition, visitors had the opportunity to interact personally with Massey Ferguson design engineers and share their own vision and ideas for future tractors through a Virtual Reality engineering experience.

New Bobcat backhoe loader range for Middle East and Africa

BOBCAT HAS LAUNCHED a new range of backhoe loaders for sale in markets in the Middle East and Africa. Comprising four models – the B700, B730, B750 and B780 – the new Bobcat backhoe loader range offers a choice of different specifications for diverse applications including landscaping and agriculture.

All four models are powered by the highly efficient Perkins 1104C-44T 4.4 l engine with direct fuel injection and a best-in-class output of 74.5 kW of power at 2,200 RPM and maximum torque of 408 Nm at 1,350 RPM, providing more than enough muscle for the most demanding applications while delivering low operating costs due to low fuel/oil consumption. The Perkins engine features a high-quality filtration system for longer life, and its single-side service components mean that maintenance and daily checks are as easy to carry out as they are on the rest of the machine.

Case IH training camp in South Africa

OVER 100 SALESPEOPLE took part in a two-week Case IH training camp in South Africa.

The commercial training camp provided extensive first-hand information on the Case IH product range and its advantages, and included competitive comparisons. The training focused on products and sales features specific to the respective markets and their customers. Highlighted products were, among others, the Axial-Flow 140 and 240 series, the Magnum and Magnum Rowtrac, Puma, Ecolo Tiger and True Tandem Turbo.

"The training offered our dealers and their salespeople an excellent opportunity to experience in depth the Case IH product range and the power of the brand in the field," explained Gavin Enright, commercial training manager for Europe, Middle East & Africa.

The practical training took place on the 13,000 ha Cairo farm, belonging to a Case IH subdealer of Northmec (South Africa's dealer) who is also an important customer in the region.

"This kind of training gives salesmen and all the people involved a very good and fresh look at the newest improvements on the products as well as their advantages, but I would say that the product that stood out above all was the new Magnum Rowtrac equipped with the CVT transmission. We also appreciated the hands on comparison between Case IH and other products on the market," said Jaap Van der Westhuizen, principal dealer of the Cairo Group.

Jacques Coetzee, product manager Case IH at Northmec, the main dealer in South Africa, said: "The Case IH brand is a competitive brand worldwide. Our brand is diversified in all fields and can compete in every way. We have a complete product offering and can assure farmers that we have everything to meet their expectations and needs."

The two-week training camp was rounded off with a customer day event with more than 400 visitors from Africa and the Middle East attending.

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