November - December 2018

THE LEADING FLORICULTURAL JOURNAL IN THE REGION

FLORICULTURE

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Growers' Lamentations: Misery and Desolation on Taxes and Inputs

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Contributions to Floriculture are welcome. Although every effort will be made to return manuscripts and photographs, these are submitted at owners' risk. Opinion expressed by contributors are not necessarily the views of Floriculture.

 Floriculture is published six times a year and circulated to personnel in the Horticulture Industry, foreign missions and Kenyan Embassies abroad, Flower Growers, Exporters and Consumers, extension officers in the Ministry of Agriculture and counties, research offices and suppliers of agricultural inputs in Kenya.

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Editorial

We need Swift, New and Bold Action

In the recent past, investment levels in the flower sector have fallen, economic confidence is very low and the sector risks falling into its lowest. These are not inevitable failings.

They are consequences of missteps in our policy interventions, weaknesses in collective decision-making and poor execution of policies and strategies, combined with the damaging effects of state capture and corruption on economic performance. They are a consequence also of a global economy that has not properly recovered from the financial crisis of 2008 and in which demand, particularly for flowers, has been weak.

While the challenges sector is currently facing are rooted in the general country economy, we must acknowledge that our ability to overcome these challenges has been undermined over the last few years by a failure of leadership and misguided priorities.

This is a reality that we need to acknowledge and correct. This is a pivotal moment which presents both grave threats and significant opportunities. We must act now – boldly, decisively and collectively – to change the trajectory of our economy and our country.

There is a need for a decisive new approach. It must be concretised in an action plan – concrete delivery, firm commitments, definite timelines and a new and spirited urgency.

We have seen the Zeal with which the president has taken over corruption. We saw him address electricity costs. But this is not enough. These victories have opened up a new terrain of struggle; a front as full of possibilities for swift and decisive advances as it is laden with the chances of reversals."

This is why we need to do something new, something bold, geared to accelerating radical economic transformation.

Masila Kanyingi.

FLORINEWS

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Floriculture Team

Bigo

NEW
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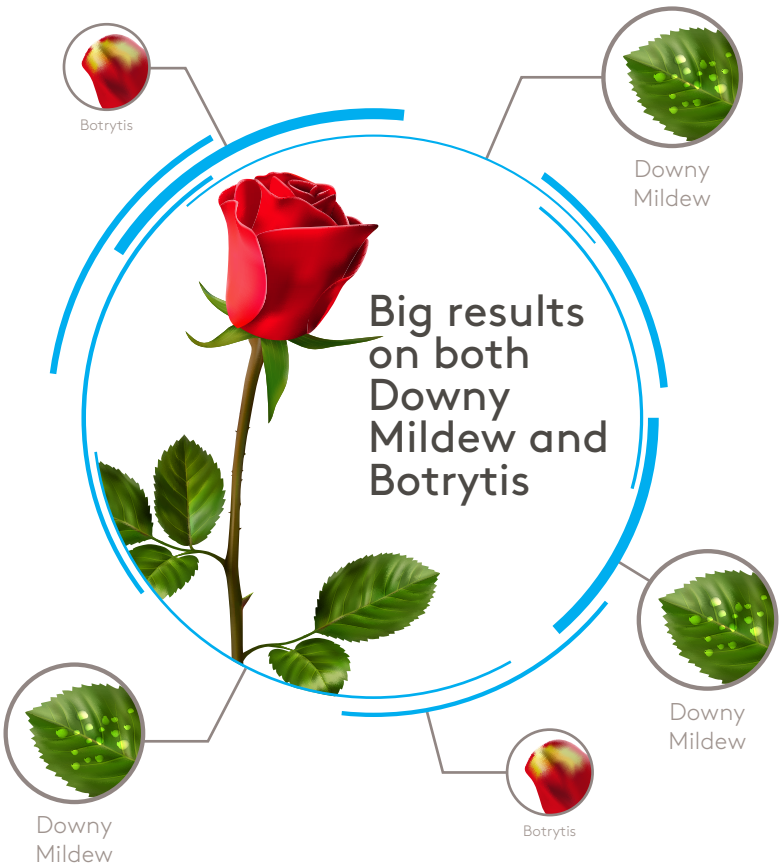
Order from Amiran
today!

A new fungicide from ADAMA which is a combination of two molecules with 2 modes of action



- Higher efficacy
- Fewer sprays
- Flexibility in timing of application
- A powerful tool to counter resistance development

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Sivanto Prime: The Latest Insecticide From Bayer CropScience

By Anthony Songoro

What is Sivanto Prime?

Sivanto Prime is the latest insecticide from Bayer Crop Science for the control of important sucking insects that fits perfectly in sustainable growing systems. Sivanto Prime protects your crop against a wide range of insects, such as whiteflies, aphids, and thrips and is effective against both nymphs / larvae and adult stages. Sivanto Prime has a fast activity and is absorbed by the leaf, after which the active substance moves in the direction of the juice flow. Also key, the mode of action of the active substance flupyradifurone, makes Sivanto Prime an asset in resistance management strategies

What is the mechanism of action of Sivanto Prime?

Sivanto Prime works in the central nervous system of the insect as an agonist of the nicotinic acetylcholine receptor (nAChR) of the insect. The active substance flupyradifurone mimics the natural neurotransmitter. The long-lasting effect of the product results in a disorder of the nervous system of the insect,and subsequent death.

What makes Sivanto Prime unique?

Sivanto Prime has a very fast effective control against sucking insects and a favorable profile. Sivanto Prime gives effective vector control through fast activity and feeding ceasation in insects.

How is Sivanto Prime classified in the IRAC mode of action group?

The Insecticide Resistance Action Committee (IRAC) has classified Sivanto Prime, (flupyradifurone), in the new subgroup 4D - Butenolides, a new subgroup of Group 4, which includes all insecticidal agonists of the nicotinic acetylcholine receptor (nAChR).

What innovation characterizes Sivanto Prime's formulation concept?

SIVANTO® Prime has a unique formulation concept based on a specially tailored emulsifier system that has never been used by Bayer before. The formulation is easy to use and store thanks to improved cold stability and offers fast solubility and good mixability in the spray tank. The advanced retention properties result in good coverage and improved leaf penetration to ensure rapid action of the active substance.

What are the core benefits and properties of Sivanto Prime?

The new butenolide chemistry makes Sivanto Prime a systemic insecticide that can be used to control a wide range of sucking insects, such as aphids, whiteflies, thrips and other important pests. Sivanto Prime fits perfectly in an integrated cultivation and is safe for honeybees and bumblebees (when used according to label). Sivanto Prime is also safe for most beneficial insects.

Does Sivanto Prime fit within an integrated system?

Sivanto Prime is the ideal product within an integrated cultivation system due to the minimal risks to beneficial insects, such as ladybugs, parasitic wasps and predatory mites.

How fast is the initial effect of Sivanto Prime?

A leaf application with Sivanto Prime ensures a rapid reduction of the sucking of the insects, after which the secretion of honeydew strongly decreases. After a few hours the first dead insects are visible and the maximum killing is reached within two hours.

What is meant by the systemic and translaminar effect of Sivanto Prime?

Sivanto prime is taken up into leaves and stems after spray application and via roots if applied to soil or alternative substrate After uptake into plant system, Sivanto prime is translocated acropetally in the xylem, in direction of transpiration stream and moves translaminar to the underside of the leaf. Due to the systemic properties, the active substance is redistributed quickly and evenly over the entire leaf, so that hidden insects are controlled.

Is Sivanto Prime effective against various stages of the plague?

Sivanto Prime addresses both the larvae / nymph stages and adult stages.

What is recommended for active resistance management with Sivanto Prime?

Sivanto Prime is an insecticide from the completely new chemical subgroup 4D: butenolides. Sivanto Prime differs in structure from all other insecticides (such as neonicotinoids = CNI, pyrethroids, and organophosphates).

In order to prevent resistance, it is necessary to alternate between the different chemical groups. An alternation between the various subgroups reduces the risk of cross-resistance.

The writer is the head of customer marketing, Bayer CropScience

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- broad & reliable insect control
- fast activity leading to quick feeding cessation
- flexible application timing
- favorable safety profile

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Robert Godec
US to Facilitate Export Growth

On October 19, the U.S. Food and Drug Administration (FDA) issued two draft guidance documents to help farmers and fresh-cut produce processors better understand what they need to do to meet requirements established by the FDA Food Safety Modernization Act (FSMA).

The first draft guidance is a compliance and implementation guide to assist growers with meeting the requirements of the Produce Safety Rule under FSMA. To further assist farmers and other stakeholders, FDA has also published At-A-Glance overviews that highlight the key points in each chapter in the draft guidance.

The second draft guidance issued today, Guide to Minimize Food Safety Hazards of Fresh-cut Produce, explains the FDA's current thinking on how fresh-cut produce processors, such as those that prepare bagged salad mixes and fruit salad, may comply with the requirements found in the Preventive Controls for Human Food Rule under FSMA.

Both draft guidance documents will be open for public comment for 180 days. The FDA has also committed to holding four public meetings around the country at which the agency will have an opportunity to engage with stakeholders on the Produce Safety Rule draft guidance. The dates and locations of these meetings will be announced soon via a notice in the Federal Register.

Direct flights to facilitate increased AGOA exports to the U.S.
The USAID Hub sponsored the U.S-Africa Trade Promotion Event organized by the Export Promotion Council in Nairobi to mark the launch of direct flights between Nairobi and New York and raise awareness of business opportunities in the U.S. for Kenyan exporters that will result from improvements in trade logistics.

"We are committed to grow our investments and trade between Kenya and the USA. The Kenya Airways direct flight is one such example. Kenyan businesses need to innovate and dare to be great," said U.S Ambassador to Kenya Robert Godec.
The direct flights will enable greater exchanges between Kenya and U.S. by removing two barriers that have hindered Kenya's competitiveness in the U.S. market: high cargo freight costs and extended delivery times. This will facilitate trade and investment and bring people, businesses and governments closer together for deeper relations and shared benefits.

In 2017, Kenya and the U.S. traded over $1 billion in goods, making Kenya the largest U.S. trading partner in East Africa. The top U.S. imports were woven apparel and knit apparel, both of which gained significant competitive advantages through the African Growth and Opportunity Act (AGOA). In fact, over 70 percent of Kenyan exports to the U.S. entered under AGOA. The direct flights are expected to create opportunities for several sectors, including those highlighted in Kenya's National AGOA Strategy and Action Plan, 2018-2023, which aims to double the value of Kenyan exports to the U.S. by 2023.

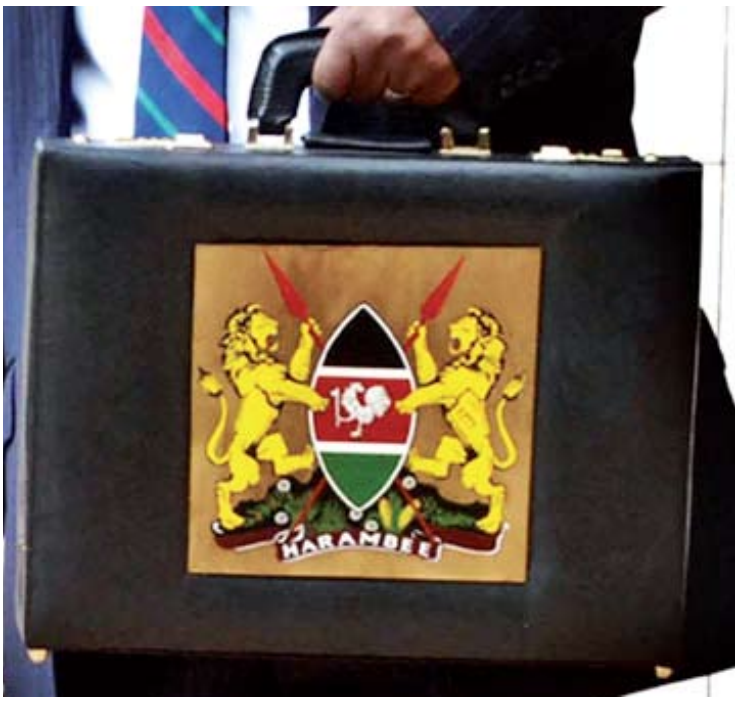
"We need to realize that we have a huge market opportunity in the USA. Let's work to meet the requirements of this market. Knowledge and compliance are paramount," said Export Promotion Council Chairman, Jas Bedi.

The USAID Hub supports Kenyan firms to access the U.S. market, especially though AGOA. The Hub provides firm-level technical assistance to help firms meet U.S. market requirements, such as Worldwide Responsible Accredited Production (WRAP) and Hazard Analysis Critical Control Point (HACCP) certification, and facilitates linkages with U.S. businesses through trade shows and buyer missions. The Hub also produced an AGOA 101 Guide that provides a step-by-step process on how to leverage AGOA's duty-free access to the U.S.

"The U.S. market and AGOA provide good opportunities to attract investors to strengthen market linkages, transfer technology and provide capital and know-how to Kenya," said Kenya Private Sector Alliance Chief Executive Officer Carole Kariuki.

"We need to realize that we have a huge market opportunity in the USA. Let's work to meet the requirements of this market. Knowledge and compliance are paramount."

VAT Slowly Eroding Flower Growers Competitiveness



For the longest time ever, VAT refunds from Kenya Revenue Authority (KRA) have been a thorn in the fresh to the Kenyan exporters.

Over the last one decade, there have been relentless cries from exporters about the amount of money held by the government in form of vat refunds. But nowhere else is the cry louder than the Kenya flower industry with over one billion shillings being outstanding at anyone given time.

To spur growth of the exporting sectors, the government zero rated exports of products and services as an incentive. But in a country that saw its economy almost ruined by the infamous golden berg scandal, the government instituted stringent measures to that verify exports took place. Before the launch of i-tax platform by KRA, the process was manual, lengthy and costly as exporters had to employ at least 1 clerk to follow up the paper trail. Further, delay in making entries by the customs meant lengthy wait by exporters for all the documents to be in order.

Although things have since improved since i-tax came in place, operational challenges still exist. However, a recent development in verification of exports has unsettled exporters. KRA has issued letters to exporters demanding for proof of specific exports some of which can only be obtained in the importing jurisdictions. The letter gives exporters a thirty day notice to produce this evidence, failure to which the exports will be treated as local sales, meaning they will attract 16% VAT. This if further complicated by the different trading arrangements between buyers and sellers which range from local consolidation, direct sales, auction etc. The situation has been worsened by the recent imposition of 16% VAT on agricultural inputs such as chemicals and the 8% vat on fuel which means high VAT refund claims.

To be fair to KRA, they have always treated the flower industry as low risk given that close to 99% of flowers is exported. Further, KRA customs has always facilitated an expedited pre-export clearance as flowers being perishables, they cannot wait for the lengthy documentation process to be completed. But KRA customs continues to face challenges of staff shortage at the JKIA customs sheds leading to delayed entrance of data in the samba system and issuance of the all vital Certificate of Export which is the ultimate document required to clear VAT refunds.

A critical success factor of any business is a healthy cash flow and with the vital VAT refunds slowing down, exporters face cash flow challenges and increased cost of doing business as a result of short term borrowing to address this. This coupled with other challenges such as the ongoing fertilizer shortage means falling competitiveness of Kenya's flowers and stifled growth and expansion of the industry.

All is not doom as our source at KRA's domestic tax department indicates that there is a proposal to have tax credits such the vat refunds, applied to tax liabilities across all tax heads. This means, for instance, once a refund claim has been approved, it can be used to offset other tax liabilities, e.g. corporate tax. The proposal is expected to be incorporated in the next budget cycle.

Delays at Port Spark Fears of Price Increase and Fertiliser Shortage

The government has directed that fertiliser imports be expeditiously inspected at the port of Mombasa to alleviate shortage that has seen an increase in prices of the crucial farm input.

Public Service Deputy Head and Multi-Agency Taskforce on Enforcement of Standards Chairman Wanyama Musiambo, said every tested consignment that meets Kenya Bureau of Standards (KEBS) requirements be released forthwith.

Mr. Musiambo also directed the Kenya Flower Council (KFC) to immediately inform his office of any unnecessary delays to facilitate decisive action against officials frustrating the government's efforts to rid Kenya of counterfeit and substandard goods.

In an interview, KFC chief executive Mr. Clement Tulezi decried continued delay in releasing approved consignments that were incurring hefty storage charges.

"We are the third highest foreign earner after tea and tourism as well as employs the highest number of Kenyans at over 300,000. Denying us access to imported fertiliser is akin to stifling our continued growth," he said.

Mr. Tulezi, accompanied by KFC members Mr. Patrick Mbugua (Wildfire Flowers), Tom Ochieng (Penta Flowers), Agricultural Employers Association (AEA) director Biraj Williams and AEA Chief executive

Wesley Siele met Mr. Musiambo where they expressed their displeasure at the ongoing re-inspection.

"We are doing everything possible to support our members in unlocking the situation as soon as possible to avert total collapse of the industry," said KFC chief executive mr. Clement Tulezi.

KFC said it appreciate the controls Kebs is putting in place to ensure quality and conformity to standards, but the process should be quick and facilitative to the industry.

"Flower farmers and other bulk importers of fertiliser are being made to pay twice for inspection since Kebs requires each consignment to be inspection at the country of origin by Kebs-appointed inspectors before it is shipped to Kenya," he observed.

Mr Tulezi said flower firms were facing a bleak future since storage, re-inspection and increased transportation charges risked making Kenya's retail prices at the global market uncompetitive.

Mr Wanyama directed that fertilisers that marginally fail the test be re-examined within the shortest time possible and flower council be provided with daily updates on goings on at Mombasa port.

Wanyama said inefficiencies within essential government institutions, including KEBS had necessitated the scrutiny adding that some regulatory institutions were 'nonetheless' over-reacting.

Price Increase

In recent months, fertiliser prices have increased by 21.6 per cent following the shortage blamed on stringent vetting of imports and clearance delays at Mombasa Port.

Speaking to *Floriculture*, flower grower and exporter Oserian Development Company raised alarm over the shortage.

Oserian said the delays are grinding company's operations to a near halt with devastating effects.

"The flower industry has this year already been hit by bad weather, pest and disease pressure, high cost of production as a result of increased fuel cost and fluctuating markets. This bottleneck within our borders will only make things worse," said Mary Kinyua, director of human resources and administration at Oserian.

Initially KEBS certified the quality of fertilisers in the country of origin before shipment and the re-inspection of all consignments at the port of entry as it pursues to tame proliferation of counterfeits is causing delays.

The new clearing process is now taking up to two months before the release of consignments.

Ms Kinyua said fertiliser suppliers are incurring up to Sh2 million daily in demurrage which they are passing to them, further pushing the cost of producing flowers up.

Oserian is predicting a dip in yields and increase in flower prices, which it said will be the case among other growers as they seek to compensate their margins, making the country's flowers expensive at the global market.

Kenya Flower Council (KFC) chief executive Clement Tulezi said importers are charging Sh65,000 a tonne compared to the usual Sh25,000 before the government started pre-inspection last June.

"The situation is fast getting out of hand since Kenya lacks the capacity to test for the nitrate-based fertilisers. This has seen all nitrate-based consignments fail the re-examination test and have been held at Mombasa port awaiting resolution of the problem," he said.

Risk Competitiveness

Kitale flower and fruits farmer Bob Anderson said the delay had adversely affected commercial operations, with port and storage demurrage charges as well as the newly introduced 20 per cent tax on demurrage charges being heaped on fertiliser importers.

"The government's move to block entry of fertiliser is a disincentive that has reversed gains made in Kenya's third highest foreign exchange earner. Our farmers must increase their retail prices further, making Kenya's produce unaffordable," said the KFC boss.

Mr Tulezi said Kenya's 40 per cent competitive edge in the global flower market risked being wiped away by bureaucratic processes at the port that hampered smooth flow of fertiliser through the port for onward transportation to the farms.

"Kenya is also tarnishing its reputation as a fertiliser business partner since no importer pays for their consignment upon arrival as it was before but have to wait for re-testing and pay upon clearance. This means future direct exports of fertiliser from manufacturers to Kenya could be minimal making the commodity expensive," said Mr. Tulezi.

Every Flower Counts With Solvit

Syngenta EA Ltd has continued to deliver successful new product launches, this time Solvit, a new innovative fungicide against powdery mildew and rust diseases in ornamental crops. Five Successful launch activities were held in Nairobi, Naivasha, Nakuru, Eldoret and Nanyuki. During the Solvit launch in Nairobi, Professor Eunice Mutitu, a well renowned plant pathologist from the University of Nairobi, Department of Plant Science and Crop Protection, took the opportunity to congratulate Syngenta on this important milestone of providing an innovative solution against powdery mildew and rust diseases in ornamentals that will significantly improve both quality and quantity of production. Similar sentiments were also expressed by the Chairman of the Kenya Flower council, Mr. Clement Tulezi, who graced the occasion in Naivasha as the chief guest. Mr Tulezi thanked Syngenta for closely collaborating with various stakeholders in the flower industry to bring to market solutions that meet the needs of growers and the European export markets.

Giving an elaborate presentation during the launch of Solvit in both Nairobi and Naivasha, Dr. Maina Muiru, a Senior lecturer in the Department of Plant Science and Crop Protection from the University of Nairobi, explained the economic importance of both powdery mildew and rust diseases in ornamental crops including the disease symptoms, aetiology, epidemiology and management. “One of the most important constraints in rose production is powdery mildew. Additionally, due to quarantine restrictions, carnation rust is an economically important disease in carnations as eradication efforts can be costly and can cause significant losses in production ”, Dr. Muiru explained to the growers and other stakeholders who were keenly listening to his presentation. He further continued, “Powdery mildew has a worldwide distribution and the economic impact is due to reduced flower production and the aesthetic value that is seen in fewer flowers of poorer quality. Therefore, for effective disease management, knowledge of the biology, ecology and epidemiology of the pathogen as well as the host characteristics and those of the pathosystem are very critical to understand”.

Distribution of Powdery Mildew in the World.

Powdery mildew of Roses is caused by Podosphaera pannosa previously Sphaerotheca pannosa. Disease symptoms include;

- Infected areas gets covered with a greyish white powdery fungal growth
- On older leaves- large white patches appear that eventually may become necrotic
- White patches also appear on young green shoots and may coalesce covering entire growing shoots
- Sometimes buds get attacked and become covered with white mildew.

Symptoms of Powdery Mildew at Various Stages of Infection

Carnation rust causes discoloration and interferes with photosynthesis resulting to suppressed growth. Disease symptoms include:

- Light coloured lesions on leaves spreading to stems and sepals as disease severity increases.
- Pustules can be up to 10 cm in length and occur on stems, leaves and calyx
- Pustules can be up to 10 cm in length and occur on stems, leaves and calyx
- Pustules can be up to 10 cm in length and occur on stems, leaves and calyx

Symptoms of Rust on Carnations

Mr. Ruud Roeven, EAME Technical Service Manager at Syngenta, explained the features and benefits of Solvit. In his remarks, he likened Solvit to a “rock” that is always steady no matter the weather, for the effective control of powdery mildew & rust diseases in roses and carnations. Solvit is registered in several countries including The Netherlands, Colombia, Ecuador, Italy and Kenya.

Solvit is an Emulsion Oil in Water formulation containing 125 g/l fenpropidin and 50 g/l penconazole. Fenpropidin is a member of the piperidine group of fungicides (FRAC code 5) and Penconazole belongs to the triazole group of fungicides (FARC code 3). The two active ingredients in Solvit® both inhibit sterol biosynthesis but at different sites. The interference with the ergosterol products results in disruption of mycelial growth and fungal development on the plant surface and within the plant. Leaf penetration and plant tissue infection are reduced and haustoria formation is inhibited, which interrupts the disease cycle. Fenpropidin and Penconazole have a high translaminar activity and are absorbed rapidly by the leaves and green parts of the plants. Inside the plant, Fenpropidin and Penconazole are translocated acropetally (upwards within the xylem) resulting in a good distribution within the leaf and other treated plant parts. It results in faster, more effective and longer-lasting control of powdery mildew and rust.

Ms. Margaret Njambi, Technical manager for Syngenta L&G in East Africa, shared results from trials conducted in Kenya on over 60 rose varieties and other ornamental varieties in collaboration with more than 50 growers across the different flower growing regions. Solvit proved to be fast acting within 48 hours, more effective against powdery mildew and rust diseases on Ornamental Plants with a longer lasting effect for two – three weeks. Solvit is safe to a wide range of beneficial insects and predatory mites. Ms. Njambi reiterated that fungicides should be applied during the early stages of disease development as part of good disease management practices. A maximum of three successive sprays of Solvit should be applied at approximately 5-7 days interval during prolonged or severe attacks. Mr. Victor Juma, the L&G business Manager for Syngenta EA, further added that securing a clean crop during peak and high disease pressure periods should be a target for all growers in order to improve farm productivity and profits.

Mr. Lars Gruchel, Commercial Head for Syngenta L&G Controls CE/EE/East Africa, reminded growers the leading role that Kenya and Ethiopia plays in the global ornamental industry and assured the various stakeholders on Syngenta’s commitment to the floriculture industry through investments in research and development to ensure that growers have the right tools to address the challenges of production.

ADAMA Brings Israel Superior Technology to Kenyan Market

Bigo 1 Product 2 Modes of Action on Both Downy Mildew and Botrytis

Bigo is a combination of two different molecules Fluazinam and Dimethomorph which have translaminar and contact activity against Downy Mildew and Botrytis. Combining these two molecules with two different modes of action enables Bigo to target two diseases at once.

Thus, the uniqueness of Bigo is that addition to its high efficacy on Downy mildew, it is a good choice to control Botrytis as it kills any botrytis spores on the rose stems or heads simultaneously.

"ADAMA is a part of the second green revolution in Kenya," says Mr Ido Rahat Product Strategy Manager. The world leader in crop protection solutions, founded over 70 years ago with roots in Israel has partnered with Amiran Kenya Ltd in Kenya and has successfully improved the lives of many farmers with its innovative, farmer-centric products.

What sets ADAMA apart?

Mr Ido Rahat Product Strategy Manager says "ADAMA is the unique and successful partnership of Kenya and Israel. We bring the superior agriculture technology of Israel and adapt it to the Kenyan market using local expertise. Our goal is to help farmers with modern technologies that enable them to reap the most benefits from their fields and crops. All our products are created by first identifying the farmer need, finding a solution for it using the R&D expertise, and finally delivering a product that is tailor-made for the local market."

Launch of Bigo

Mr Ido Rahat said this while addressing flower growers in Naivasha during the launch of Bigo, one product with two modes of action on both downy mildew and botrytis. Mr. Ido said Bigo is a combination of two different molecules Fluazinam and Dimethomorph which have translaminar and contact activity against Downy Mildew and Botrytis. Combining these two molecules with two different modes of action enables Bigo to target two diseases at once. Thus, the uniqueness of Bigo is that addition to its high efficacy on Downy mildew, it is a good choice to control Botrytis as it kills any botrytis spores o the rose stems or heads simultaneously.

Benefits for the Grower	
• Excellent Downey mildew control with additional control of botrytis	- Higher yields - Higher quality
• Combination of two leading fungicides with two different modes of action	- Higher efficacy - Fewer sprays
• Safe to beneficial and non-target species	- Minimal effect on the environment
• SC (Liquid) formulation	- Safe and easy to use formulation
• Two modes of action	- Fast acting and long lasting - A powerful tool to counter resistance development

"We are now in the middle of the second green revolution", says Ido. "In the first green revolution*, the aim was to provide food security under any cost, but now the aim is to minimise the number of molecules and conquer food safety and security. ADAMA joins the combined industry efforts towards bringing about the second green revolution in Kenya, which seeks to create sustainable agriculture and provide diversified, safe food to a growing population, in a challenging environment with changing climatic conditions."

Growers Reaction

Those interviewed by this *Magazine* were full of praise for the product. Downy Mildew is a notorious disease and more solutions are expected. With the launch of Bigo, which has two molecules, we have an additional option in our spray programs but minimal molecules to the crop.

Why ADAMA

ADAMA is a leader in providing unique and differentiated crop-protection solutions to Kenya. In ornamentals and horticulture alone, the company has unique products for Kenyan farmers.

ADAMA in Kenya has a team of dynamic executives under Mr. Robert Wachira, with vast experience in the agrochemical sector. The company brings the superior agricultural technology of Israel to farmers of Kenya. The mission of the company is to create simplicity in agriculture, and the company has made significant strides in bringing comprehensive crop protection solutions to the Kenyan farmers. ADAMA offers the broadest portfolio of products among all multinationals in Kenya, with many products tailor-made specifically for the Kenyan agricultural landscape. The company's wide range of herbicides, insecticides and fungicides offer protection across many vital crops for Kenyan farmers.

USAID Hub Signs Grant With Kenya Flower Council **To Increase Floriculture Exports to the U.S.**

On September 19, the USAID Hub signed a grant with Kenya Flower Council with the goal of increasing Kenya's share of the U.S. market for cut flowers by December 2019. The Hub and Kenya Flower Council will work together to raise cut flower exports by boosting the visibility of Kenyan flowers in the U.S. market through targeted product promotion activities and by building the capacity of exporters to meet U.S. packaging and market entry requirements.

"Kenya is the largest floriculture exporter to Europe and the world's third largest exporter of flowers and foliage. Kenyan entrepreneurs are now ready to enter the U.S. market and the USAID Hub will enable them to achieve this goal," said the Hub's Chief of Party, Juan Estrada-Valle.

Cut flower exports have made the flower sector one of Kenya's leading export exchange earners. The industry's role in the national economy was recognized in the recently launched National African Growth and Opportunity Act (AGOA) Strategy, 2018-2023, where it was identified as a priority sector in the country's effort to double exports to the U.S. through AGOA's duty-free access to the U.S. market.

"The signing of this grant provides an opportunity for Kenyan exporters to have a footprint into the U.S. with a good understanding of the market structure and requirements. We are certain that Kenyan flowers can complement what already exists through increased promotion and taking advantage of the recently launched AGOA strategy," said Kenya Flower Council Chief Executive Officer, Clement Tulezi.

The timing of this grant is significant. Direct flights between Nairobi and New York will begin this October, improving exporters' competitiveness with reduced transit times. It also follows the recent establishment of the U.S.-Kenya Trade and Investment Working Group, which will explore ways to deepen trade ties between the two countries. The successful implementation of grant activities will therefore contribute to the commitment to improve trade relations made by President Trump and President Kenyatta during their meeting in August at the White House and Kenya's National AGOA Strategy's implementation.

Pictures Speak

Mr. Victor Juma - L&G Business Manager East Africa, Syngenta

Mr Clement Tulezi - CEO Kenya Flower Council

Ms. Margaret Njambi - Technical Manager East Africa, L&G Syngenta

Solvit Launch Moment

Mr Lars Gruchel - Commercial Head L&G Controls CEEEEast Africa Syngenta

Mr. Ruud Roeven - Technical Service Manager, EAME Syngenta

Solvit Bottles with Mr Lars (Syngenta) and Mr Clement Tulezi (KFC)

Dr. Maina Muiru (Mr.) - Senior Lecturer, Department of Plant Science and Crop Protection UON

Boma Inn Nairobi Crowd

Growers Reaction

Simba Lodge Naivasha Crowd

The Logistical Dance that Gets

All those Flowers to Market in Europe...and Elsewhere

Under Threat from the Internet

According to its just-released annual report, Royal FloraHolland's 2017 annual turnover increased 1.2% to EUR4.7b or US$5.7b based on sales of 11.7 billion units, which declined 1.8% from 2016. The decline in flower and plants unit sales is due to the rise in exports from Kenya, Columbia, Ecuador and Ethiopia, all close to the equator where growers have natural light all year round, reducing the need for artificial illumination. This is why trade typically moves south to north to the major U.S. and European markets from South America and Africa, respectively.

According to the 2016 Rabobank World Floriculture Report, the Netherlands is no longer the largest global exporter of cut flowers with 43% market share, with the four equator-based countries now making up 44% of exports. Their success is remarkable considering they have little domestic demand for their product, have limited air freight capacity, are exposed to volatile exchange rates, high transportation costs and an ever-changing geopolitical environment.

Royal FloraHolland began operation as a grower-owned cooperative more than 125 years ago (companies must be in business for 100 years to use the term royal) by dragging wooden boats on canals to showcase their flowers to prospective buyers. Today, they are being disrupted by the internet. As part of their digital strategy to become the world's leading digital floriculture marketplace, Royal FloraHolland launched a digital supply platform called Floriday to integrate multiple third-party vendor platforms used by growers and members. In 2017 they also assumed majority control of FloraXchange, a large digital trading platform to strengthen their global competitiveness.

The bulk of their competition comes from mass-market retailers including Wal-Mart, Tesco and Aldi, who rather than trade on the volatility of flower spot prices via the auctions in Holland instead lock in growers to long-term fixed price contacts. In 2017, the company observed a shift from regular auction sales to direct sales between their growers and clients. Auction sales represented 44% of turnover while direct sales increased 6 percentage points to 56% of total revenues.

Kenya's Blockchain Powered Supply Chain

Guided by Royal FloraHolland's former CEO Lucas Vos who joined the company from Maersk in 2014, the company began a project involving Kenyan rose growers, IBM, Maersk and the Dutch government to improve efficiencies in the cut flower business and create the industry's most highly developed supply chain. Today, Kenya has the largest international air cargo hub in Africa and has become the leading producer of roses for the European market, exporting 67% of tonnage to The Netherlands. In the process they have more than doubled Kenya's global market share from 5% to 11% in the last decade.

In one study, IBM and Maersk followed a refrigerated shipping container filled with roses from Kenya

to The Netherlands. They found that almost 30 people and organizations were involved in processing the container on its 34-day journey, resulting in 200 different communications and interactions between supply chain participants, resulting in 80 well-defined bottlenecks in the supply chain. Considering paperwork and established export/import processes are so vital to global trade, they are fast becoming one of its biggest impediments.

The solution was to create an electronic shipping platform by digitizing all documents using blockchain technology, with the aim of increasing transparency and security among all trading partners, reducing fraud and errors, and most importantly, decreasing time product is spent in transit. To compete in global markets, Kenyan growers put roses to sleep at zero degrees centigrade and keep them dormant for up to 3 weeks during the shipment to The Netherlands. This makes blockchain a vital component in speeding up the maritime supply chain and maintaining the competitiveness of South American and African exporters in the global cut flower market.

Notwithstanding the costs of keeping flowers cool, local growers in Holland will also delay shipping flowers to market by putting them to sleep so they can take advantage of favorable spot prices. In the flower spot market, prices are highest when weather is coldest and prices lowest when it's hottest. The only exceptions are major seasonal events such as Mother's Day, major religious events and certain public holidays when demand and prices are always high.

According to a global trade study by the World Economic Forum, the benefits of blockchain, an electronic ledger system that automatically verifies communications and customs border administration by replacing EDI and paper-based systems, can realize an additional US$1 trillion in global trade. According to IBM, Maersk already has entered close to 20% of its global containerized volume on to ledgers built on IBM's Hyperledger blockchain platform, providing growers, shipping lines, freight forwarders, port and terminal operators, shippers and customs authorities access to the blockchain platform via a dashboard.

Tradition Meets Disruption

Flowers remain a luxury item. Even though it's still a European tradition to buy flowers at the end of the work week--so the kitchen table has flowers over the weekend--flowers have become a cultural symbol of positivity: they make us feel good, especially roses. Of the 12 billion items sold at Royal FloraHolland in 2017, roses were the dominant cut flower with 3.3 billion (28%) involving over 1,000 different rose types (species, length and color) exported globally.

As the traditional Dutch Auction clock is challenged by online buyers and mass-market farm to shop retailers, another trend is emerging. Millennials are buying more and more plants and flowers, and they're doing it in a way they are most familiar with: the click of a mouse.

While Royal FloraHolland's CEO Steven van Schilfgaarde "remains committed to reinforcing the clock and its power", it's clear that digital platforms and blockchain technologies will enable more streamlined farm-to-ship supply chains in the future.

Online floriculture sales driven by millennials are expected to jump by 500% in the next 10 years according to one Rabobank study. A highly efficient high-speed supply chain using blockchain technology supported by reliable IT systems and data analytics will bring about more change in the next ten years than the traditional flower growers have seen in the last 125 years.

Do Mergers Save or Cost Consumers?

For the last one year, we have seen several mergers and acquisition especially in the agrochemical sector. Different reasons have been given in each merger or acquisition. Our *Business Correspondent* spoke with an *Investment Expert* and filed the below article.

Overall, as long as competition isn't completely eliminated, mergers can make firms more efficient, and this can work to the benefit of underlying customers. In the industries cited above, fears abound that they have consolidated too much, but competition continually springs up to keep the larger firms honest.

Q: What is the difference between mergers and acquisitions?

A: Mergers and acquisitions are two of the most misunderstood words in the business world. Both terms are used in reference to the joining of two companies, but there are key differences involved in when to use them.

A merger occurs when two separate entities combine forces to create a new, joint organization. Meanwhile, an acquisition refers to the takeover of one entity by another. Mergers and acquisitions may be completed to expand a company's reach or gain market share in an attempt to create shareholder value.

Mergers Vs. Acquisitions

In an acquisition, a new company does not emerge. Instead, the smaller company is often consumed and ceases to exist with its assets becoming part of the larger company. Acquisitions – sometimes called takeovers – generally carry a more negative connotation than mergers. Due to this reason, many acquiring companies refer to an acquisition as a merger even when it is clearly not.

Legally speaking, a merger requires two companies to consolidate into a new entity with a new ownership and management structure (ostensibly with members of each firm). An acquisition takes place when one company takes over all of the operational management decisions of another. The more common distinction to differentiating a deal is whether the purchase is friendly (merger) or hostile (acquisition).

In practice, friendly mergers of equals do not take place very frequently. It's uncommon that two companies would benefit from combining forces with two different CEOs agreeing to give up some authority to realize those benefits. When this does happen, the stocks of both companies are surrendered and new stocks are issued under the name of the new business identity.

Both mergers and acquisitions have pros and cons. Mergers require no cash to complete but dilute each company's individual power. Acquisitions require large amounts of cash, but the buyer's power is absolute.

Since mergers are so uncommon and takeovers are viewed in a negative light, the two terms have become increasingly blended and used in conjunction with one another. Contemporary corporate restructurings are usually referred to as merger and acquisition (M&A) transactions rather than simply a merger or acquisition. The practical differences between the two terms are slowly being eroded by the new definition of M&A deals.

Q: Why do companies merge with or acquire other companies?

A: Mergers and acquisitions (M&A) refers to the consolidation of companies or assets. M&A can include a number of different transactions, such as mergers, acquisitions, consolidations, tender offers, purchase of assets and management acquisitions.

Some of the reasons why companies merge with or acquire other companies include:

1. Synergy: The most used word in M&A is synergy, which is the idea that by combining business activities, performance will increase and costs will decrease. Essentially, a business will attempt to merge with another business that has complementary strengths and weaknesses.

2. Diversification / Sharpening Business Focus: These two conflicting goals have been used to describe thousands of M&A transactions. A company that merges to diversify may acquire another company in a seemingly unrelated industry in order to reduce the impact of a particular industry's performance on its profitability. Companies seeking to sharpen focus often merge with companies that have deeper market penetration in a key area of operations.

3. Growth: Mergers can give the acquiring company an opportunity to grow market share without having to really earn it by doing the work themselves - instead, they buy a competitor's business for a price. Usually, these are called horizontal mergers. For example, a crop protection company may choose to buy out a smaller competing company, enabling the smaller company have more products and sell more to its brand-loyal customers.

4. Increase Supply-Chain Pricing Power: By buying out one of its suppliers or one of the distributors, a business can eliminate a level of costs. If a company buys out one of its suppliers, it is able to save on the margins that the supplier was previously adding to its costs; this is known as a vertical merger. If a company buys out a distributor, it may be able to ship its products at a lower cost.

5. Eliminate Competition: Many M&A deals allow the acquirer to eliminate future competition and gain a larger market share in its product's market. The downside of this is that a large premium is usually required to convince the target company's shareholders to accept the offer. It is not uncommon for the acquiring company's shareholders to sell their shares and push the price lower in response to the company paying too much for the target company.

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The Importance of Keeping Flowers Cold

In the floral industry, there's increasing recognition of the importance of cold temperatures — and providing cold temperatures for every flower from the point of harvest to the point of sale. (One notable exception to this rule: tropical flowers.) And, just for clarity, "cold" means 34 F to 36 F.

Why is the cold so important?

Low temperatures extend vase life and optimize the performance of cut flowers. Moreover, cold temperatures are easily managed by adjusting the thermostat and monitoring the temperature in the cooler.

Sounds simple enough, right? In theory, yes, but in reality, and for various reasons, it is not unusual to observe flower shop coolers at 42 F to 45 F. Those higher temperatures reduce flower life, which can lead to disappointed customers.

Cold storage temperatures lower the respiration rate and allow sugars to be conserved.

Why does cold temperature have such a big influence on the performance of flowers?

Three factors help explain the science.

Respiration

Flowers use stored sugar and starch to maintain the structure and function of cells in the flowers, leaves and stems. Sugars provide the energy for flowers to open and to extend flower life. Without sugar, cells starve, blooms fail to open, and death occurs prematurely. Cold storage temperatures lower the respiration rate and allow sugars to be conserved. See the graph for an illustration of how rapidly consumption of sugars and starch increase as temperatures rise. Flower foods provide sugar to supplement the stored sugars used by the flower during storage, shipping and handling.

Ethylene

Ethylene kills flowers. At cold storage and shipping temperatures, however, flowers are less sensitive to atmospheric ethylene and do not produce as much ethylene internally. In fact, flowers are 1,000 times more sensitive to ethylene at 65 F than they are at 35 F.

Diseases and microbial activity

The spread of diseases such as botrytis on flower petals and growth of microbes in bucket and vase solutions are reduced significantly at cold temperatures. Botrytis spores grow and destroy flowers rapidly at warm temperatures. These spores are not killed by cold temperatures, but the spread of the disease is much slower. Microbes block the flow of water up the stem. Microbes present in bucket and vase solutions grow much faster in warmer water.

Realizing how cold temperatures affect respiration, ethylene and disease makes it possible to extend the life of flowers. But temperature is only one of the key factors in flower life. Equal priority needs to be placed on the other factors affecting the absorption of water, particularly scrupulous sanitation, ethylene management and the use of properly prepared hydration and flower food solutions.

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The Floral Challenge In an e-commerce Era

Flowers are the perfect gift for someone close to the heart but geographically distant, i.e. theoretically an ideal e-commerce market.

However, they are also a delicate and perishable commodity, typically requiring hydration during transportation and lasting only four or five days in conventional packaging.

Flexible packaging specialist Uflex gained much attention with the recent release of its Flexfresh solution, which promises waterless transportation with significantly extended product life. Siva Shankaran (VP, Flexfresh) discusses the contexts .

“Internationally, all flowers are transported using expensive air freight from growing region to the markets,” observes Mr Shankaran. “The typical supply chain is grower – auction house – wholesaler – retailer / florist – and finally the consumer. Thanks to e-commerce platforms it’s now possible to connect the growers directly to the consumers. Our concept was to to ship flowers in post parcels without any water. This eliminated the possibility of cross contamination with other courier goods.”

Flexfresh, developed by Uflex, comprises a proprietary polymeric formula that is claimed to prolong the shelf life of flowers. It utilises Active Modified Atmospheric Packaging (AMAP), working in conjunction with the Fast Respiration Meter and Laser Perforation system supplied by Netherlands-based Perfotec B.V. While the respiration meter ascertains the respiration rate of the flowers, the laser system uses this information to adapt the permeability of the polymeric film with the help of perforation matrix.

“Flowers are put into slow respiration mode by reducing the oxygen availability, preventing excess oxidation and dehydration.”

This solution makes it possible to hold flowers intact between 10-15 days as per supply chain requirements: twice or three times the usual shelf-life.

This enables florists and retailers to plan and store large inventory for festive rush. The packaging can also be industrially composted within 180 days.

“The substrate is the first biodegradable film that maintains the hydration of flowers during transpiration (evaporation causing loss of moisture during respiration) thus creating a closed loop system,” says Mr Shankaran. “Flowers are put into slow respiration mode by reducing the oxygen availability, preventing excess oxidation and dehydration. The film keeps the flowers breathing in hydrated oxygen and releases excess humidity keeping them touch dry. The flowers thus can go without water for a significant number of days as the humidity is fed back in to them as they continue to breathe in the modified atmosphere.”

These extended capabilities open up new and more sustainable ways of selling flowers.“We are visualising an in-store display without water and web shops that can offer preformed flower bouquets by post parcel without having to worry about poor quality on arrival,” Mr Shankaran continues.

“Flexfresh eliminates the use of millions of gallons of water from the flower supply chain currently used thereby making it one of the most sustainable packaging solutions. Solutions entailing e-commerce packaging are proving to be as challenging today as were our first efforts around defining the sustainable packaging at the turn of this century.

Just as we learned then that there is no such thing as ‘the most sustainable package’, we are learning today that there are many areas of focus that can lead to a more efficient, cost-effective and environmentally responsible e-commerce packaging solutions perfectly echoing the ethos of a brand that consumers rightly expect. While designing waterless internet flower packaging this was the axiom that we adhered to. Another of the significant savings that accrues is the fact that nearly 2.7 times more material can be carried per truck, since water is completely eliminated if the transportation is done from grower to retailer using sea freight.”

Mr. Kennedy Onyango

Bridges the Gap Between Supplier and Grower

What is your personal back ground?

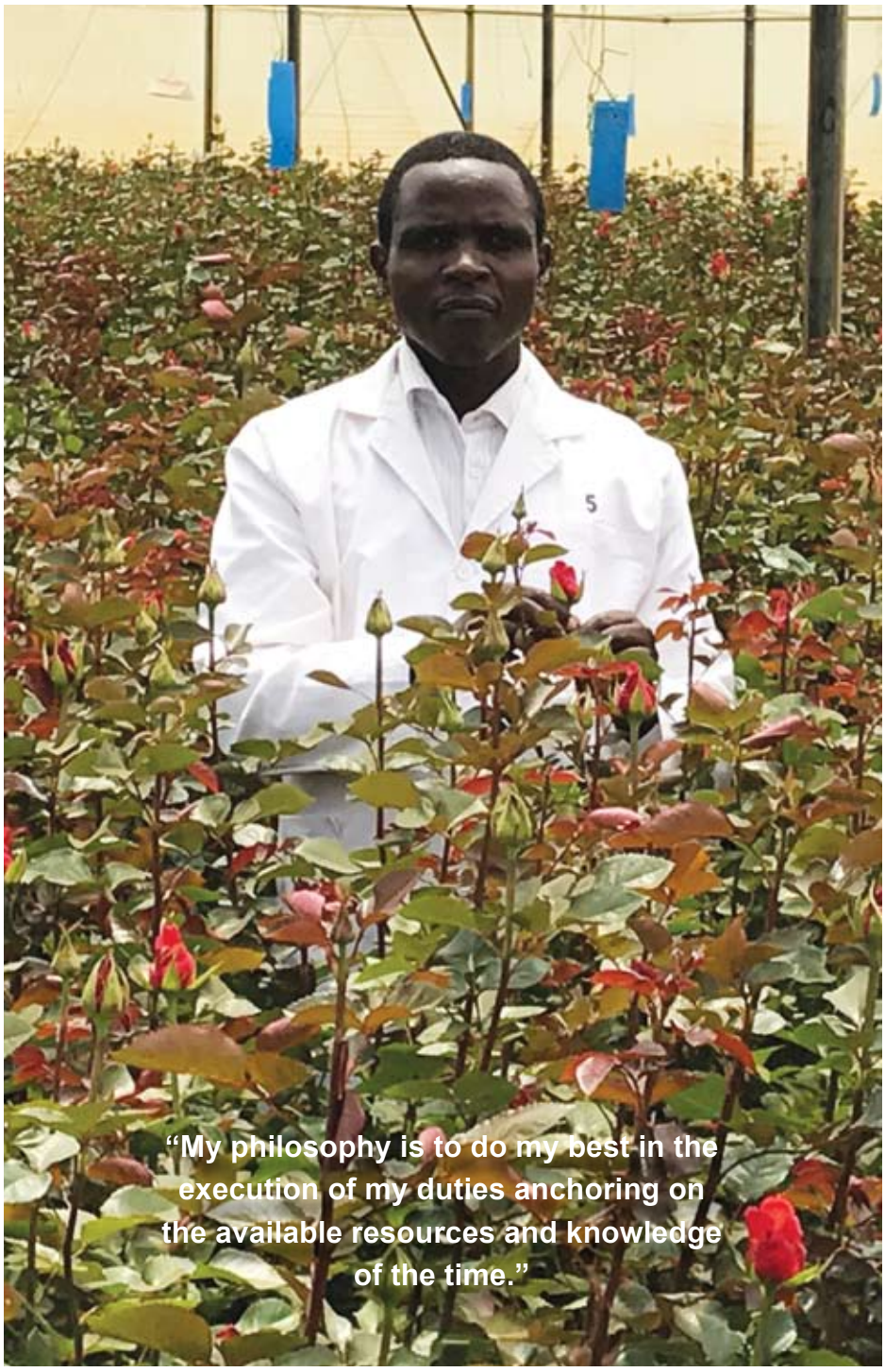
I am an agronomist and marketer with diverse experience in the agriculture sector. Originating from the cotton and sugar belts of Nyanza and raised up in the green highlands of Kericho, I graduated with BSc. Agriculture from the University of Nairobi in 1998 and a holder of MBA (strategy and marketing majors) from the same university as well. Professionally I am member of the British Professional register-BASIS and a holder of internal Diploma in Ground Application technology (KAHA field and Research station, Egypt).

After undergraduate training I joined Brooke Bond as a tea propagator and later as a Team leader in their field operations in Jamji and Kimari respectively. In the year 2001 I joined Finlay flowers where I worked till joining Syngenta in 2007.

On the family front I am happily married and a proud father of two daughters.

Why did you choose to be an agronomist?

It's a long story. I used to admire how Brooke Bond Tea Company was professionally managing the tea bushes and cinchona trees plantation. One day in 1994 I found myself in Upper Kabete



"My philosophy is to do my best in the execution of my duties anchoring on the available resources and knowledge of the time."

campus studying Bachelor of Science in Agriculture and from then I developed interest in plant physiology. In fact, my favourite read to date has been Plant Physiology by Salisburry and Ross.

How long have you been working with flower growers?

I have been in the agriculture sector for the last 19 years basically working with multinationals: Brooke Bond (now Unilever Tea Kenya Ltd), James Finlays Kenya and now Syngenta Kenya as a Key Accounts Manager for Lawn and Garden business unit. Out of the 19 years only three years were outside the floriculture sector.

Briefly discuss the challenges you go through daily? What would you point out as your strongest attribute that has made you succeed?

Challenges are unique with every job. Clients' needs vary from region to region and from farm to farm. My job is to add value and see my clients being successful in their businesses and therefore it's upon me to be up to date with current information and technology that offers the best solutions to the grower not only in the field of pests management but to the business process as a whole. Knowledge and clients engagement are paramount for success in this field. The urge to get things done, the desire to learn and the push to leave a positive memorable legacy not only in the professional life but as well as in my social life keep me going. Having done everything else I call upon the Supreme God for guidance and help. Philippians 4:13, "I can do all things through Christ who gives me Strength" is a special encouragement to me.

In your experience, discuss some of the challenges flower growers are facing?

The business environment is dynamic. From the first cut flower export in the early '80s to the current dispensation, flower firms are faced with business cycles which are very dynamic. Emerging and new markets with stringent regulations, Forex fluctuations leading to forex loses and higher input cost, flower auction price unpredictability, multiple taxations at county and central government levels, new emerging pests and adverse weather conditions are a challenges facing growers in the face of increased competition mainly from South America countries. To sum it up the business environment and rising production costs is a concern for many growers. Going forward flower firms need to embrace efficiency, lean operations, waste and waste reduction to operate profitably. An all-inclusive approach, like the KAIZEN can create a positive attitude amongst the employees and in the long-term lead to business sustainability.

How do you rise up to the greatest challenge that your job presents?

Motivation to serve and offer growers sustainable solutions keeps me going. I would like to leave a positive impact to the industry and to the people I interact with. I do read and consult a lot to equip myself with solutions for the client. Like in any other job there is pressure and one need to be resilient and patient to succeed.

Point out the solutions Syngenta EA Ltd has for the flower sector?

Syngenta is a R&D company and a brand with the growers. Sustainability is core with all Syngenta solutions and with well trained and competent staff, Syngenta is out to assist growers bring crop potential to life. Syngenta offers solutions for all pests and diseases affecting the flower industry in particular and farming in general. Nematicides, Miticides, Insecticides and Fungicides that have passed the test of time are all in our portfolio. Ridomil, Folio gold and Revus are household names when it comes to downy mildew management. New products introductions of Tervigo, Hicure, Arima and more recently Solvit offer growers value for money and greater returns on investment. It also has to be noted that Syngenta has taken a leading role in shaping the biostimulant segment by educating growers on different types of biostimulants and their role in crop stress management and yield improvement.

"My job is to add value and see my clients being successful in their businesses and therefore it's upon me to be up to date with current information and technology that offers the best solutions to the grower not only in the field of pests management but to the business process as whole."

Every professional grower should watch out for the upcoming new products from Syngenta.

A part from pests' solutions, Syngenta through its competent staff offers growers tailor made technical trainings on pest and disease management as well as on safe, efficient and effective use of pesticide to ensure worker safety and production sustainability.

What is the role of the agrochemical sector to the development of the flower Sector?

Agrochemical firms and the ornamental growers complement each other in business. The growth of either has a positive impact on the other and vice versa. For example, as R&D agrochemical firms invest in new sustainable solutions for the benefit of the cut-flower firms to improve their productivity and income. The agrochemical sector play important role in providing solutions for flower growing, trainings to the farm workers to better understand usage of production inputs and how to use them safely and sustainably. The sector is also involved in CSRs activities geared towards conservation of the environment and water catchment areas. Rhino Charge is one such completion geared towards protecting the Aberdare water tower.

How do you see Syngenta EA Ltd contributing to the future of the flower sector?

Continuous investment in Research and Development of new, noble and sustainable solutions that encompass a wholesome approach to cut-flowers production. Staff empowerment through trainings is also an area Syngenta has heavily invested in.

Growing up, who was your inspiration?

My parents. They worked hard to ensure we had the best in life.

What decisions have you made in your career that looking back you feel were mistakes and you learned from them?

I know people make decisions which may at times not lead to the best of outcomes and its part of learning and growth.
My philosophy is to do my best in the execution of my duties anchoring on the available resources and knowledge of the time. Having said this I don't remember any one outstanding decision that I may regret.

Describe your ordinary day? Do you have enough personal time?

We all have 24 hours a day. The employer legally takes 8 hours and the remaining 16 hours is "personal time". Safe for Sunday and Saturdays, my day usually begins at 4am and I surrender to bed at around mid-night most of the times. I start with having quiet time with God in the morning and also the last thing in the night. In between there is strategizing, planning, reviewing and executing the daily objectives. My job involves lot of travelling meeting clients and therefore I also set some time just to rest.

What legacy do you want to leave behind in the flower sector?

I would like to be remembered a long side the veterans who did wonderful job in developing the sector in early years. I want to be a role model to the upcoming agronomists. A brand that growers can identify with and consult at any time, in any situation.

Give your final comments

The flower industry plays a noble role in creating productive employment and private sector development which at the end of the day generates income and improve lives. There is need therefore for the sector and industry players to match available resources with the dynamism in the environment to overcome the constraints of production and marketing.

With world population projected to reach 9.8 billion people and the changing lifestyle amongst the younger generations, I strongly believe there is a brighter future in this sector.

What is needed is to be diligent and focused on our roles.

Thank you.

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Why Integrated Pest Management is Due For a Reset

While the ideal of integrated pest management has been pursued and adopted in a variety of settings since the mid-20th century, recent trends point to perhaps too great a focus on killing pests rather than managing host stress. In a new paper in American Entomologist, three experts suggest a modified focus that better accounts for evolution and tolerance to pest injury and shifts from control toward management.

By Robert K.D. Peterson

Whatever happened to integrated pest management?
If you're a regular reader of Entomology Today, you might think "Why, I didn't know anything had happened to it." So, why is anyone even asking this question?

It's true that integrated pest management (IPM) is a term well known. It is used liberally by scientists and other practitioners without the need for definition, and it is a major success story for society. But it can also be argued that IPM has, in fact, lost its way.

There has been little formal discussion of IPM theory and its status over at least the past 10 years, even though in that time we have seen both the overwhelmingly successful adoption of prophylactic pest control tactics in the form of transgenic crops and seed treatments and the increasing application of evolutionary biology in environmental and public health management.

The time has come to revisit the foundations of IPM and look deeply at its conceptual aspects and future development. To that end, in a forum paper in the latest issue of American Entomologist, my colleagues Leon G. Higley and Larry P. Pedigo and I present our case for a conscious evolution of integrated pest management. The article is provocative and therefore it is meant to generate further discussion in the entomological profession, and we hope you'll read it, but here I'll share a brief synopsis of our specific recommendations:

Initiating new dialogue and research on the central tenets of IPM, especially evolution.

Evolution holds a central place in pest management, yet its role in IPM has received relatively little attention. This is ironic because a chief impetus for the development of the integrated control concept in the mid-20th century was the reality—indeed, inevitability—of arthropod resistance to insecticides.

Managing pest resistance to tactics that impose strong selection pressures necessitates the need for applications of evolutionary biology, such as reducing phenotype–environment mismatches (i.e., when a population's phenotypic trait distribution differs from the environmental optimum) and incorporating combinatorial approaches to sustain management of pests. We argue that IPM has a clear role to play here, provided that it is firmly connected to ecology and evolution.

> *"In our context, a host is the receptor of a pest's activity or injury, so it can include plants or animals, including humans."*

Replacing control with management.
If we are to more formally and more completely incorporate evolutionary considerations into IPM, the emphasis needs to shift broadly and resolutely from killing pests to managing host stress, where possible. Control implies a heavy-handed program focused on the pests themselves, whereas management encompasses reducing host injury to tolerable levels in addition to modification of pest populations.

Thus, we propose an updated definition of pest management: "a comprehensive approach to managing host stress that is economically and ecologically sustainable." This is similar to past definitions but additionally benefits from a focus on the concept of managing host stress as a way to incorporate evolution more formally in IPM. In our context, a host is the receptor of a pest's activity or injury, so it can include plants or animals, including humans.

Initiating host breeding programs specifically to breed for tolerance to pest injury.
We need to systematically incorporate tolerance of pest injury into pest management programs. Tolerance, whether as a type of resistance or as an important concept of economic injury levels, ameliorates selection for pest resistance to tactics. We acknowledge, however, that breeding plants to be tolerant to pests is much easier said than done.

Emphasizing how to use tactics and de-emphasize the focus on tactics themselves.
We need to continue to move more pointedly from an emphasis on tactics to an emphasis on how to use tactics, which has direct implications for selection pressure and therefore for sustainable pest management. This focus has been largely overshadowed by the discovery of tactics and what we call the "have-technology-will-use" syndrome. Instead, by focusing on how to use tactics, we can ensure that we are incorporating evolutionary considerations into IPM. Current approaches to resistance management for antibiotic drug use in public health, for example, as well as for Bt crops in agriculture, have relevance for IPM.

Recommitting to and updating Kogan's levels of IPM adoption.
In 1998, Marcos Kogan argued for three levels of IPM implementation as a way to encourage progression along increasing ecological, socioeconomic, and agricultural scales and complexity. We recommend that this scheme be used to reinvigorate IPM but also revised to incorporate our recommendations, such as by substituting "management" for "control" and added additional agricultural, socioeconomic, and ecological scales, among other changes.

We conclude the paper with a call to action: Our suggestions require a commitment to thinking about—and acting on—pests as part of the management of a system, with the host being central to that system. This is in contrast to the more common approach of focusing on the pest as the entity to be controlled. Although it comes with numerous additional challenges, we should be adaptively managing agroecosystems, urban ecosystems, and natural ecosystems, not attempting to control one or a few organisms within these systems.

Table 1. Attributes of the three levels of IPM integration as modified from Kogan (1998).

Attributes	IPM Level		
	I	II	III
Agricultural scales	• Host, field	• Host/crop community	• Agroecosystem, regional production system
Socioeconomic scales	• Individual, household	• Farm, neighborhood	• Village, co-op, county/province
Ecological scales	• Individual, population	• Community	• Ecosystem, landscape, biosphere
Focus of IPM level	• Management strategies for single species or species complexes	• Multiple pest interactions and management strategies	• Management of pests and host stress within and across production systems
IPM strategies	• Pest sampling • Economic thresholds • Preventive and curative management tactics • Tolerance of pest injury • Emphasis on how to use tactics • Evolutionary considerations	• Habitat management • Host-pest models	• Ecosystem- and landscape-level processes and models

Sensors Help Firms Get Crucial Data Real-Time.

ViPiMo has made it so easy to screen the operations because now you can have a dashboard of everything that has happened all over. It means you can troubleshoot whenever there are issues much faster and it is easy to remedy.

Ideal temperature is crucial for optimum growth of commercial flowers. This can be a tedious process if one is dealing with huge flower farms. Most farms used to monitor the flowers' temperature manually, going into each greenhouse with a thermometer. This took a lot of effort and time.

However, technology has radically changed this process, reducing it to an armchair affair. Today, most farm managers keep tabs of a graph from their offices which give them an updated temperature and humidity every 10 minutes. The technology in question is referred to as VipiMo, a Kiswahili word for measurement. Thanks to Upande Ltd.

Ideal day temperatures should not go below 23 degrees Celsius and night temperatures not below 13 degrees celsius. Ideal humidity is between 60 and 80 per cent.

The two environmental factors are inversely related and are crucial for the health and wield of the flowers produced. The physical system is made up of a thumb-sized sensor and a pager-sized signal receiver in the field as well as a small router in the office.

The gadget is set up to trigger and point that the temperatures are too high and it is too far from the night to benefit from the natural cooling effects, the alarm goes on and workers on duty can reverse the effect.

Apart from temperature, the sensors measure water pressure, as well as water volume and energy flow depending on a clients' interests. The ViPiMo solution has received praise and financial support from the Netherlands Embassy, the UK Department for International Development (DfID) and GSMA.

Upande has been investing in finding Internet of Things (IoT) solutions for nearly half a decade. Their customers include water companies, flower farms, and logistics companies at the airport.

The logistics firm uses the system to track flowers exported to Europe.

For water, ViPiMo sensors help them reduce the losses of water through leakage and theft as well as commercial losses due to wrong readings caused by collusions between meter readers and customers. "Our calculations in one water company revealed that in a year they are losing 50 to 70 per cent if you take into account what they produced, what they charge and what got lost," says Luchiri Omoto, a consultant at Upande in charge of the ViPiMo product.

"The sensors measure volume, pressure and water level in tanks and are placed on the entire network and companies can tell if what they produced is what they billed and if not they can pinpoint where losses came from," he adds.

For water companies, ViPiMo has allowed them to monitor outlets across on a dashboard from within the comfort of their offices. ViPiMo sensors monitor the volumes flowing through – how much it is and at what time it flowed through. It is about keeping track of all that.

The devices are at each point of the network. Through graphs on the ViPiMo platform, water companies can see what is happening in the field as their teams get water from boreholes, clean it through a purification plant, transports it, deposit it in storage tanks at the different outlets and finally dispenses it through a vending unit from the tanks.

"You will get to know when there are leaks and also account better for what volumes have gone through the system at every stage. It is easy now to audit the system you also get alerts on your phone when there is an extraordinary event in the system, for instance, when the water in a storage tank is too low.

In the past, water companies would have to send members of their team to physically check the water at each section using analogue meters. The reading could be unreliable. You send people to collect the data and that takes time. By the time you analyse the data a lot of time has passed, so you can't really tell what the problem is.

ViPiMo has made it so easy to screen the operations because now you can have a dashboard of everything that has happened all over. It means you can troubleshoot whenever there are issues much faster and it is easy to remedy.

Some of their customers include Magana flowers and pure fresh, a water company based in Naivasha.

Magana Flowers would also like the ViPiMo system to activate automatic solutions when the environmental factors are not ideal. At the moment, available Internet of Things (IoT) solutions for automatic responses are too expensive for local companie.

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Three Strategies Companies are Using

To Tackle Produce Waste in the Supply Chain

You've probably heard the widely-quoted factoid that the majority of food waste happens in the home. From grocery over-purchasing to over-zealous expiration dates to just plain forgetting to cook that cabbage you bought, it's not exactly a surprise that the kitchen is where a lot of needless wastage takes place.

So where does the rest of our food waste occur? According to the Food and Agriculture Organization, when it comes to fresh produce (the most wasted foods, at least in industrialized countries), almost 1/3 happens along the supply chain. From lack of coordination and communication to inconsistent quality standardization, there are plenty of things that need to go right to get fresh food from A to B without it spoiling — and that doesn't always happen.

However, there are a few tools and strategies that companies are using to try and reduce food waste at various points along the supply chain. Here are three to watch:

Blockchain

Unless you've been living under a rock, you've heard of blockchain. (Actually, they might have subterranean blockchain by now, too.) But you might not know that quite a few companies are leveraging blockchain to fight food waste along the supply chain — or are at least thinking about it.

Companies can use blockchain to create a platform from which retailers can sell nearly-expired food to local restaurants or consumers. In addition they can forge a "Blockchain for Food," creating transparency at each step of the food system.

Blockchain fights supply chain food waste in a few ways: it helps companies keep track of all the touch points their product has passed through, from farm to shipping truck to retail shelf or restaurant cooler. So if a consumer gets sick from contaminated spinach, suppliers can track exactly which shipment of spinach from which farm caused the problem and dispose of it — without throwing away every bag and bunch in the store. It can also help restaurants and grocery stores track how much food they throw out, so they can adjust their order accordingly.

I don't want to blow things out of proportion: it's still early days for blockchain. And even if the public ledger software works exactly as it's supposed to, it still places a lot of trust and power in each of the players that interact with a tomato as it passes from the farm to the

"From lack of coordination and communication to inconsistent quality standardization, there are plenty of things that need to go right to get fresh food from A to B without it spoiling and that doesn't always happen."

grocery store. But it's definitely a tool worth exploring.

Hands On

Some companies are tackling food waste along the supply chain by turning to the food itself. Some create non-toxic protective barriers for fruits and vegetables, made out of crops left behind in farm fields. With the coating, produce can stay fresh for nearly twice as long — which means less spoilage en route to retailers. This tech is already being tested on avocados, and it is expected to see it grow to more locations and perishables soon.

Other Companies make sheets which absorb ethylene, the hormone which makes fruit and vegetables rot. The sheets can be cut to fit produce-packed palettes or small containers on grocery shelves. This can extend produce life by 1-4 days in the home, and 1-4 weeks in transit. They're working to integrate their technology into the film around the produce itself, so they can reduce packaging waste as well as food spoilage.

AI & Machine Learning

Artificial intelligence (AI) has been playing a growing a role in the food system, from robotic food delivery vehicles to dairy farming. (If you're curious about how AI is affecting food startups, check out our podcast The Spoon: Automat.)

> Companies can use blockchain to create a platform from which retailers can sell nearly-expired food to local restaurants or consumers."

So it's no surprise that companies are leveraging AI to reduce waste along the food supply chain. Some harness computer vision and machine learning to standardize produce quality ratings. By taking objective human ratings out of the equation, vendors and buyers don't waste time or valuable produce over quality disputes, which can lead to canceled orders and unintended food waste.

In the same vein, Isome use a combination of AI and computer vision to generate produce ratings. Their goal is more to help farmers get a fair price for their crops, but the outcome is the same; clear, objective quality assessment for fruit and veg means less bickering, fewer dissatisfied customers, and less overall wastage.

Eden technology harness machine learning to quantify freshness, so it can divert soon-to-expire produce to nearby stores and make sure it gets eaten before it's past its prime.

—

None of these technologies is a cure-all in and of itself. And when it comes to food waste along the supply chain, we definitely still have a long way to go. But these three areas are definitely ones to keep an eye on — and, when combined, can hopefully reduce the amount of produce destined for the landfill.

The Impact of Sustainable Packaging on the Floral Industry

Fresh flowers need the best in packaging solutions to make sure they arrive at their destination in peak condition and our innovative packaging solutions deliver just that. For the export market, packaging is especially designed to provide the required amount of water resistance, strength and insulation to meet the physical requirements of your supply chain, whether you are shipping your flowers by road or by air.

Sustainable packaging is no longer a term for the future. It's the current state of corporate responsibility and package designs. You can view the concept as an excellent investment not only for the environmental benefits but also as a powerful tool to improve your clients' sentiment towards your brand.

What is sustainable packaging?

The concept of sustainable packaging includes a wide range of environmentally friendly practices, designs and materials that integrates the entire supply chain. The objective is to improve the longevity and quality of our environment by decreasing pollution caused by plastics and other non-degradable materials.

Sustainability across the supply chain

When it comes to sustainability in packaging, we are not only referring to the packaging product but also encompassing the entire supply chain. By sourcing non-toxic materials and implementing clean and eco-friendly production methods, you can significantly decrease the energy consumption levels involved in the manufacturing process. You will also benefit from the cheapest energy contract and outperform your competitors by far.

Through the implementation of eco-friendly packaging solutions, you will streamline the processing procedures and lower the material costs and labor required. By switching to eco-friendly packaging solutions you will develop a cost-effective business model based on lower energy consumption, decreased labour force and less expensive packaging materials.

Impact of sustainable packaging in the flora industry

Today's consumers are becoming more aware of the negative impact of plastic and non-degradable packaging materials. But, if you're in the floral industry, there's another factor you should consider, namely the increased growth of the e-commerce sector.

Because flowers are perishable products and require specific hydration and temperature during transportation, you should use the correct packaging solutions. By using conventional packaging, your perishable commodities can only last up to 5 days during transportation, which would limit your market reach. However, companies are developing various parcels and packages using non-toxic and eco-friendly materials including polymeric formulas to not only extend shelf life but also eliminate any risks of cross-contamination.

The first layer contains biodegradable film which maintains the flowers hydration levels using their evaporated moisture. The film layer maintains the flowers breathing oxygen and absorbs excess humidity, keeping them dry. Sustainable flower packaging solutions aim to eliminate the need to use excess water during their transportation. Another advantage is that you can double the quantity of transported flowers per truck.

You can also consider using sustainable packaging for your in-shop flower displays. The flowers will have extended shelf life and will reduce your overall maintenance costs.

Conclusion

Sustainable packaging impacts each step of your supply chain and if you use the correct solutions, you can significantly decrease your business costs. Also, because of the larger consumer awareness about the negative effects of traditional packaging systems, your brand could suffer major losses if you don't make the switch soon. Your best approach is to use eco-friendly packaging solutions which will increase the life-cycle of your flowers, lower your business's operational costs and improve your brand's quality in the eyes of your clients.

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Events Calendar - 2019

January

Date	Event	Location
January 8 - 10	Landscape Ontario Congress	Toronto, Canada
January 9 - 11	MANTS 2019	Baltimore, MD, USA
January 22 - 25	IPM Essen	Essen, Germany
January 25 - 29	Floradecora	Frankfurt am Main, Germany

February

Date	Event	Location
February 6 - 8	Fruit Logistica	Berlin, Germany
February 19 - 21	HortiContact	Gorinchem, Netherlands
February 22 - 24	Int'l Flora Expo 2019	Pune, Maharashtra, India

March

Date	Event	Location
March 13- 15	Hortiflora Expo	Addis Ababa, Ethiopia
March 13 - 15	HortEx Vietnam	Saigon Exhibition and Convention Center (SECC)
March 17 - 19	China International Floriculture Trade Fair	Guangzhou International Sourcing Centre, China
March 23 - 27	California Spring Trials	California, USA

April

Date	Event	Location
April 16		
April 18	Flower Expo Ukraine	Kiev, Ukraine
April 20		
April 22	Hortiflorexpo IPM Shanghai 2019	Shanghai, China

May

Date	Event	Location
May 13 - 14	Horticulture Lighting Conference Europe Utrecht,	The Netherlands

June

Date	Event	Location
June 5 - 7	IFTEX	Nairobi, Kenya
June 11 - 13	GreenTech	Amsterdam, The Netherlands
June 11 - 14	FlowerTrials	Netherlands and Germany
June 18 - 20	International Floriculture Expo Miami	(FL), USA
June 26 - 28	Hortitec Brazil	Holambra, Brazil

July

Date	Event	Location
July 13 - 16	Cultivate'19	Columbus, Ohio, US

September

Date	Event	Location
September 4 - 7	GWA Annual Conference & Expo	Salt Lake City, UT

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How two Exhibitions Running Concurrently Are Changing Today's Market

IFTF 2018

From November 7-9, the IFTF took place in Vijfhuizen, the Netherlands. Nearly 300 companies showcased their varieties and services, attracting visitors from all over the world. Every year, the cut flower show is becoming bigger and the number of visitors is increasing. Also this year, the visitor number was about 15% higher compared to last year. And for next year further international growth is expected as a new pavilion will be added: Argentina.

Neat booths

When entering the show, one of the first things - next to the increased exhibition area - that strikes the attention are the neat stands. It seems that many exhibitors took their time and effort to pay attention to the little details and have put up a professional neat-looking stand.

Milestone

Every year, the number of visitors increases, and this year a milestone was reached. "On Thursday morning, for the first time in IFTF history, we had to open the second parking lot. This lot, just like the first parking lot, has room for 4,000 cars", says Dick van Raamsdonk of HPP Exhibitions, who organizes the show.

Largest floriculture event

All in all, Dick is very pleased with the turnout of the show. "Together with the concurrent show, the FloraHolland Trade Fair, and all the other surrounding activities, we succeed in establishing the largest event in the floriculture industry internationally."

Further growth

But further growth is still possible. "For next year, we still have enough to do. We still miss the presence of many Germans, and also not all florists have the IFTF in their agenda yet."

New pavilion

This year, the Zimbabwe and Iran pavilion were added to the exhibition, and for next year another will be present, namely Argentina.

FloraHolland Trade Fair 2018

This year's FHTF attracted more than 16,000 visitors from all over the world. Together with the IFTF in Vijfhuizen, more than 1,000 companies from Africa, South America and elsewhere exhibited at both fairs. So without exaggerating, we can say that the Netherlands played host to the lion's share of the global trade and production in plants and flowers.

New container: launching Fc588

Yme Pasma (COO) and Matthijs Mesken (Director VGB) together launched the new, efficient Fc588 flower bucket at the Aalsmeer Trade Fair. This flower bucket optimizes loading capacity, realizes annual cost savings for the chain of €10 to 15 million and ensures reduced carbon emissions.

Yme Pasma explains: "Every day, we work to improve our logistics services and increase efficiency in the chain. With this new Fc588 flower container we are responding to market needs." Matthijs Mesken adds: "In the trade, we are enthusiastic about this initiative. Since the inception of this development we have been involved together with Royal FloraHolland. Owing to the increasing use of CC containers in the export trade and the reduction in transactions, a different multi-use flower bucket is required."

Zentoo and Ovata wins Greenovation Award

Royal FloraHolland presents the Greenovation Award as recognition for sustainability initiatives in the floriculture industry. The public voted on nominations by a professional jury. Steven van Schilfgaarde (CEO) presented the award. The presentation by Steven van Schilfgaarde (CEO) took place on the second day of the Trade Fair.

Fruits, Vegetables And Herbs Conference And Exhibition 2018

Kenya has enjoyed a big market share in selling the horticultural produce both locally and internationally. Locally, with its own citizen's increased consumption being a result of improved livelihoods and change of lifestyle. In domestic markets, sales are done through supermarkets, open markets, green groceries and hawkers who vend on highways and city centers and also through retailers referred to as mama "mbogas." External markets are reached through exporters to various destinations including Europe, China, Canada the Middle East and other countries abroad.

Kenya has focused on enhancing production efficiency and diversifying to other non-traditional export markets such as the Middle East, China, Japan, Australia and New Zealand. It also sought to maintain competitive advantage by focusing on products that have higher standards, Sanitary and Phytosanitary Standards (SPS) and others, by increasing variety and product differentiation and by shipping direct to the major supermarket chains.

There has been tremendous growth in the horticultural industry which has been driven by increased demand for high quality, diversity and convenience both in the domestic and export market. Sustaining this growth for the benefit of all actors will require a major shift in the horticultural value chains to ensure efficiency and quality assurance. Of great interest is the transformation of edible horticultural produce (fruits, vegetables and herbs). This includes various forms of value addition including grading and sorting, commodity treatments, specialized packaging, minimal-processing, full-scale processing among others. Value addition pushes the actors from downstream (low-return) activities to upstream activities with better returns.

Realization of these benefits will require application of innovative technologies, practices and strategies in an enabling policy environment. It also requires strict adherence to good agricultural production and manufacturing practices that ensure high quality and safety of the value-added products.

This will require concerted efforts of all stakeholders in the horticultural value chains including farmers, traders, extension service providers, government, development partners, entrepreneurs, researchers among others. If fully exploited, agro-processing to preserve the produce and develop value-added products and services will enhance food and nutrition security, promote access to markets, and create more jobs and gainful employment especially for the youth.

The emergence of local standards – KS1758 and traceability systems such as the National Horticulture Traceability System (HTS) coupled with increased surveillance and awareness driving consumer demand for safe produce, presents producers and other value chain actors with new challenges and opportunities.

The conference aimed at bridging the market to the farmers, discussing systems and better solutions that can promote aggregation, value addition and agro -processing.

Shirish Ingale (right) - Sales Director accepts an Award at the Naivasha Horticultural Fair 2017

Customers enjoy their visit at Agrichem Africa Limited Exhibition Stand

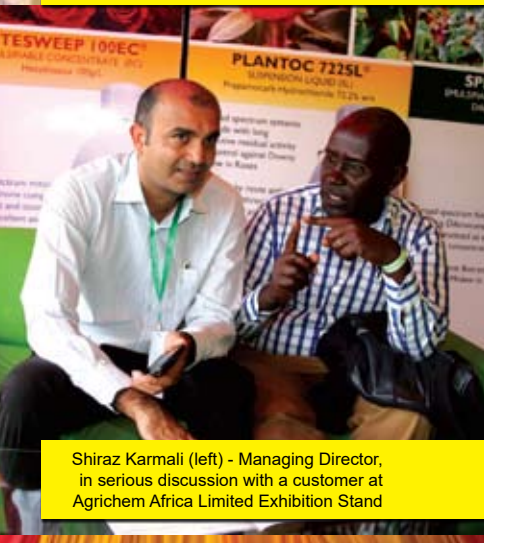
Isaac Mwangi (right) - Rift Valley Regional Manager, engaging a customer during the HortFair

Agrichem Africa Limited®

Naivasha Horticultural Fair 2017 in Pictures

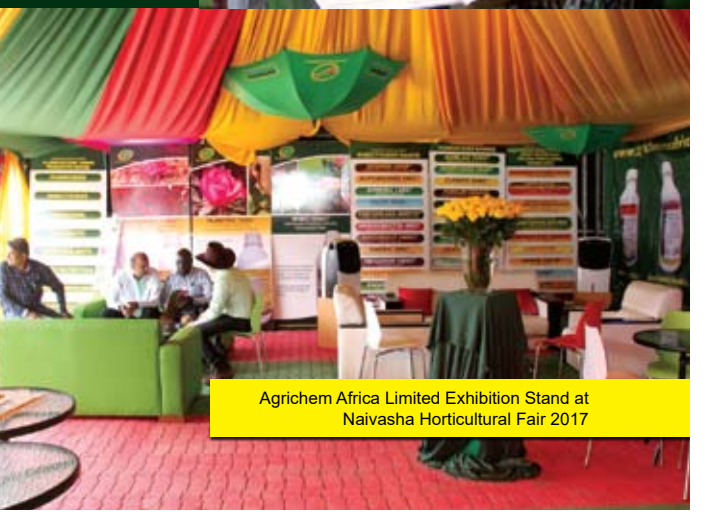
Peter Muraya (standing) - Department of Products Trials and Agronomist ,enjoys a light-moment with customers at Agrichem Africa Limited Exhibition Stand

Erick Ojode (right) - Irrigation Unit Sales Manager with our customer Alain Legot during the HortFair



Shiraz Karmali (left) - Managing Director, in serious discussion with a customer at Agrichem Africa Limited Exhibition Stand

Shiraz Karmali (second-left) - Managing Director and Shirish Ingale (third-left) - Sales Director, engaging customers at the HortFair



Agrichem Africa Limited Exhibition Stand at Naivasha Horticultural Fair 2017

One of the 16 electric trucks deployed by Oserian in Naivasha to ferry flowers on its expansive plantation in Naivasha to the packhouse. The firm imported the trucks from the Netherlands and it says this is one of its initiatives to be carbon neutral by 2020.

Flower Farm Fleet
Goes Green With Electric Cars

In summary

- Oserian deploys 16 electric cars and moves into biological pest management.

- Vehicles transport produce from the field to pack house

Away from the limelight, a flower firm in Naivasha is quietly deploying green energy solutions in its operations, including use of electric cars.

Oserian flower farm has deployed 16 electric trucks to ferry flowers on its expansive farm as it seeks to be the industry leader in the use of green technology. Sourced from Netherlands, the vehicles are charged using electricity generated from its two 3.2MW geothermal power plants.

They are helping reduce use of fossil fuel trucks to transport millions of flower stems it harvests every year from the field to its pack house, where they are wrapped before export.

"Our goal is to use natural solutions for a greener, safer environment. We have reduced the use of diesel on the farm and we are investing heavily in biological solutions to deal with pests and diseases," says Human Resources and Administration Director Mary Kinyua.

The firm says its green initiatives have seen it cut diesel usage on its premises by 80 per cent.

Biologicals

The firm is turning to biological pesticides to reduce over-reliance on chemicals harmful to the environment and workers, thereby cutting the exposure of chemicals to thousands of employees.

Julius Kigamba, a compliance officer at the firm, has deployed a full range of IPM

> "Our goal is to use natural solutions for a greener, safer environment. We have reduced the use of diesel on the farm and we are investing heavily in biological solutions to deal with pests and diseases,"

to help it exploit the benefits of using biological methods in dealing with pests.

Besides churning out quality flowers, the biological methods help reduce the need to spray the farms.

Sprayers

Oserian says workers in its spray department are routinely checked for chemical enzymes every three months. "Sprayers are rotated every six months," Ms Kinyua says while outlining a raft of other measures in place to ensure safe use and handling of chemicals.

It also said it does not use any WHO Class One rated chemicals nor does it use chemicals in any blacklist – be that Fairtrade, Global Gap, MPS, and the EU, among other bodies.

"Therefore, all pesticide usage is in accordance to applicable legislation. We routinely undertake residue test every month – an exercise undertaken by an independent entity that takes its own samples from the farm rather than receive selected material from us," it says.

Supports families

The firm said it supports over 11,000 employees and their families living in its estate – the average family size is two children.

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
AAA- Flowers-Rumuruti	Roses	Rumuruti	Shailesh	0722 203750	shailesh.rai@aaagrowers.co.ke
AAA- Flowers -Chui Farm	Roses	Timau	Shailesh	0722 203750	shailesh.rai@aaagrowers.co.ke
AAA-Hippo	Vegetables	Thika	morris Wanyoike	0723404528	morris.wanyoike@aaagrowers.co.ke
Farm-Sunripe		Naivasha	Antony	0711827785	naivasha@sunripe.co.ke
Africala	Cuttings	Eldoret	Meindert	-	meindert@africalla.com
Africa Blooms	Roses	Salagaa	Ravindra Chaudhari	0723159076	ravindra.chaudhari@xflora.net
Afriscan Kenya Ltd	Hypericum	Naivasha	Charles Mwangi	-	-
Van Kleef Kenya Ltd	Roses		Judith Zuurbier		roses@vankleef.nl
Aquila Development Co	Roses	Naivasha	Abhay Marathe	0729776656	gm@aquilaflowers.com
Balaji Flowers	Roses	Olkalou	Vijay	-	-
Baraka Farm	Roses	Ngorika	Lucy Yinda	-	lucy@barakaroses.com
Batian Flowers	Roses	Nanyuki	Dirk Looj	0720102237	dirk@batianflowers.com
Beautyline	Flowers	Naivasha	Peter Gathiaka	0722676925	peter@beautyli.com
Big Flowers	Roses	Timau	Simon Blinco	0723234927	simon@mauflora.co.ke
Bigot Flowers	Flowers	Naivasha	Kakasaheb Jagtap	0722205271	jagtap.kt@bigotflowers.co.ke
Bila Shaka Flowers	Roses	Naivasha	Joost Zuurbier	0722204489	bilashaka.flowers@zuurbier.com
Black Petals	Roses	Limuru	Nirzar Jundre	0722848560	nj@blackpetals.co.ke
Bliss Flora Ltd	Roses	Njoro	Appachu Sachin	0789101060	appachu7@yahoo.com
Blue Sky	Summer Flowers	Naivasha	Mike	0720005294	info@blueskykenya.com
Bloom Valley		Salgaa	Ramnath Sarbande	0780314387	ramnath.sarbande@xflora.net
Blooming Dale Roses Kenya Ltd	Roses	Nanyuki	Sunil	0718991182	info@bloomingdaleroses.com
Buds and Blooms	Roses	Nakuru	Shivaji Wagh	0720895911	shivaniket@yahoo.com
Carzan (K) Ltd	Summer flowers- Hypericum, Carnations	Salgaa	Mahesh		seb.chambers@carzankenya.com
Charm Flowers	Flowers	Athiriver	Ashok Patel	020 352583	ashki@charnflowers.com
Colour Crops	Hypericum	Nanyuki	Kennedy Wanyama	0716389472	colourcrops@tmu.com
Chestnut	Flowers	Mt. Kenya	Gabriel Kiai	-	gabriel.kiai@aaagrowers.co.ke
Colour crops	Summer Flowers- Hypericum, Veronica	Bahati	Patrick Kipkurui	0727806184	kipkirui89@gmail.com
Colour crops Naivasha	Flowers	Naivasha	Geoffrey Mwaura	0722200972	nva@colourcrops.com
Credible Blooms	Flowers	Rumuruti	Eliud Njenga	0722382859	eliud@pigeonblooms.com
Credible Blooms	Flowers	Ngong	Eliud Njenga	0722382859	eliud@pigeonblooms.com
Dale Flora	Roses	Mogotio	Ajay Sutar	0711102266	ajay.sutar24@gmail.com
Delemere Pivot	Vegetables	Naivasha	Daniel Ondiek	0720395963	daniel.ondiek@vegpro-group.com
Desire Flowers	Flowers	Isinya	Rajat Chaohan	0724264653	rajatchaohan@hotmail.com
De ruiters	Breeder Roses	Naivasha	Fred Okinda	0722579204	Fred.okinda@deruiter.com
Dummen Orange	Flowers Breeders	Naivasha	Steve Outram	0733 609863	s.outram@dummenorange.com
Elbur flora- kimman	Roses	Nakuru	Daniel Moge	0721734104	kimmanexp@gmail.com
Enkasiti Thika	Flowers	Thika	Tambe	0734256798	enkasiti@gmail.com
Equinox	Flowers	Nanyuki	Harry Kruger	0707266956	harry@equinoxflowers.com
Everest Flowers Ltd	Flowers	Mt. Kenya	Peter Njagi	-	-
Everflora Ltd.	Flowers	Thika	Bipin Patel	0735873798	everflora@dmblgroup.com
Evergreen Crops		Nairobi	Arun Singh	0721941009	arun@evergreencrops.com
Exotic Peninah	Roses/ Carnations	Athiriver	Dan	0734626942	dan@exoticfields.com
Fairy Flowers	Flowers	Limuru	Sylivester	0753444237	sylvesterkahoro@yahoo.com
Fides Kenya Ltd	Cuttings	Embu	Bernard Marindany	0726 366 752	B.Marindany@DummenOrange.com
Finlays -Tarakwet	Flowers	Kericho	Lelon Chepkwony		
Finlays Chemirel	Flowers	Kericho	Aggrey Simiyu	0722601639	aggrey.simiyu@finlays.co.ke
Finlays- Lemotit	Flowers	Kericho	Japheth Langat	0722 863527	japheth.langat@finlays.co.ke
Fontana Ltd-Salgaa	Roses	Salgaa	Kimani	0733605219	production@fontana.co.ke
Fontana Ltd - Akina farm	Roses	Njoro	Mahindra Patil	0798254199	--
Fontana Ltd - Ayana Farm	Roses	Mau Narok	Gideon Maina	0721 178974	gideon@fontana.co.ke
Flamingo Holdings Farm	Flowers	Naivasha	Peter Mwangi	0722204505	peter.mwangi@flamingo.net
Flamingo Holdings-Kingfisher Farm	Flowers	Naivasha	Mr. Isaac Karanja	0720473502	kingfishercarnations@flamingo.net
Flamingo Holdings- Kingfisher Farm	Flowers	Naivasha	Jacob Wanyonyi	0722773560	jacob.wanyonyi@flamingo.net
Flamingo Holdings-Siraji Farm	Carnations, Roses	Nanyuki	Peris Muturi	-	-
Flower City	Flowers	Nairobi	Pradeep Kumar	0790309600	info@flowercitykenyaltd.com
Flamingo Flora	Roses	Njoro	Sam Nyoro	0721993857	s.ivor@flamingoflora.co.ke
Flora ola	Roses	Solai-Nakuru	Lucas Choi	0721832710	lucas.floraola@gmail.com

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Flora Delight	Summer flowers	Kiambu/ Limuru	Marco	0710802065	marcovansandijk@yahoo.com
Florensis Ltd	Cuttings	Naivasha	Anne Marie		annemarie@florensis.co.ke
Florenza Flowers	Roses	Solai	Yogesh	0737453768	farm.florenza@megaspingroup.com
Fresh Gold Flowers Ltd	Flowers	Mt. Kenya	John Karimi	0721622294	karimi@freshgolgkenya.co.ke
Frigoken K Ltd	Vegetables	Nairobi	-	-	-
Gatoka Roses	Roses	Thika	Herman Njuguna	0728 854 844	info@gatokaflowers.com
Golden Tulip	Roses	Olkalao	Umesh Choudhery	0739729658	umesh@bth.co.ke
Gorge Farm	Vegetables	Naivasha	Patrick Mulumu	0722498267	pmulumu@vegpro-group.com
Greenlad Mount Kenya	Vegetables	Mt Kenya	Joseph Misire	0723 316 962	nanyukiveggreenlands@gmail.com
Greenlad Mount Kenya	Vegetables	Mt Kenya	David Mwanza	0722 140 792	hornbil@greenlands.co.ke
Greenlad Mount Kenya	Vegetables	Mt Kenya	Sylvester Sayia	0729 828 488	pioneer@greenlands.co.ke
Greenland Makuyu	Vegetables	Nairobi	David Thuranira	0780 666 810	jenem@greenland.co.ke
Groove	Flowers	Naivasha	John Ngoni	0724448601	grovekenya@gmail.com
Harvest / Manjo Plants	Roses	Olkalao	Paul Salim	0722 470 717	paul.salim@harvestflowers.com
Harvest Ltd	Roses	Athiriver	Paul Salim	0722 470 717	paul.salim@harvestflowers.com
Harvest Flowers Group	Roses	Murungaru	Paul Salim	0722 470 717	paul.salim@harvestflowers.com
Highland plantations	Cuttings & Herbs	Olkalau			production@highlandplants.co.ke
Imani Flowers	Summer Flowers	Nakuru	Raphael Otieno	0792302466	raphael@imaniflowers.co.ke
Interplant Roses	Roses	Naivasha	Gavin Mourittzen	0733220333	info@interplantea.co.ke
Isinya	Flowers	Isinya	Rajesh	-	pm@isinyaroses.com
Jim Fresh	Flowers	Nairobi	Dan Agawo	0722 894 822	danagawo@mbogatuu.com
Karen Roses	Flowers	Nairobi	Peter Mutinda	0723353414	pmutinda@karenroses.com
Kariki Ltd- Thika	Flowers	Thika	Samwel Kamau	0723721748	production@kariki.co.ke
Kariki Ltd - Nanyuki	Eryngiums	Nanyuki	Richard Fernandes	062-31023/6	bondet.production@karik.biz
Kariki Ltd - Naivasha	Hypericum	Naivasha	Peter Kamwaro	0721758644	hamwe.fm@kariki.biz
Kariki Ltd - Molo	Fowers	Molo	Joseph Juma	0725643942	production.fm@kudenga.co.ke
Kenflora Limited		Kiambu/ Limuru	Abdul Aleem	0722311468	info@kenfloraa.com
Kentalya	Cuttings	Naivasha	Linnet	0733549773	lynette@kentalya.com
KHE		Nanyuki	Elijah Mutiso	0722254757	mutiso@khekenya.com
KHE Nairobi	Vegetables	Nairobi	Juliah Mwakisha	0720 901 224	grp.agronomy@khekenya.com
Kisima Farm	Roses	Timau	Martin Dyer	0722593911	martin@kisima.co.ke
Kongoni River Farm - Gorge Farm	Roses	Naivasha	Anand Patil	0728608785	anand.patil@vegpro-group.com
Kongoni River Farm - Liki River	Flowers	Nanyuki	Madhav Lengare	0722202342	madhav@vegpro-group.com
Kongoni River Farm - Star Flowers	Flowers	Naivasha	Prabkaran	0739906040	prabakaran@vegpro-group.com
Kongoni River Farm - Kongoni	Flowers	Timau	Oppaso Bandgar	07120070053	oppasobandgar@vegpro-group.com
Kongoni River Farm -Bemack	Flowers	Timau	Rakesh Kuttaiah	0724631299	rakesh.kuttaiah@vegpro-group.com
Kongoni- Galaxy	Roses	Naivasha	Kiran Nangare	0787787544	kiran@vegpro-group.com
Lamorna Ltd	Roses	Naivasha	Mureithi	0722238474	admin@lamornaflowers.com
Lathyflora		Limuru	Mbauni John	0721798710	mbaunij@yahoo.com
Lauren International	Flowers	Thika	Chris Ogutu/Carlos	0722783598	laurenflowers@accesskenya.co.ke
Laurel Investment	Roses	Nakuru	Rajendra Jadhav	0738359459	rajendra.laurel@bht.co.ke
Livewire	Hypericum	Naivasha	Esau Onyango	0728606878	management@livewire.co.ke
Lobelia Ltd/ Sunland	Roses	Timau	Peter Viljoen	0721632877	info@lobelia.co.ke
Lolomarik	Roses	Nanyuki	Topper Murry	0715 727991	topper@lolomarik.com
Longonot Horticulture		Naivasha	Chandu	0724639898	chandrakant.bache@vegpro-group.com
Magana	Roses	Nairobi	Nicholas Ambanya	0732 779 987	ceo@maganaflowers.com
Mahee Flowers	Roses	Olkalao	Rao Venkatesh	0705401431	maheefm@eaga.co.ke
Maridadi Flowers	Flowers	Naivasha	Jack Kneppers	0733333289	jack@maridadiflowers.com
Maua Agritech	Flowers	Isinya	Madan Chavan	0738669799	production@mauaagritech.com
Mau Flora	Roses	Molo	Mahesh	0787765684	mahesh@mauflora.co.ke
Mara Farming Group	-	Nairobi	Joshua Nyalita	0722 336 968	joshua.nyalita@marafarming.com
Milenium Growers	Summer Flowers	-	Sushant Wankara	0731316000	sushant@marvelgreens.com
Molo Greens	Summer Flowers	Molo	Justus Metho	0722 755396	justus@mologreens.com
Mt. Elgon Flowers	Roses	Eldoret	Bob Anderson	0735329395,	bob@mtelgon.com
Mwanzi Flowers Ltd	Roses	Rumuruti	Ram	0722265845	-
Mzuurie Flowers - Maji Mazuri	Roses	Eldoret	Mark Juma	0727471034	mjuma@majimazuri.co.ke
Mzuurie Flowers - Molo River Roses	Flowers	Kilelwa	Andrew Wambua	0724256592	awambua@moloriverroses.co.ke
Mzuurie Flowers - Winchester Farm	Roses	Karen	Raphael Mulinge	0725848909	rmulinge@winchester.co.ke

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FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Mzuurie Flowers - Winchester Farm	Flowers	Bahati	Raphael Mulinge	0725848909	rmulinge@winchester.co.ke
Ngong Veg	Vegetables	Nairobi	John Macharia	0721 387 216	macharia@ngongvegltd.co.ke
Nini Farms	Roses	Naivasha	Philip Kuria	0720611623	production@niniltd.com
Nirp East Africa	Roses	Naivasha	Danielle Spinks	0702685581	danielles@nirpinternational.com
Ol Njorowa	Roses	Naivasha	Charles Kinyanjui	0723986467	mbegufarm@iconnect.co.ke
Oserian	Flowers	Naivasha	Christine Karambu	0702350689	christine.karambu@oserian.com
Panda Flowers	Roses	Naivasha	Geofrey Kanyari		
Panocol International	Roses	Eldoret	Mr. Paul Wekesa	0722748298	paul.wekesa@panocal.co.ke
Penta	Flowers	Thika	Tom Ochieng	0723904006	tom@pentaflowers.co.ke
Pendekeza	Roses	Nanyuki	Richard Siele	0722716158	tambuzi.sales@tambuzi.co.ke
PJ Dave	Flowers	Isinya	Sanjiv Dogra	0737576966	pjdaveflowers@wananchi.com
PJ Flora	Flowers	Isinya	Palani Muthiah	0752607651	muthiah.palani1971@gmail.com
PJ Flowers Ltd	Roses	Isinya	Sanjiv	0737576966	sanjiv@pjdave.com
PJ Flora	Roses	-	Santos Kulkarni	0738990521	santosh@pjdave.com
Kentalya	Cuttings	Naivasha	-	-	-
Plantech Kenya Ltd	Propagators - Herbs, Roses & Vegetables	Naivasha	Idan Salvy	0702187105	idan@plantechkenya.com
Porini Flowers	Roses	Molo	Vivek Sharma	0731040498	gm@poriniflowers.com
Primarosa Flowers Ltd	Roses	Olnjororok	Shantaram	0701464049	production.p2@primarosaflowers.com
Rain Forest Farmlands Ltd	Roses	Naivasha	Mr. George Onguko	0725762099	george@durofarms.com
Ravine Roses Flowers	Flowers	Nakuru	Peter Kamuren	0722205657	pkamuren@karenroses.com
Redhil Nurseries	-	Nairobi	Collins Omuga	0722 598 498	production@red-hill.farm
Redland Roses		Thika	Aldric Spindler	0733603572	aldric@redlandsroses.co.ke
Redwing Flowers	Flowers	Nakuru	Simon Sayer	0722227278	sayer@redwingltd.co.ke
Rift Valley Roses (K) Ltd	Flowers	Naivasha	Peterson Muchuri	0716589898	fm@riftvalleyroses.co.ke
Rimiflora Ltd	Hypericum	Njoro	Richard Mutua	0722357678	richard@rimiflora.com
Riverdale Blooms Ltd		Thika	Antony Mutugi	0202095901	rdale@swiftkenya.com
Roseto	Roses	Roseto	Arvind	0734848560	gm.roseto@megaspingroup.com
Rozzika Gardens –Kamuta Farm		Naivasha	Mbuthia	0721849045	jwachiram@yahoo.com
Savannah international	Geranium	Naivasha	Ignatius lukulu	0728424902	i.lukulu@savanna-international.com
Selecta Kenya		Thika	Robert Khamala	0727 467 464	r.khamala@selectakenya.com
Solai Roses					
Sojanmi Spring Fields	Roses	Njoro	Ashesh Mishra	0792217088	ashesh@xflora.net
Schreus	Roses	Naivasha	Haiko Backer	-	-
Shades Horticulture	Flowers	Isinya	Ashutosh Mishra	0722972018	info@shadeshorticulture.com
Shalimar Flowers	Flowers	Naivasha	Dinka	-	-
Sian Roses - Maasai Flowers	Flowers	Isinya	Andrew Tubei	0722728364	atubei@sianroses.co.ke
Sian Roses - Agriflora (K) Ltd	Roses	Nakuru	Charles Mulemba	-	cmulemba@sianroses.co.ke
Sian Roses - Equator Roses	Roses	Nakuru	Nehemiah Kangogo	0725848910	nkangogo@sianroses.co.ke
Sierra flora	Roses	Njoro	Sharieff	0787243952	farm.sierra@megaspingroup.com
Simbi Roses	Roses	Thika	Karue Jefferson	067 44292	simbi@sansora.co.ke
Sirgoek Flowers	Flowers	Eldoret	Andrew Keittany	0725 946429	sirgoek@africaonline.co.ke
Solai Milmet/Tindress	Flowers	Nakuru	Vinoj J. Kumar	0737801646	solairoses@gmail.com
Subati Flowers	Roses	Subukia	Naren Patel	0712 584124	naren@subatiflowers.com
Subati Flowers	Roses	Naivasha	Naren Patel	0712 584124	naren@subatiflowers.com
Suera Flowers Ltd	Roses	Nyahururu	George Kimathi	0724622638	gkbuuri@gmail.com
Sunland Timau Flair	Roses	Timau	Peter Viljoen	0723383736	info@lobelia.co.ke
Stockman rozen	Roses	Naivasha	Julius muchiri	0708220408	julius@srk.co.ke
Syngenta Flowers - Kenya Cuttings	Flowers	Ruiru	James Ouma	0725217284	john.odhiambo@syngenta.com
Syngenta Flowers - Kenya Cuttings	Flowers	Thika	Kavosi Philip	0721225540	philip.munyoki@syngenta.com
Syngenta Flowers - Pollen	Flowers	Thika	Joseph Ayieko	0733552500	joseph.ayieko@syngenta.com
Tambuzi	Roses	Nanyuki	Richard Siele	0722716158	tambuzi.sales@tambuzi.co.ke
Terrasol	-	Nairobi	Jacques	0705 519 633	jacques@pvdhaak.nl
Timaflor Ltd	Flowers	Nanyuki	Simon van de Berg	0724443262	info@timaflor.com
Transebel	Flowers	Thika	David Muchiri	0724646810	davidmuchiri@transebel.co.ke
Tulaga Flowers	Roses	Naivasha	Steve Alai	0722659280	tulagaflower@africaonline.co.ke
Tulaga Flowers	Herbs	Rumuruti	Gideon Kariuki	0701153844	tulagamarmanet@africaonline.co.ke
Tk Farm		Nakuru	Gichuki	0721499043	davidgichuki20@yahoo.com

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FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Uhuru Flowers	Flowers	Nanyuki	Ivan Freeman	0713889574	ivan@uhuruflowers.co.ke
Utee Estate	Flowers	Nairobi	Mane	0737 513 844	mane.uel@btfgroup.com
United Selections	Roses -Breeder	Nakuru	Jeroen Van Marrewijk	0700176556	jvanmarrewijk@united-selections.com
V.D.Berg Roses	Flowers	Naivasha	Johan Remeeus	0721868312	johan@roseskenya.com
Valentine Ltd		Kiambu/Limuru	Joseph Kariuki	0728 093 379	joseph.kariuki@valentinegrowers.com
Van Kleef Ltd	Roses	Njoro	Rathan	0787266007	rathan@vankleef.nl
WAC International	Breeder	Naivasha	Richard Mc Gonnell	0722810968	richard@wac-international.com
Waridi Ltd		Athiriver	Cameron	0722 745 478	cameron@waridifarm.com
Wilham Kabuku	-	Nairobi	Natarajan	0735 792 063	natarajan@eaga.co.ke
Wildfire	Roses/summer	Naivasha	Eliud Kimani	0727598349	roses@wildfire-flowers.com
Wilfay Flowers	Gypsophila/hypericum	Subukia	Makori	0723358644	makoriwilfay@gmail.com
Wilmar Agro Ltd	Summer Flowers	Thika	Alice Muiruri	0722 321203	alice.muiruri@wilmar.co.ke
Windsor		Thika	Pradeep Bodumalla	0736 586 059	farm@windsor-flowers.com
Xpressions Flora	Roses	Njoro	Brijesh Patel	0715469732	brijesh.patel@xflora.net
Zena -Thika Farm	Roses	Thika	John Magara	-	sales@zenaroses.co.ke
Zena - Asai Farm	Roses	Eldoret	Phanuel Ochunga	0722506026	pochunga@zenaroses.com
Zena Roses - Sosiani Farm	Roses	Eldoret	Jackson Mbanya	-	-

FLOWER FARMS IN UGANDA

TYPE	FARM NAME	CONTACT PERSON	LOCATION	PHONE NUMBERS	E-MAIL
Roses	Rosebud	Ravi Kumar	Wakiso	0752 711 781	ravi.kumar@rosebudlimited.com
Roses	Maiye Estates	Premal	Kikwenda wakiso		premal@maiye.co.ug
Roses	Jambo flowers	Patrick Mutoro	Nakawuka Sisia Wakiso	(254) 726549791	pmutoro80@yahoo.co.uk
Roses	Pearl Flowers	Raghbir Sandhu	Ntemagalo Wakiso	0772 72 55 67	pearl@utlonline.co.ug
Roses	Aurum flowers	Kunal Lodhia Shiva	Bulega, Katabi Wakiso	0752 733 578	kunal@ucil.biz
Roses	Eruma roses	Kazibwe Lawrence	Mukono	0776 049987	kazibwe@erumaroses.com
Roses	Uga rose	Grace Mugisha	Katabi Wakiso	0772 452 425	ugarose@infocom.co.ug
Roses	Kajjansi	K.K rai	Kitende Wakiso	0752 722 128	kkrai@kajjansi-roses.com
Roses	Uganda Hortech	M.D hedge	Lugazi Mukono	0703 666 301	mdhedge@mehtagroup.com
Chrysanthemums	Fiduga	Jacques Schrier	Kiringente , Mpingi	0772 765 555	j.scherier@fiduga.com
Chrysanthemums	Royal Van Zanten	Jabber Abdul	Namaiba Mukono	0759 330 350	j.Abdul@royalvanzanten.com
Impatiens, poinsetia	Wagagai	Olav Boenders	Iwaka Bufulu Wakiso	0712 727377	olav@wagagai.com
Chrysanthemums	xclussive cuttings	Peter Benders	Gayaza- Zirobwe rd	0757 777 700	pbenders@xclussiveuganda.com

FLOWER FARMS IN TANZANIA

TYPE	FARM NAME	CONTACT PERSON	LOCATION	PHONE NUMBERS	E-MAIL
Roses	Kili flora	Jerome Bruins	Arusha	255 27-25536 33	jbruins@habari.co.tz
Roses	Mt. Meru	Tretter	Arusha	255 27 2553385	office@mtmount-meru-flowers.com
Roses	Tengeru Flowers	Tretter	Arusha	255 27 255 3834	teflo@africaonline.co.tz
Crysenthemums	Multi flower Ltd	Tjerk Scheltema	Arusha	255 27 250 1990	tjerk@arushacutting.com
Crysenthemums	Dekker Bruins	Lucas Gerit	Arusha	255 27 255 3138	info@tfl.co.tz
Crysenthemums	Arusha cuttings	Tjerk Scheltema	Arusha	255 27 250 1990	tjerk@arushacutting.com

FLOWER FARMS IN ETHIOPIA

TYPE	FARM NAME	CONTACT PERSON	LOCATION	PHONE NUMBERS	E-MAIL
Cuttings	Abssinia flowers	Toon Van Kessel	Legedadi	+251 116653911	tvankessel@yahoo.com
Roses	Addisfloracom PLC	Kitema Mihret	Holeta	+251 912 264190	tasfaw@addisflora.com
Folwers	Afriflowers PLC	Mauricio Castillo	Holeta	+251 937977849	topigs@grepodelago.com
Fruits & Vegetables	Africa Juice Tibila S.C	Abayeneh Essayas	Adama	+251 221191203	info@africajuice.com
Roses	Agriflora		Holeta	+251 922 397760	flowers@ethionet.et
Roses	Alliance Flowers PLC	Navale	Holeta	+251 116184341	navele@nehainternational.com
Roses	Arsi Agricultural Mecahanization		Holeta		arsiflower@ethionet.et
Cut Flowers	Assela Flowers Farm PLC	Friedrich Wilheilm	Wolliso	+251 911431417	info@asellaflowers.com
Roses	AQ Roses PLC	Frank Ammerlaan	Ziway	+251 464414277	frank@aqroses.com
Cut Flowers	Beti Ornamentals	Henock Zerihun	Debre Zeit	+251 116521211	betiornamentaldz@gmail.com
Roses	Bukito Flowers	Anteneh Tesfaye	Debra Zyeit	+251 911 615571	
Roses	Braam Flowers PLC	Ben Braam	Ziway	+251 464413137	braam.roses@gmail.com
Cuttings	Desa Plants PLC	Ben Depraeter	Mojo-Ejersa	+251 116569195	ben@desaplants.com
Roses	Dire Highlands Flowers PLC	Seifu Bedada	Holeta	+251 113870308	dhf@ethionet.et
Roses	Dire flowers 2	Abenet Fiktu	Sebata	+251 911 149 329	abifiktu@yahoo.com
Roses	Dugda Floriculture Dev't PLC	Adugna Bekele	Debre Zeit	+251 4336142/43	general@dugdaflora.com
Roses	Ethio dream PLC	Jan Prins	Holeta	+251 11 2372334/35	ethiodream@ethionet.et
Roses	Ethio Agri- CEFT	Asfaw Kejela	Welmera	+251 112372415/18	ethioagriceft@ethionet.et
Roses	Enyi Ethio Roses	Endale Yirga	Kara Kore Sebeta	+251 113482143	enyi@ethionet.et
Roses	Eden Roses	Vaibhav Aggarwal	Sebata	+251 8959343	vaibhav@edenroses.com
Roses	Ethio passion Agro PLC/Oda Flowers	Roshan Muthappa	Sebeta	+251 111561572/73	ethiopassion@ethiopassion.com
Roses	ET Highland Flora PLC	Tsegaye Abebe	Sebeta	+251 113383710	bnf2etf@ethionet.et
Roses	Euro Flora PLC	Shiranda Pia	Holeta	+251 118602075	euroflora@gmail.com
Roses	Evergreen Farm	Hiwot	Debra zyeit	+251 912 18 5065	Hiwot.Ayaneh@yahoo.com
Hydragiums	Ewf Flowers	Humphrey	Sebata	+251 920 35 1931	production-manager@Ewf-flowers.com
Cuttings	Ethiopia Cuttings PLC	Sunil Hemdev	Koka	+251 224590151-55	akalu.ermias@syngenta.com
Cuttings	Ethipia Magical Farm	Daniel Bentora	Sendafa	+251 118606534	emf@ethionet.et
Summer Flowers	Freesia Ethiopia PLC	Ronald Vijverberg	Sebata	+251 118101018	freesia@ethionet.et
Roses	Friendship Flowers	A. Tsegaselassie	Debre zeit	+251 91 130 49 67	friendship.flowers@yahoo.com
Roses	Flowerama PLC	Srinivasan Mini	Holeta	+251 112849349	floweramaa@hotmail.com
Cuttings	Florensis Ethiopia PLC	Ronald Vijverberg	Koka	+251 116525556/57	florensis@ethionet.et
Roses	Gallica Flowers PLC	Stephane Mottier	Menagesha	+251 112849368	gallicaethionet.et
Roses	Golden Rose Agro Farm Ltd	Ryaz Shamji	Sebata	+251 113520282/84	goma@ethionet.et
Roses	Herburg Roses PLC	Huub Van Der Burg	Ziway	+251 464414281/79	huu@herburgroses.nl
Roses & Veges	JJ Kothari PLC	Jay Prakash Kothari	Sululta	+251 111860021	j.jkothari@gmail.com
Fruits & Veges	Jittu Horticulture PLC	Jan Prins	Tikurwuha	+251 116189313/14	info@jittuhorticulture.com
Roses	Joe Flowers PLC	Wondirad Firdu	Holeta	+251 112372016	joeflowersplc@gmail.com
Roses, veges, herbs	Joytech PLC	Jagdish Eknath	Debre Zeit	+251 122370877	jagdish@joytechplc.com
Cut Flowers	Karuturi Farm/Ethiopia meadows	Anil Tumu	Holeta	+251 11 6632437/39	eth.meadows@gemail.com
Roses	KAF Flowers	Baker Elkadi	Holeta	+251 913 202 460	baker-elkadi@yahoo.com
Cut Flowers	Klaver Flowers PLC	Danny Koppes	Hawassa	+251 110916581769	klaverflowers@gmail.com
Roses	Lafto Roses PLC	Gerard van der Deiji	Sebeta	+251 115541485/83	pm@laftoroses.com
Roses	Linssen Rose	Peter Linssen	Addis Alem	+251 11 3205668	linssenroseset@ethionet.et
Fruits, Veges	Luna Fruits PLC	Tesfalidet Hagos	Koka	+251 116627894	lunaexport@ethionet.et
Cut Flowers	Maranque Plants PLC	Marc Driessen	Merti	+251 22 1190750	md@maranqueplants.com
Veges, sum. flowers	Marginpar Ethiopia PLC	Andrians Vanrol	Holeta	+251 116547005	marginpar@ethionet.et
Roses	Metrolux Flowers	Akiko Siyum	Holeta	+251 114669273	export.mtx@ethionet.et
Roses	Minaye Flowers PLC	Yidnekachew Ayele	Debre Zeit	+251 113728666/67	minaye@ethionet.et
Summer Flowers	Mullo Farm PLC/ Derba PLC	William Koerts	Chancho	+251 116553910	office@derbaflowers.com
Roses	Oromia Wonders	Navale Kodaje	Holeta	+251 112372378	mekdesoromia@gmail.com

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Wednesday June 5 - Friday June 7

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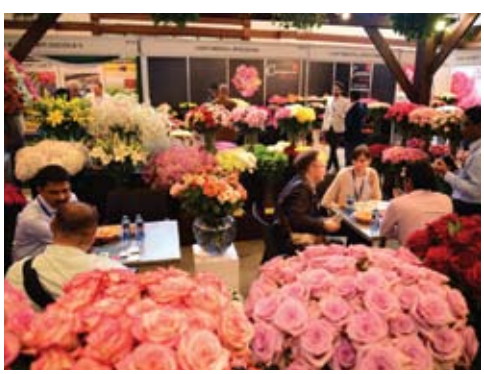

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