July - August 2022

THE LEADING FLORICULTURAL JOURNAL IN THE REGION

FLORICULTURE

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Pius Kimani: No Room for Failure

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For More Information Please Contact:

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Contents

The Leading Floriculture Magazine

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

Embrace IPM

Diseases can cause yield and quality loss where inoculum and favourable climatic conditions are present. It is important that disease risk is identified for each crop on a paddock by paddock basis and appropriate disease management plans developed and implemented where required. Integrated disease management strategies that include resistant varieties, crop rotation and fungicide application should be implemented to minimise potential losses.

Since partial resistance to some fungicides has been identified in the farming population an integrated management approach is essential to minimise further resistances developing in the population.

Should integrated strategies not be adopted, currently available fungicides will become less effective and we may not be able to prevent losses.

Partial resistance in to some fungicides reduces their effectiveness, rather than making them completely ineffective.

However, if they are continued to be used, further selection pressure will result in development of more serious mutations. The mutations identified reduce the efficacy of a number of fungicides.

Growers must adopt strategies to extend the useful life of currently available fungicides. One strategy is to mix or alternate different fungicides. This is because not all fungicides are affected equally by mutations of the fungus. Also, in crops where more than two fungicide applications are to occur the same active should not be used at both applications. Growers MUST always follow label guidelines and ensure maximum residue limits (MRLs) are adhered to.

Masila Kanyingi
Editor

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Mr. Dick Van Raamsdonk

Pomp and Colour at IFTEX 2022

By Mary Mwende Mbithi

"Two years without you seeing me was the longest time I've been away! Did you miss me?" I know you are already wondering, but this is not me, this was actually IFTEX asking after being away for two good years.

It's been two years since Covid-19 pandemic struck, and that's just how IFTEX got locked out. Curfews and lockdowns characterized the season, creating turbulence in the flower industry. It was like a long, still and dark night for the flower industry.

Finally, after the dark cloud of Covid-19 turmoil has subsided, and the world is recuperating from the ravages of the pandemic, it has finally dawned a good day for the flower industry. This year-2022; The year that has seen the reawakening of a sleeping giant, IFTEX 2022. Without much ado, the day had eventually come. From 30th of May to the 1st day of June 2022, it was just pomp and colour everywhere at Visa Oshwal Center in Westlands, Nairobi, Kenya.

When the doors flung open, beautiful bouquets splashed the corridors of the magnificent Dinesh and Mahesh Chandaria auditorium, displaying the rich varieties of the world's floral prowess. Rainbow-coloured Roses and summer flowers were among the flowers that sprayed the air with their sweet aroma. A mega entrance by David Osiany Hsc, Chief Administrative Secretary, Ministry of Industrialization, Trade and Enterprise Development, brought the day to a kick-off as he officiated the grand opening of the Expo.

Marketing took the centre stage as exhibitors grabbed the moment giving away freebies to inquisitive visitors and clients who showed up at their specific stands.

In his opening speech, he said the horticulture exports had in the last three years surpassed tea placing horticulture at the forefront of exports in Kenya with an outstanding 70% from the floriculture sub-sector.

The growth of revenues from the past three years too was promising for they had grown

from Kshs 107billion to Kshs 110.8 billion. Horticultural exports in 2020 were valued at Kshs 165.7 billion with Kshs110.8 billion straight from the flower industry.

CAS Osiany noted on the active involvement of women in the flower industry. He called on flower growers to continue supporting women and providing a conducive working environment for their growth.

"The government is very keen on this sector because women are the majority. I wish to encourage all flower producers, especially large scale investors to continue supporting women by providing them with a conducive environment for work and deliberately invest in their health care," said Osiany.

CAS Mr. Osiany at the Netherlands stand

It is of importance to note that the cut flower sector employs over 350,000 people directly in the flower farms and over three million others who support the farms through provision of auxiliary services and goods.

IFTEX is a great event for interaction among Kenyan flower growers and international flower buyers. Buyers from all across the world gather in this event every year to purchase the superb quality of the flowers for which this exhibition is famous for.

At this year's Expo, different stands and stalls were designated for different exhibitors among them horticultural growers, agro-chemical companies, biologicals companies, media outlets, breeders, machinery and safety gear companies. The participants came from Kenya, Rwanda, Ethiopia, Tanzania, Uganda and South America to meet buyers from key markets in Europe, Asia and the US. Every exhibitor was trying to create a niche in their area of specialization, selling and wooing potential clients for their business. Suppliers, growers, exhibitors, buyers and visitors made the various categories of potential clients and contacts. It was a fun-filled business fair that saw information

Dr. Isaac Macharia of Kephis

and knowledge flow freely among all those present and had an intend. Marketing took the centre stage as exhibitors grabbed the moment giving away freebies to inquisitive visitors and clients who showed up at their specific stands.

The three day International Flower Trade Expo (IFTEX) is a professionally organized floricultural exhibition that aims to invite the right set of buyers and provide local floriculturists to learn more about the international floriculture market and help them expand their scale of operations. This event also aims to exploit Kenya's potential as one of the largest markets for fresh cut flowers.

Mr. Dick Van Raamsdonk, President HPP Exhibitions, and the Brain Child of IFTEX who has made a big contribution to Kenya's flower sector. He said the event affirmed Kenya's position as the leading flower producer. He believes that IFTEX is the only event where one can meet all flower

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growers at the same time and place, together with its buyers. Breeders want to meet growers and growers want to meet buyers. It's as simple as that.

According to Mr. Dick, IFTEX has become a regional event, hosting growers from other African flower producing countries that are too small on their own to hold such an event.

IFTEX was encompassed by 'the flowers by sea conference' on its second day. This conference involved stakeholders in the flower industry among them Chrysal, Flower watch, Kenya Flower Council (KFC), Maersk, Kuehne+Nagel and Kenya Maritime. The idea was to discuss the transport of flowers by sea as an alternative to air transport of flowers.

The fair was crowned by the signing of a framework of cooperation between Kenya and the Netherlands to create cold chain infrastructure for the transportation of flowers by sea to solve the challenges posed by air transport.

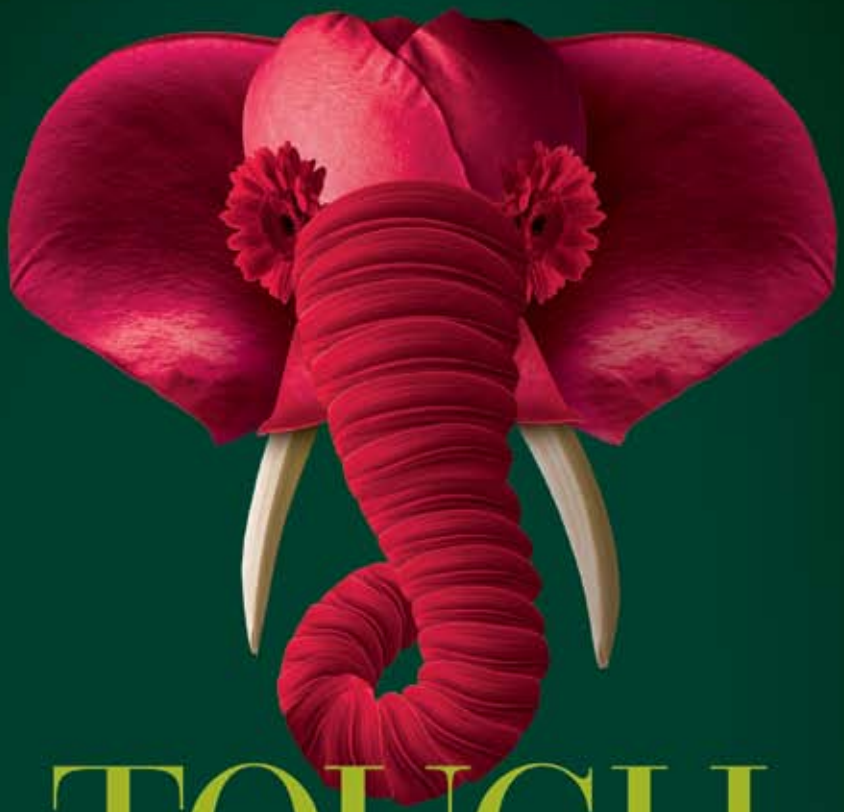
Recently, there has been bottlenecks here and there that have engulfed air transport of flowers among them high freight charges as well as freight shortage of cargo space. This has brought to the table the rethink of sea transport as a solution with the larger advantage as reduction of the carbon footprint.

As sure as it was, the IFTEX expo was one learning event that had so much to take home.

Part of the Dignitaries at Netherlands Embassy Stand

Opening Ceremony

Celtic Team at IFTEX



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Pius Kimani: No Room for Failure

He is Passionate about his work because it fills a large part of his life, and the only way to be satisfied is to do what he believes is great work. And the only way to do great work is to love what he does. In my daily work attention to details is key.

Mr. Pius Kimani, Farm Manager, Dummen Orange Naivasha

How is it coming from your local primary School and rising to where you are? (Personal and Professional background)

I attended Gathiru-ini Primary School in Githunguri, Kiambu County, then proceeded to the neighbouring Gathiru-ini Secondary School. I was destined to attend Gathiru-ini University but since it did not exist, I attended the University of Nairobi in the Capital undertaking a Bsc Agriculture Degree.

I came from very humble background and grew up on my parent's farm doing subsistence crop farming and semi commercial Dairy farming as well as commercial coffee farming.

I started working on a flower farm in 1998 to date having worked in various roles and settling to Production Management/ Growing and Farm Management in 2001.

Was there any sort of pressure when growing up from parents or others on your future career? Did you ever have conflict of profession? Unable to decide what next

My Parents were both teachers and teachers were really respected back in the 70s and thus me and my six siblings got a head start and it shows as most of us as are quite successful in various high profile careers and other commercial activities.

There was no much pressure for a career in whichever sector the pressure was to be admitted in a prestigious University and bring back to my village a degree which I did. Back in the 90s the economy was small and shrinking and thus it was not that easy to find a good and well-paying job.

Most children grow up thinking of white-collar jobs, growing up, did you ever imagine you would come to farming as a career?

My job has actually been nice as I split my time from growing and farm administration/ management at time general management. I became a farm/Production Manager

back in the year 2001 in a 6.5 Hectare farm in Nandi County after working in other roles in the Horticultural companies for 3 years.

The job is quite rewarding and I have many privileges.

In your opinion, where do you see flower farming in the next decade?

Having widely travelled and been lucky to visit a few countries in Europe I think the future of farming is large scale, intensive, Robotics and Mechanization as this leads to better production quantity per unit area and higher quality of produce thus a much better return on investment. Thus, we will see less and less physical-small scale farming in the global perspective.

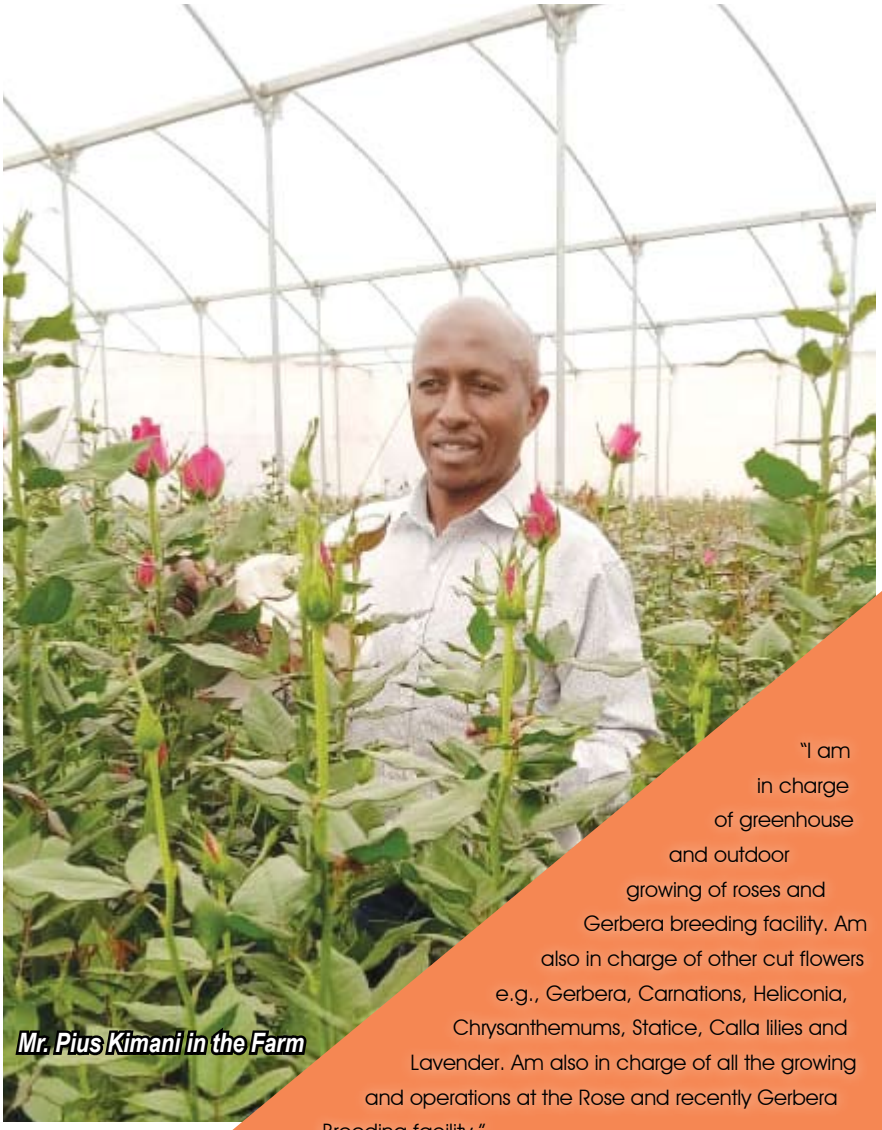
Other than growing have you ever worked in any other sector?

My first degree was in Agriculture. After college I worked for Barclays Bank for a while but realized I had to develop a career in my area of qualification and that's when I found my first job at a flower farm in 1998.

Take us your daily life as a grower in a breeding facility. What are you most conscious about in your current position?

At Dummen Orange Naivasha I am in charge of greenhouse and outdoor growing of roses and Gerbera breeding facility. Am also in charge of other cut flowers e.g., Gerbera, Carnations, Heliconia, Chrysanthemums, Statice, Calla lilies and Lavender. Am also in charge of all the growing and operations at the Rose and recently Gerbera Breeding facility.

Making of Fertigation/ Irrigation programs, Integrated pest management, spray programs, leading in crop maintenance and cultural activities. I am also in charge of land preparation and Hydroponic systems setup. Labour management is also an integral part of my daily activities.



Mr. Pius Kimani in the Farm

"I am in charge of greenhouse and outdoor growing of roses and Gerbera breeding facility. Am also in charge of other cut flowers e.g., Gerbera, Carnations, Heliconia, Chrysanthemums, Statice, Calla lilies and Lavender. Am also in charge of all the growing and operations at the Rose and recently Gerbera Breeding facility."

Of all the things you've done in your life, what are you most proud of?

Besides bringing up my kids running successful operations in different Horticultural companies. I am also proud of the long Growing/ Farm Management career.

I am also proud to have mentored and coached many upcoming managers and growers who now hold very senior positions in many companies some even senior and with more scope than myself.

Do you subscribe to the quality or quantity of time when it comes to spending time as a grower?

The job of a Grower/ Farm Manager can be demanding but with proper planning and the right team it can be both rewarding and enjoyable and thus one will not mind spending a lot of time at work as it is fun.

It is very interesting to plant and propagate plants and then you see them grow and

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Mr. Pius Kimani, Farm Manager, Dummen Orange Naivasha with Mr.Laurent Perrier, Managing Director Bayer East Africa Ltd during the Launch of SERENANDE

bloom into beautiful flowers. The fields and greenhouses always look very amazing.

When the final consumer receives our products, they are always very happy and that adds to my satisfaction as a grower.

What do you want people especially those you are mentoring to remember about you?
To remember me as this positive minded person that never gives up and focuses on the job and gets results.

What would you be doing if you weren't a grower?
I have never imagined doing anything else for a career as I have been a Grower/farm Manager/Production Manager for the last 24 years.

I have however an interest in Project management as I love to see things starting, progressing and then enjoy to see the end results.

What are you most passionate about?
Am very passionate with flowers especially Roses and recently Chrysanthemums. I also love traveling especially to different countries, I also love hiking and mountain climbing.

My passion learning new things has led me to my current position. Currently I am a student at The HAS University of Applied Sciences in the Netherlands taking a Course in Soil (Planting Media) Dynamics, Fertilization and Plant Physiology which is very interesting and adds to my knowledge and experiences.

Any final comments?
The flower industry is very fascinating and can also be very rewarding when one is focused and determined. We still have a big room for improvement and also have a big potential as a country as we have a lot of comparative advantages in terms of availability of well experienced and educated manpower, land, water, good climate and other factors that enable profitable growing and exportation of flowers and vegetables.

My current job is really nice as I get to travel to Europe quite often and visit many advanced farms/Operations and learn a lot. It also exposes me to many experts and consultants as Dummen Orange has farms in many countries spread across almost all continents and has a very wide variety of crops.

At Dummen Orange we are the leading Propagator and Breeder of cut flowers; Roses, carnations, Chrysanthemums, Gerbera, Statice and many ther plants including pot plants.

We invite all those involved in growing and exporting of plants to our facilities as a one stop shop for all your flower and young plants needs.

(Left) Mr. Pius Kimani, Farm Manager (2nd row), Dummen Orange Naivasha keenly following a presentation, (Right), Mr. Pius Kimani in his office

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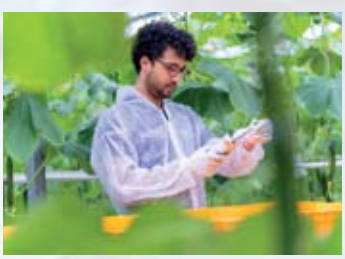

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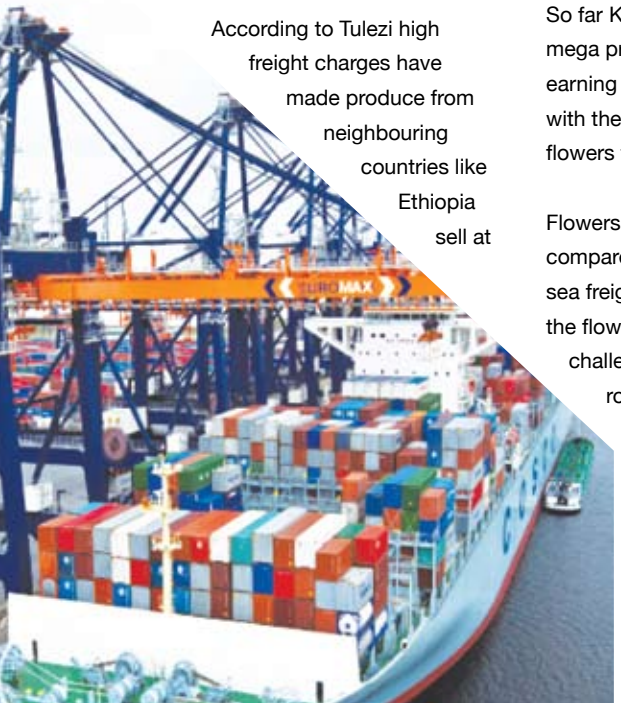
It's Bon Voyage For Kenya's Flowers

By Mary Mwende Mbithi

Air freight has for years been the sole mode of transport for flowers in the entire continent. With the international flower business growing substantially recently, sea transport is 'the new kid in the block'. Coming just in handy as an alternative when the cost of air freight has shot up to $5.8 per kilo of cargo, is more of a milestone to the flower industry.

Kenya Flower Council's CEO Clement Tulezi, says that, "sea freight is a solution to gaps left by air freight which amount to about 1500 tonnes per week and the air freight is not expanding. The only way forward is flowers by sea."



According to Tulezi high freight charges have made produce from neighbouring countries like Ethiopia sell at competitive prices in the EU market due to their lower freight charges of $2.5 per kilo of cargo. Sea freight is estimated to bring down the freight rates to about $2.8 per kilo of cargo.

Since the beginning of the year, Kenya has successfully shipped about 20 containers per week on average with a vision of 50% of all fresh produce to be exported by sea

by 2030. All in all, the use of both air and sea freight would cut out Kenya as East Africa's Horticultural lodestar.

So far Kenya has created a niche as a mega producer and exporter in horticulture earning the country's GDP of more than 1% with the horticultural produce ranging from flowers to vegetables and fruits.

Flowers shipped by sea have less stress compared to those shipped by air. However, sea freight is not yet a common practice in the flower business. For instance, a major challenge is the duration it takes for roses from Kenya (about 30-35 days) to reach EU markets. This tells that poor handling and improper treatments may compromise on quality of flowers at their final destination. After arrival in Europe, roses should be able to withstand 3-4 day period in the retail channel and should have a remaining vase life of at least 7 days of acceptable quality.

According to Van Doorn, of Chrysal, sea transport of flowers is cheaper than air transport, more flower-friendly and when all steps are adhered to, it gives better quality vase life. To reach the end consumer in a good state, flowers ought to be in right stable conditions and handled carefully.

Flowers set for sea freight are meant to follow a strict cold chain management as well as botrytis control in order to alleviate damages. Early openings, leaf desiccation and fungal infections also need good management. Speaking at the 'Flowers by Sea' conference held at Visa Oshwal Center in Nairobi, the Chrysal team talked of a protocol to manage these with pre-treatment dip as the initial step before packing the flowers in a sea freight box customized to allow air flow in and out of the box.

According to Dennis Nyamweya of Kuenhe+Nagel, when shipping temperature-controlled goods like flowers, there is the need for reliable logistics that provides seamless cold chain transportation throughout the journey. Flowers via sea could take more than two weeks to their destination, therefore temperature should be maintained so as not to compromise on standards. Kuenhne + Nagel offers transport in reefer containers that are monitored around the clock with temperature controlled interventions in case of deviations in temperatures.

Jeroen van der Hulst, founder and managing director of Flower Watch says, "The implementation of sea freight in Kenya to Europe is a worthwhile development that makes the Kenyan industry more resilient, efficient and sustainable.

www.rosen-tantau.com

Bayer East Africa Unveils SERENADE® ASO

Mr. Edwin Kiptarus, the Go to Market Manager Cereals and Flowers East Africa

By Mary Mwende Mbithi

Flower growers preparing their spray program have yet another reason to smile as Bayer East Africa unveiled a superior liquid formulation and a powerful tool designed to protect against fungal diseases on the leaves and in the of soil as well bacterial diseases. This went down at Interplant Roses located at the Flower Business Park in Naivasha, Nakuru County during a Growers Day organized by Bayer.

It was an epoch-making fete as growers showed up in huge numbers all geared up for the launch of Serenade® ASO, a biological fungicide that aims at managing the notorious powdery mildew in roses.

Technical Walk

Growers were taken round the greenhouses by Bayer's team of agronomists where Bayer had contacted their prior trials before concluding on the effectiveness of the product. Different varieties of roses were showcased in various hydroponics system, and it was certain that Serenade® ASO was a game changer.

Roses inflicted with powdery mildew and those already cured from the latter were neatly displayed growing on pumice and coco peat in the hydroponics. It was evident that indeed Serenade® ASO was doing a wonder in rose growing. The roses treated with Serenade® ASO were spick and span, flourishing and looking healthier than those untreated.

Booth Discussions

The unique arrangements of the day had growers discussing with experts in three different booths. Bayer Agronomists took growers through all Bayer Crop science solutions for different farming challenges. On soil health, by use of a microscope, growers were taken through different soil components by experts led by ICIPE researchers Dr. Danny Coyne and Dr. Solveig Haukeland. Soil health was discussed mainly nematodes.

Dome

After a myriad of activities here and there, back and forth, not to mention refreshments galore and what have you, it was time for the official launch of the product. Mr. Maurice Koome, District Manager, Floriculture, export vegetables and herbs with Bayer East Africa took the steering wheel as the moderator of the day.

"Good afternoon, Ladies and Gentlemen. Welcome to the most awaited moment of this particular event where we are about to learn and discuss the well-being of our crops as we unveil the super protection against powdery mildew in our roses -Serenade® ASO", remarked Mr. Koome during the official opening of the launch.

Serenade® ASO

After an irresistible introduction by Mr. Koome, Mr. Edwin Kiptarus, the Go to Market manager Cereals and Flowers East Africa took to the podium to take growers through Serenade® ASO.

"Thank you so much, Serenade ASO®, a biological fungicide controls disease in complex growing situations. Serenade can be used against foliar and soil diseases in Flowers. Based on the beneficial bacterium *Bacillus amyloliquifaciens* strain QST 713, Serenade delivers control with high levels of environmental, human and safety to non-targets including bees when used as directed.

Mr. Maurice Koome, District Manager, Floriculture, export vegetables and herbs with Bayer East Africa Limited

It has a unique biological mode of action, rapturing the cell membrane of the fungi, aiding as a tool for resistance management with Maximum Residue Level (MRL) exemption. It has a pre-Harvest Interval (PHI): 0 days, and low Re-Entry Interval (REI). Serenade® ASO is IPM compatible with wide safety margins to bees, other pollinators and beneficials. It is easily integrated into grower practices, tank-mix compatible with other crop protection and nutrition products.

> Growers interviewed by this periodical were full of praise for the new product. Mr. Pius Kimani of Dummen Orange said it is a product that can change control of powdery mildew. The same were echoed by Mr. Lucas Choi who has already used it. Those in attendance included senior flower farm Managers from flower farms across the country, research institution and other Bayer Crop science partners.

Disease Spectrum

Serenade offers comparable control to other fungicides in seasonal disease control programs. It has superior control on powdery mildew and Botrytis. It can be a replacement for contact fungicides (i.e., *mancozeb*) and an alternative to copper or antibiotics for bacterial control. It is a soil disease suppression with yield impacts. It is known to supress *Sclerotinia, Alternaria*

Mr. Laurent Perrier, Managing Director Bayer East Africa Limited

and *Colletotrichum.* Serenade has been tested for compatibility with many other conventional products including fungicides, insecticides, herbicides and fertilizers and proved highly compatible.

Why is Serenade™ a Unique Product?

Serenade delivers value beyond efficacy. It has both bacterial and fungal controls from a single product, broad soil activity and proven yield increases and uses to optimize grower's flexibility and enhancing global trade. It's key benefits include a broad Spectrum product with MRL exemption, superior marketability plant safety, Increased yield and profit, excellent environmental profile, a resistance management tool with maximum application flexibility and low REI and PHI.

How SERENADE® ASO works

Foliar-application: It works on direct contact on the disease organism itself.

Anti-germination: It prevents fungus and bacteria from entering into the leaf tissue.

Effective formulation: It tackles diseases at an early stage.

Mode of Action

The diversity of Serenade activity derives

Mr. Mutuma of Bayer East Africa Limited, demonstrating to growers how bayer solutions work in soil health.

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Dr. Danny Coyne of ICIPE.

from it's unique nature as a microbial fungicide containing both endospores and natural product chemistry. It has foliar fungal control, bacterial control and soil disease suppression in addition to Plant growth promotion yield.

It's mode of Action is disrupting the pathogen cell membrane physically. Such Mode of Action has been recognized as a separate class by the FRAC Committee. According to FRAC code list Serenade is classified under BM 02 as F6: disrupters of pathogen cell membranes and for this category, resistance is not known.

Induced systemic response in action

Plant defence: Foliar applications of Serenade lead to induced resistance in plants. Serenade turns on a gene response in the plant, causing it to make proteins involved in defence against attack. This response happens throughout the plant.

Serenade, optimal partner for resistance management

Serenade can be used in mixtures with partners or in sequence, just like multi-sites. No restriction concerning the number, the timing, or the sequence of applications. Biological Fungicides such as Serenade can be generally considered as "Low Risk Groups" without any signs of resistance development.

Isabellah N. Magale, Customer Marketing, Bayer East Africa

Proprietary processes create industry leading formulation

Serenade is a fermentation product. During the fermentation process the spores of *Bacillus amyloliquifaciens* QST 713 produce the anti-fungal and antibacterial biological chemistry. The process follows thorough quality control to ensure Serenade is always supplied in consistently best quality. The final product contains the biological chemistry along with the *Bacillus amyloliquifaciens* QST 713 spores.

Three types of active biological compounds

During the fermentation process, *Bacillus amyloliquifaciens* QST713 produces a variety of biological compounds. These compounds can be grouped into three classes according to their activity on pathogens and the plant namely; Bacterial, Anti-Fungal Lipopeptides and Plant Growth

Why Choose Serenade ASO over others

QST 713 is unique and different from other *Bacillus amyloliquefaciens* in type and the amount of biological chemistry it can produce, as well as its ability to colonize roots.

It is a stable product (2-year shelf life for liquid formulation, similar to conventional

Group Photo of all those who attended

Bayer E.A Ltd Agronomists discussing Bayer Floriculture solutions with Growers

Mr. Joseph Kibaki of Bayer East Africa Ltd

crop protection products and for Dry formulations it offers a technical shelf life of up to (5) five years).

Production: It is same quality standards as chemical crop protection products. It has controlled fermentation process results in a consistent product, containing a standardized viable spore count.

Fungicide with three classes of lipopeptides and higher relative volume vs. competitors

Three classes of lipopeptides in Serenade is a proven synergistic combination. It has higher relative volume of lipopeptides compared to competitors. Serenade has better fungal effects than competitor bacillus based products

Support

Mr. Kiptarus was ably supported by Mr. Joseph Kibaki who took growers through Resistance Management, Thomas Mutuma who took them through the trials and Positioning of Serenade ASO in grower programs for the management of Powdery Mildew. Mr. Kiptarus also took growers through a well-run panel discussions with growers discussing with Bayer Crop science and ICIPE experts. The launch was preceded by a Nematode presentation by ICIPE scientists.

Parting Shot

Isabellah N Magale, Customer Marketing, thanked them for the day well spent with the Bayer family. She added, Our company will be sensitive to our customers and the public at large, recognizing our duty for upholding the highest degree of professional ethics and code of practice. Today we have given you another top-notch product in addition to our other solutions.

Distribution

According to Bayer the products were available for distribution at Amiran Kenya Ltd and Elgon Kenya whose teams were readily available for orders.

The panelist composed of Bayer East Africa Ltd and ICIPE Teams

A Good Spray Programme

Informing, advising and debating in order to improve the quality productivity of our floriculture sector in the region. That is the aim of *Floriculture Magazine.* With new molecules been registered into the country yearly and the agrochemical market in full swing, growers are taking a renewed interest in crop protection. To quench your thirst on safe and effective use of agrochemicals, meet our professional correspodent. In this issue she has picked a key area and will talk direct to the people who draw spray programs in your farms.

Briefly discuss the choice of a good, safe and effective insecticide in a spray program.

Be sure to use suitable chemicals rather than just familiar ones. When choosing a chemical several factors are important – not just price alone. Is it effective against that pest/disease? Its mode of action? WHO classification? MPS/Kenya flower council coding? Will the with-holding period or other safety issues fit with your harvesting schedule? Can it cause any damage to the crop? Will it kill beneficial insects you are trying to protect? Do you know how to use the chemical to its full effectiveness? Do you have the right equipment and application methods for that chemical? Is it legal to use it on your crop?

How do you handle the different chemical groups?

Rotate products basing on chemical group / target sites in case in the same chemical group but no cross resistance known. Check with FRAC /IRAC the comments on resistance (High, medium or Low resistance risk). Rotation of the Chemical Groups should be done every 2-3 sprays. This will manage the threat of insecticide resistance. These procedures will help to reduce the risk of increasing the level of resistant insects in the pest populations. You must have a chemical group rotation plan which you must follow religiously. You must also ensure that the chemical is correctly mixed and used under the right conditions (additives (+/-), temperature, pest threshold level etc.). When spraying, Make sure that you get good coverage to get the maximum kill and do not spray more often than you need to. Spray interval range from 3-7 days depending on the level of infection and infestation which is a function of weather.

When do you spray?

The grower must spray when Pest/Disease pressure is not too high. In this case, you must follow all requirements of effective insecticide application, taking careful note of the different application requirements of some chemicals. Crop monitoring and insect scouting will inform you when the pests have reached a level where spraying is required. To reap maximum profit, the grower must follow the requirements of effective insecticide application. The grower must select an insecticide from the right chemical group according to the chemical rotation plan.

When spraying one should follow all important legal and safety requirements (e.g. protective gear, re-entry time and with-holding period from spray to next pick).

For maximum benefits the grower should examine and closely follow all guidelines for effective use of the chemical (e.g. use of a wetting agent if required, avoidance of high temperatures etc.), ensure mixing of the correct rate and volume for the crop and pest. One should avoid using any other additives in the tank mix unless certain that it is a safe and effective combination. Application must be done promptly and at the best time of day for a good kill - usually morning or late afternoon. Head of sprays must check pH of the mixture before adding the chemical to make sure it is between 6.0 and 8.0 (6.5 is best) and also find out how long it should take the chemical to work (minutes or days).

The grower must apply the chemical to achieve good coverage by making sure the spray equipment is calibrated to deliver the correct volume for the crop area and growth stage and that the jets and pressure setting are delivering the right droplet size and penetration to get good coverage The movement of the spray nozzles must achieve good coverage from top to bottom, between plants and under leaves. The sprayer must avoid run off with most chemicals as this often leads to leaf burn and can actually leave less chemical on the leaf for insects! General rule is from 6.30 to 10 am and 2 to 3.30 pm depending on the weather condition. Make sure there is ample time for crop foliage to dry before night to avoid outbreak of foliar diseases. Thrips ,caterpillars,aphids should be sprayed between 8-10.30 when they are active.

What should I consider when spraying?

Grower must take into consideration the weather Pattern. Disease /Pest Cycles are a times linked to the ecological prevailing weather conditions. Incorporation of protective measures is a key factor to delay or lower the Disease/Insect pressures. Cultural Practices should also be incorporated like proper Hygiene, crop rotation etc. Target pest/disease and Spray Volume is a key factor. Spray volume/Crop canopy ie: 3000lit mites, 1500lit Powdery Mildew, 800lit Botrytis,1500lit Downy Mildew, Insects 2000-2500lit/Ha. The grower should also consider drift effect. In case you are spraying Herbicides make sure that the adjacent crops are safe to avoid damage.

What precautions should I take after spraying?

The grower must check plants after spraying to confirm the effectiveness of the spray application. This is done by comparing before and after spray pest numbers. You also need to check fruit, leaves and flowers for a comparison of pest numbers in 1-3 days depending on how long the chemical takes to work. Then finally check sticky traps twice over the next week for pest build up (at 2 and 5 days). Re-entry interval is also a key element.

Chrysal's Open Day 2022

Floriculture Magazine was privileged to have an exclusivea tete-a-tete with Chrysal's Commercial Manager East Africa Redbad Verduijn during Chrysal's Open day this year.

Briefly discuss Chrysal East Africa Ltd?

Redbad: Chrysal Africa is the regional entity and representation for one of the leading post-harvest and flower food providers in the world. Chrysal international is a Dutch based company with a great track record in the flower industry, that is since a couple of years part of the Japanese OAT Agro group.

The Aim of the company is to have the best products with an unparalleled service level. Our regional office is located in Nairobi, close to the airport, where we also have a production facility to produce our sachets & post-harvest products. Our work force is made up of 50 employees. This team is dedicated to deliver great products with the best possible service.

Recently you had an open day, briefly discuss it (expectation, number of days, what was showcased or discussed)

Redbad: The open day was held on Friday 20th May, 2022 whereby growers and other partners were invited to learn more about our products and meet team members. It was an initiative by the newly appointed General Manager -Niels van Doorn to have this event and invest in relationships.

Next to showcasing our products and

Redbad Verduijn, Chrysal's Commercial Manager, East Africa

solutions in general, the day focused on the Sea Freight development and the crucial role Chrysal Africa plays in the treatment of flowers for any sea freight journey ("Chrysal Services"). To that matter, different presentations held to show three elements; *sea freight developments in other markets (being South-America), the sea-freight developments in the East-African market and an introduction to some pre-harvest initiatives.*

Did you attain your aim (attendance, business)

Redbad: On this first ever open day, close to 100 individuals attended and enjoyed the presentations, meeting our team and buffet lunch. The feedback on the day was very positive, especially the opportunity to have face-to-face meetings with the Chrysal people. And of course, we had good discussions on actual concerns at the farms and how Chrysal can support.

Are we expecting more open days?

Redbad: Although it's not planned yet, we expect to have an open day again next year, perhaps in a different form. Foreseen is to have an agenda for the day that fits with the topics at hand then.

Discuss your products and services to the flower sector

Redbad: We support both growers and customers with the best treatment to get the highest quality of flowers from farm to consumer. Therefore, we work together with the flower growers to achieve the best results in post-harvest. More recently, we've been developing products for pre-harvest, and this is something that will grow in the future.

Next to that we help growers shipping flowers by sea with our Chrysal Services model, providing the best possible botrytis treatment and monitoring of the (quality) processes, but also to fulfil our sustainable need to lowering carbon footprint by reducing waste due to botrytis and high emissions from airfreight.

CHRYSAL SERVICES

by Chrysal Africa

ROSE DIP SERVICE

Products
four ingredients

Service
product preparation, training & monitoring

Equipment
dipping stands, buckets, PPE

SEA FREIGHT SERVICE

Products
four ingredients, anti-ethylene treatment, packing liner

Service
product preparation, training & monitoring, quality checks, weekly auditoring of sea freight process

Equipment
dipping stands, buckets, PPE, temperature, pH and EC meters

Long storage service
more flexibility with volumes and react to market conditions

Chain support
building sustainable partnerships between growers, shippers and buyers

TECHNICAL CONSULTING

Data reporting
parameters, quality improvements

Service
free of charge help to improve process & overall quality

Keeps your roses Botrytis free • Enhances colours • Prolongs vase life

Chrysal Rose Dip is the only registered anti-Botrytis product, making it safe to use and up to 95% effective against Botrytis

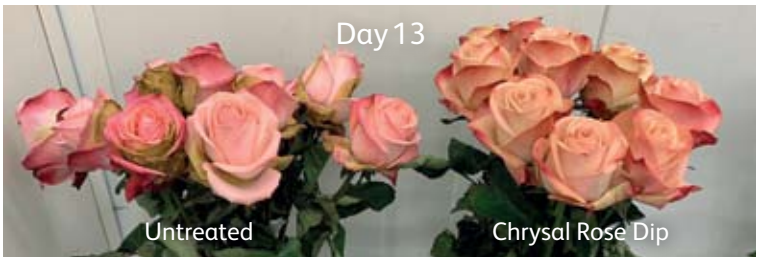
Would you like to have better quality flowers and increase profit?

Chrysal Services

In June 2019 Chrysal Africa launched an anti-Botrytis treatment for roses: the innovative Chrysal Rose Dip Service, which has since grown to become the leading premium anti-Botrytis treatment in Kenya. This service is an unique concept, that provides the perfect solution to the problem of Botrytis losses. Rose Dip is extremely effective against Botrytis and helps growers to keep their beautiful roses fresh for longer, full of colour and free of Botrytis. We offer an unique, tailor made service that fits seamlessly, ensuring that they understand the importance of the process as well as how to recognize Botrytis related issues.

Chrysal Rose Dip

Botrytis cinerea (grey mould) is a fungus which causes a loss of quality in flowers like Rose, Chrysanthemum, Gerbera and Lisianthus. The place of origin, season, hygiene during processing and storage, weather conditions and climate control play important roles in the appearance and development of Botrytis. The fungus thrives on both living and dead plant materials. The infection starts when miniscule mould spores, spread through the air. Starting as a small speck ('pock') on the flower petals, it spreads right to the bottom of the flower.



It gradually changes its colour to brown and becomes moist and finally makes the petals fall off. Unfortunately, Botrytis is an irreversible condition. Whilst infected flower petals are often removed by hand, there can be no guarantees that the fungal infection has not already damaged the rest of the petals.

CHRYSAL

For more info please contact us at: info@chrysal.co.ke

ICIPE Joins Bayer East Africa to Discuss Nematodes with Growers.

Dr. Solveig Haukeland of ICIPE

By Mary Mwende Mbithi

Nathan A. Cobb, the father of American nematology, in a 1915 quote describes the tremendous ubiquity of nematodes on our planet and says "If all the matter in the universe except the nematodes were swept away, our world would still be dimly recognizable ... we should find its mountains, hills, vales, rivers, lakes, and oceans represented by a film of nematodes. The location of towns would be decipherable, since for every massing of human beings, there would be a corresponding massing of certain nematodes. Trees would still stand in ghostly rows representing our streets and highways."

Nematodes are found nearly everywhere, both on land and in the sea. The word 'nematode' is derived from the Greek, *'nema'* meaning 'thread' and *'odes'* meaning 'resembling'.

A growers' day organized by Bayer East Africa at Interplant Roses in Naivasha had a load of informative sessions for the farmers. This particular day International Centre of Insect Physiology and Ecology, *(icipe*) took the opportunity to educate the growers on nematodes. Dr. Danny Coyne and Dr. Solveig Haukeland of *icipe* eloquently and meticulously tackled the nematodes topic.

During the open day training, growers were taken through the importance of soil heath. By use of a microscope, they were shown different soil components and how to identify nematodes. In addition, they were explained the different types of nematodes and their importance or dangers to growers.

What are Nematodes?

"Nematodes are tiny microscopic worms comprising diverse trophic groups such as plant feeders, bacterial and fungal feeders as well as animal parasites. They are found worldwide in most habitats (such as soil, water, sea and in plants and animals), paused Dr Danny Coyne.

"At *ICIPE* we work with nematodes in soil. Most nematodes in soil are beneficial and play an important role in nutrient cycling, and others play a role in suppressing insect populations. A few species however are detrimental to plant health. Soil nematodes include; Bactivore, Fungivore, plant parasitic and predatory." Continued Dr. Danny Coyne.

"Plant parasitic nematodes, microscopic soil dwelling worms, are among the most widespread and economically important crop pests globally. These pests infect plant roots causing direct yield loss by preventing adequate water and nutrient uptake by the plant. In addition, nematodes inflict indirect damage to plants due to secondary fungal or bacterial infections transmitted through wounds that arise after the pests feed on plant roots." He continued.

Crisis brought about by Nematodes.

"Root-knot nematodes (RKNs), are seriuos plant parasitic nematodes that parasitize nearly

every species of higher plants including flowers and high value vegetable crops. In Africa, crop production losses of up to 100% are encountered especially by small holder farmers." Said Dr. Solveig.

"Root-knot nematodes obtain their name from their ability to infect and cause galls (swellings or knots) in their host plants. The nematodes feed and develop in the galls, in the process impeding nutrient and water uptake by the host plant resulting in poor growth and crop yield. Additionally, such damage increases the severity of opportunistic infections from other soil pathogens." She continued.

"Several methods, including crop rotation, use of resistant cultivars, biological control and nematicides are used to control root-knot nematodes", Added Dr. Solveig Haukeland.

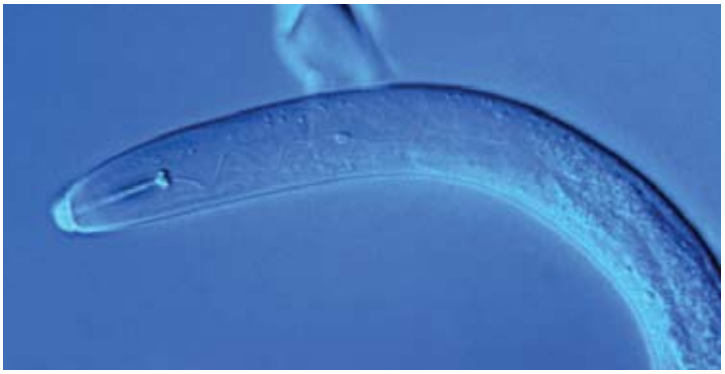
Nematode management

According to Dr. Solveig Haukeland, management of nematodes entails; Reducing infestation to non-injurious level, using different strategies (IPM), sustainably considering environmental & human health.

"Management options include; prevention, resistance, cultural management, chemical and biological control. Farmers are also to use clean planting material. Hot water treatment has also used in bananas (you dip banana suckers in boiling water for 30 seconds)." Said Dr. Soulveig Haukeland.

Avoid spreading nematodes

It is advisable to disinfect/wash agricultural tools, tractor/vehicle tyres, boots, planting, propagation material etc. In addition, you should watch out for nematodes in irrigation water.



(LEFT), ICIPE scientists attending to Growers, (UP), A Nematode

Resistance, Tolerance, Susceptibility

Resistance: This is the ability to restrict/ prevent nematodes multiplication on plants

Tolerance: This is the ability of plants to grow well despite the multiplication of nematodes

Susceptible: Inability of plants to restrict growth and/or development of nematode

Resistance

This is very effective and environmentally safe, useful and (relatively) cheap and prevents nematode reproduction. However, it takes years to develop (in general). Resistance can be broken under certain conditions and selection of virulent nematode population.

Bio fumigation and Organic amendments: Farmers are advised to disinfect manure, insect frass (chitin), and neem cake and brassica waste.

Bionematicides: When the population is not very high, it is advisable to use bionematicides. The main bionematicides are neem products, plant extracts and garlic.

Nematicides: Farmers are advised to use chemicals which are effective and best when Initial nematode population is high. It is also advisable to use for valuable crops because they offer quick result is warranted

Parting Shot

Growers were advised to know the nematodes status of their farms. In addition IPM was recommended and where necessary nematicides. Dr. Danny Coyne and Dr. Solveig Haukeland asked growers to be free and discuss with them on soil health challenges or any symptoms they do not understand in their farms for assistance. Mr. Koome of Bayer East Africa thanked them for their presentations and challenged growers to use their knowledge.

Harnessing the Power of Nature to Manage Pests and Diseases

Today, more than ever, the agricultural sector is feeling the pressure of emerging pests and diseases. Intensive international movement of plant material, fruit, vegetables and ornamental plants contribute to this. Moreover, many of the previous known pathogens and insect pests have also become more resilient and resistant to chemical pesticides. A shrinking pool of available chemicals, coupled with few new entrants, means that growers are heavily burdened.

Where we are as Kenyan growers

Kenyan cut-flower growers have in the recent years adopted biological control and integrated pest management (IPM). In spite of this achievement, growers still have to contend with less success in using the same approach to control emerging pests. To date, IPM has focused on insect pests and not on common diseases such as powdery mildew, downy mildew and botrytis. To add insult to injury, more and more bacterial and viral infections are occurring in crops and as a response to this, growers are frequently resorting to disinfectants.

The disadvantage of disinfectants and chemical pesticides is that in many cases they are only effective for a short period. Often, only part of the population of the pathogen is killed, and/or the pathogen develops resistance. Since the very practice of monocropping sometimes necessities the intensive use of chemical pesticides, is there a better way of working around this situation while still producing healthy crops as a grower?

Employing nature as the first line of defence

If you look in the wild, you will see that most plants grow splendidly and look healthier than managed agricultural fields. In one study, researchers established that most wild plants have viruses, yet they don't have any of the symptoms that we usually see in crop plants with viruses. Professor Marilyn Roossinck who examined more than 7,000 individual plants for viruses, noted one interesting phenomena in Costa Rica. One plant virus that was found frequently in the forest was also found in nearby melon crops. In the melons it was causing severe disease, while in the wild plants there were no symptoms. The most pertinent question remains, how do wild plants avoid disease? and perhaps most importantly, is there is a

Powdery Mildew

way this can be used in agriculture?

This mystery has just began to be revealed to us. One of the most consistent pointers is the fact that in natural environments, the ecosystem is abundant with a wide array of microbes which include viruses, fungi and bacteria. On the other hand, in conventional cropping systems we are consistently trying to eliminate these microbes. There is a great diversity of micro-organisms to be found around the roots of a plant, and each has a specific role within the growth medium. Bacteria, fungi and protozoa (single-cell organisms) live around and interact with the plant's roots. This is called the soil food web. A well-balanced soil food web makes an important contribution to the health of plants. Good micro-organisms provide the plant with the necessary nutrients and disease-suppressant elements.

In addition to processing organic matter, active fungi and bacteria can produce substances that suppress pathogens, but also plant hormone-like substances that influence plant growth positively. All kinds of nematodes can be found in the soil, fungal feeders, bacterial feeders and other nematode-eaters. Only a few harmful species eat plant roots. Nematodes play an important role in the regulation of the populations of other organisms, and in the nutritive balance in the root zone.

Finally, other important organisms are the protozoa which eat bacteria. Their excreta is also

rich in nutrients which are very easily absorbed by the plant. Based on this understanding, it is easy to see why the soil food web should be maintained in balance. Plant roots communicate (signal) their environment by excreting exudates that feed the microorganisms in the root. In return, the microorganisms release nutrients, growth compounds and disease supressing compounds.

From control to adaptation

The most sure-fire way to create and sustain the soil food web in our commercial crops is to employ a different approach that focuses on the whole system rather than solutions to individual problems as far as pests and diseases control are concerned. That means changing our mind set from the need to control individual pests and diseases in crops, to adapting our crops to thrive better. This is something we can influence with the right products -not used in isolation, but combined to form a complete system.

The `whole system approach' should include:

1. Addition of beneficial organisms with proven value.
2. Increasing biodiversity in the plant zone.
3. Avoiding obstacles that hinder the development of a balanced soil food web especially use of harmful chemical pesticides, disinfectants and unfavourable abiotic conditions such as excess moisture and temperatures.
4. Feeding of the beneficial organisms in the root zone with the right bio-stimulants to support plant growth.
5. Use of plant-compatible amino acids and other bio-stimulants to encourage and support plant metabolism and finally, analysis of the soil food web in order to understand the status of various microorganisms in terms of their identity and activity.

Healthy plants -the security of every grower

The possibility of growing profitable crops using less fertilizer and pesticides can be a reality for every grower who is willing to start with this resilient cultivation. A healthy plant with good resistance levels is less susceptible to diseases such as Pythium, Fusarium, various mildews and Botrytis. Ultimately, this guarantees operational security, greater yields of high quality, sustainable cultivation, and food safety.

New Impulses

Around the Sustainable Production and Marketing of Plants

"It's great to feel IPM again," were the welcoming words of Messe Essen CEO Oliver P. Kuhrt at the Trade Congress at IPM Summer Edition. The side event marked the start of the summer edition of the IPM ESSEN International Plant Fair on 13 and 14 June 2022 at Messe Essen. The meeting place for the green sector counted over 230 exhibitors and 1,800 trade visitors. In two exhibition halls, the focus was on innovative products and services in the areas of plants, technology, floristry, and equipment. The extensive supporting program invited visitors to exchange ideas and network. Key topics were peat reduction, environmentally friendly packaging, and marketing strategies.

"The many discussions at the stands, the lively participation in the supporting program, and the uniquely good atmosphere have made it clear how much the sector wanted a platform after such a long time without IPM ESSEN," summed up Sabina Großkreuz, Senior Vice President Marketing at Messe Essen. "We are delighted with the good response and are looking forward with anticipation to IPM ESSEN 2023".

New products and innovations

In Halls 7 and 8, the trade visitors were able to discover numerous new products from the 232 exhibitors from 21 nations and use the pleasant, fair atmosphere for further discussions. Plant varieties for beds and balconies, green indoor plants, perennials, and woody plants were just as much a part of the range as horticultural technology, shop fittings, and products for the floral retail trade. Sustainability topics played the main role: from pots made of biodegradable or recycled material to insect-friendly and heat tolerant plants to peat-free soils and efficient technology.

Peter Hölzer, Sales Manager Germany at Birchmeier Sprühtechnik AG, was satisfied with the trade fair participation: "Our expectations for the IPM Summer Edition were exceeded. The visitors – including many producers and garden centers – were very interested in our sprayers, and we were able to hold intensive discussions. It was the right decision to participate in the fair. The positive response is our motivation for IPM ESSEN in January 2023."

IPM Discovery Center and digital showroom

Trade visitors found inspiration, trends, and marketing tips in particular at the IPM Discovery Center in Hall 7. Creative Director Romeo Sommers staged the exhibitors' products in coherent POS concepts and guided visitors through the presentation in tours. Garry Grüber, Managing Director, Cultivaris GmbH, was one of the exhibitors: "The concept of the IPM Discovery Center was ideal for presenting our plants with little effort but great effect. I was very busy every day, and the quality of the discussions was right. Moreover, it was very gratifying to

see the many colleagues again after such a long time without a fair. My conclusion: a small but fine fair, of which I am pleasantly surprised."

The affiliated Speakers' Corner also provided new insights and highlighted aspects such as dealing with price increases, online marketing tools, and current trend messages. Even after the fair, those interested can discover the IPM Discovery Center on the IPM Summer Edition website in the digital showroom. Touch points lead to the products, ranges, and exhibitors.

Supporting program with added value

The trade congress "Think, Say, Do - A look at our industry world of tomorrow" provided much new food for thought. At the invitation of the North Rhine-Westphalia Horticultural Association, the Association of German Flower Wholesale and Import Trade - BGI, Landgard, and IPM ESSEN, the congress participants learned about the current market situation, peat substitutes, transport packaging, and marketing trends.

The trade visitors found creative and practical ideas for the specialist retail trade as well as floristry accessories in the FDF World. There, the Federal Trade Association of German Florists (FDF) provided an overview of current floristry topics.

The themed tours through the Grugapark also scored points with the trade visitors. The date of the fair made it possible to experience the popular green space in its colorful splendor of blossoms and leaves.

The Grugapark was also the venue for the IPM Summer Edition Party on the evening of the first day of the fair. The rousing show band "Goodfellas" ensured a festive mood among the invited guests.

Save the date

"With the end of the IPM Summer Edition, the preparations for IPM ESSEN 2023 begin. Many things that have now been initiated will be continued, expanded, and presented to an even more international audience at IPM ESSEN 2023", Andrea Hölker, Project Manager of IPM, gives an outlook. The next world's leading trade fair for horticulture, IPM ESSEN, will take place as usual at the beginning of next year, from 24 to 27 January 2023, at Messe Essen.

A Word From Dick van Raamsdonk

The Ninth edition of the International Flower Trade Expo (IFTEX) Nairobi took place on May 3oth –June 1st, at the Visa Oshwal Centre, Westlands, Nairobi. Below is a chat with Dick van Raamsdonk, President HPP, and the organizer of the event;

After staging eight consecutive IFTEX exhibitions in Nairobi, you were happy with the outcome, one of the reasons why even after two years of absence due to Covid the event is back this year. What would you attribute this success to considering you indicated earlier shows exceeded expectations?

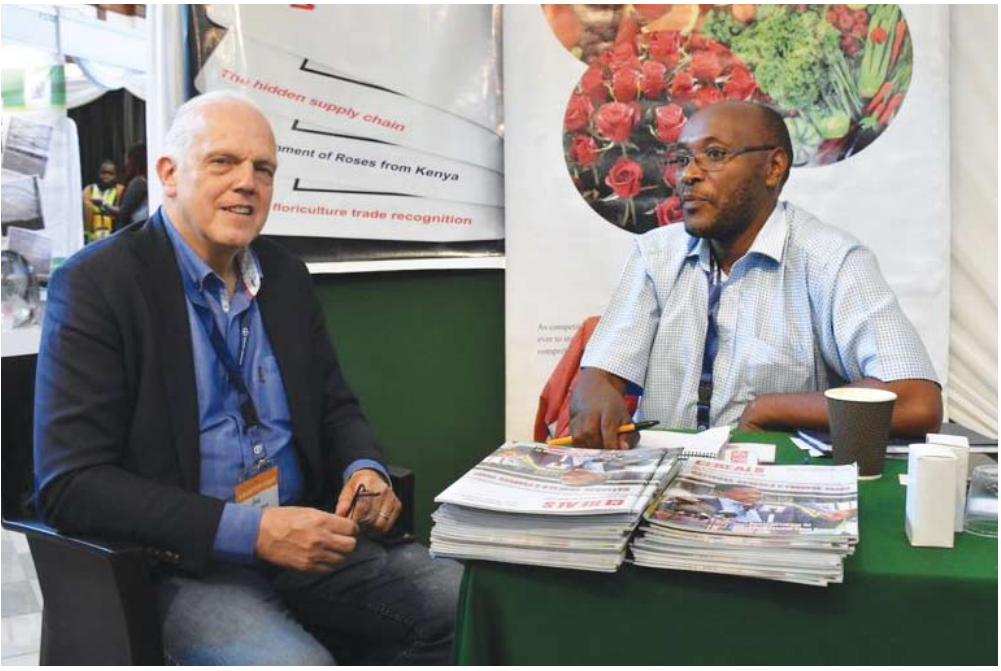
The fact that Kenya is the only country in the world where the production area of flowers structurally increases is a strong indicator that the sector -overall- is in a good shape. Moreover, growth in a worldwide economic turmoil shows that the sector has to row against the stream and still moves forward. This cannot mean anything different than strength for even more growth when coming into calm waters. Therefore IFTEX is an excellent instrument for the Kenyan floriculture Industry to support and accelerate this growth.

What was your most 'unexpected' occurrence at the show, e.g. looking at the your list, did you expect a smaller number?

Yes, I did expect a lower number of exhibitors. But I was 100% confident that this trade fair could not fail and would be a "full house". The only big unknown factor was how to convince the Kenyan growers that this would work if they just would believe in it. Never before in my 36 years career of organising flower trade expos anywhere else in the world, I had so many excellent building parts in my hand to create the almost 'perfect' flower trade exhibition, I am even tempted to call it.

Being a flower trade expo specialist, I got very excited the moment I added it all up and suddenly visualized the ideal place for an African flower trade expo could, would and should be Kenya and Kenya only. However, I was still waiting for the greenlight from the government which did not come until March. I then decided to hold as many meetings with the growers and other

Dick van Raamsdonk, President HPP



Dick van Raamsdonk, President HPP with Floriculture Editor, Mr. Masila Kanyingi

stakeholders as needed until they would be convinced to give it a try and take a booth after covid. It was somehow still unexpected though I finally managed to get enough on board. Even though it was the first time for such event in Kenya after covid.

Do you expect a bigger IFTEX 2023? Why, if yes?

Yes, IFTEX will definitely grow in its tenth edition next year. We will be going back to normal. Am thinking of an extra space down in the parking. Not only because of many more Kenyan growers who want to exhibit, but also some exhibitors wanting to display in bigger stands.

Furthermore, IFTEX is bound to become a regional event, hosting growers from other African flower producing countries that are too small on its own to hold such event. And as already mentioned, I expect IFTEX to become the Africa's flower grower trade fair, becoming the sourcing market for the world for any African fresh cut flowers.

What can you single out as the most outstanding feature of IFTEX Nairobi in terms of exhibitions and visitors?

The only event where you can meet all flower growers at the same time and place, together with buyers.

When you first spoke on IFTEX Nairobi, you said it had potential to grow into the largest flower fair in the world. What are the other big events in the world, and why do you foresee Kenya beating them in days ahead.

Other big cut flowers trade events are in Ecuador, Colombia, Germany and Holland. Kenya will soon join this list and become a serious competitor for the number one position. Compare it if you like with the European Cup, South American and the now strong African cup.

Can you point one good example of something that has happened because of the fair?

I have received a positive feedback; above expectations and the most important outcome was confidence in the future of this fair. There will be many new international exhibitors as well signing up for this year. Furthermore most, if not all previous exhibitors will be present again next year with, in many occasions, bigger sized stands. The most important thing that could have happened in the fair and which actually did happen is the change from doubt in belief that flower buyers did fly in and did attend the expo at a time like now.

What was new in 2022 that was not there in 2019?

The 'only' thing that was new is: an event against all odds!!! I risked though I did minimal marketing. This year we have missed the Russian buyers. But we have more buyers from Middle East, Australia and Europe. These have compensated the Russians.

How do you rate Kenya Compared to other Exhibitions you organise?

You cannot compare IFTEX to the Holland Exhibition. In Kenya you have growers and bring buyers. In Holland you have innovators and bring in growers and buyers, They are completely two worlds apart.

As an investor in Kenya, what is your view on business climate, what are the most challenging encounters, and how would you suggest that things be done differently or improved, especially now that the country is headed to getting a new government that needs to focus on economic development and improved lifestyles for its citizens, visitors and investors?

As an investor you need a stable economic and political environment. Only then an investor is willing to keep on investing, especially foreign investors and then can a country expect more jobs and consequently a better lifestyle for its citizens.

Augusto Solano
Elected President of Union Fleurs

Members of Union Fleurs, the International Flower Trade Association, have elected a new President and Board of Directors on the occasion of the General Assembly held in Essen, Germany on 13 June 2022. The new Union Fleurs Board of Directors will work for the next two years (2022-2024) under the leadership of Augusto Solano, President of Asocolflores, the association of Colombian exporters of cut flowers.

Augusto Solano succeeds outgoing President Richard Fox (Kenya Flower Council, Kenya), who has served on the Union Fleurs Board of Directors since 2008 and held the position of Vice-President from 2014 to 2018 and President since 2018.

Richard Fox was the first representative of a non-European member country to hold the presidency in the 60 years of existence of Union Fleurs. The Board of Directors and members of Union Fleurs are immensely grateful to Richard Fox for his outstanding service and highly valuable contribution to Union Fleurs over the past 14 years and for his achievements in promoting the collective mission of Union Fleurs, as well as for his relentless efforts over the years to secure the continuation of the free trade of floricultural products, particularly between Kenya, the EU and the UK. They also acknowledge his long-standing dedication in promoting socially and environmentally sustainable business practises both in Kenya and globally as representative of the trade on behalf of Union Fleurs on the Board of Directors of FSI, the Floriculture Sustainability Initiative from its inception in 2013 to 2022.

Augusto Solano with Richard Fox

The new President Augusto Solano brings a wealth of international experience and a well-established network in the international flower industry. An industrial engineer by education, Augusto Solano has been appointed President of Asocolflores, the association of Colombian exporters of cut flowers in 2000 and has since then become a prominent ambassador of Colombian flowers and of cross-cutting cooperation within the international flower industry. He is the current chairman of the Board of the Colombian chapter of the World Business Council for Sustainable Development (WBCSD) and represents since 2014 floriculture growers from the Southern Hemisphere in the Board of FSI, the Floriculture Sustainability Initiative. Augusto Solano has represented Asocolflores in Union Fleurs since 2000 and has served on the Union Fleurs Board of Directors since 2014.

Reflecting the global reach of Union Fleurs and its unique position as the representative organisation for the international floricultural trade, the Union Fleurs Board elected for the next 2 years is made of a very international team, with the following representatives:

- Augusto Solano, President (Asocolflores, Colombia)
- Frank Zeiler, Vice-President (BGI, Germany)
- Matthijs Mesken, Chairman of the EU section (VGB, the Netherlands)
- Clement Tulezi, Chairman World Trade Committee (Kenya Flower Council, Kenya), who succeeds Richard Fox in representing Kenya
- Peter Larsen-Ledet, Chairman Pot Plants Committee (Flora Dania, Denmark)
- Paolo di Massa, Relationship Manager (ANCEF, Italy)

They will be supported in their role by Sylvie Mamias, Secretary General of Union Fleurs, who runs the daily operations of the association from its headquarters in Brussels, Belgium.

Union Fleurs and its members extend their congratulations to the new President and new Board of Directors and look forward to their continued contribution in promoting international cooperation in strategic areas of relevance for the international floricultural trade and in addressing ongoing and future challenges for the benefit of the association's members and of the international floriculture supply-chain at large.

Reflecting On The Last 3 Years Of Sustainable Growth

The past two and half years have seen the world grapple with some of the biggest challenges facing humanity in recent times. Kenya and Kenya's floriculture industry was not spared by the effects of the Covid-19 pandemic.

Whilst demand for our products remained strong, after getting over the initial shock of Covid, freight or should I say lack of freight capacity coupled with massive hikes in freight rates, introduction of more stringent taxation, the industry grappling with control of the False Codling Moth (FCM) has made the last period challenging.

Despite these challenges, the industry adapted, as it does and performed remarkably well over the last two and half years.

Looking to the future, the industry is faced with uncertainty on demand for products coupled with massive increase in inputs, continued weakening of the Euro against the US$ all of which is indicating that it is entering a period where the sectors margins will be squeezed.

Importance Of The Floriculture Sector In Kenya

Floriculture remains crucial to Kenya's economy, accounting for more than 70 per cent of the country's foreign exchange earnings from horticulture.

The volume of flowers exports increased from 173 tons in 2021 to 210 tons in 2020, while the value increased from Kshs. 107 billion to Kshs. 110 billion during the same period.

The industry remains one of the largest employers in the country, providing employment primarily in the rural area to approximately 350,000 people directly and many more people indirectly, majority being women.

Mr. Clement Tulezi
CEO KFC

Growers and exporters are proud of the FOSS standard as a significant marketing tool for the Kenyan cut flowers and ornamentals.

Kenya Flower Council

KFC continues to work hard to not only serve its members but also non-members and the sector at large. It's overreaching aim is to create a positive global recognition that Kenya Flowers are produced in a most sustainable manner. In essence, KFC is working to build a strong positive sustainable image to flowers grown in Kenya – the Kenya Flower brand. There is need for all stakeholders to work together to continue to promote a positive brand image around Kenya Flowers. If the Kenya Flower Brand is eroded, it plays against all in the industry.

Sustainability/ FOSS

Kenya Flower Council has increased its efforts on sustainability by supporting Kenyan growers and exporters through its Flowers and Ornamentals Sustainability Standards (FOSS), a globally trusted standard that sits very firmly and for Kenya proudly, central to the FSI basket of standards.

FOSS or KFC Silver as it is more commonly known is recognized as one of the only three internationally benchmarked standards set by the EU-based Floriculture Sustainability Initiative (FSI). FOSS demonstrates sustainable, social, environmental,

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and good agricultural practice benchmarks. The standard fosters sustainability by encouraging commitment to ethical practices, innovation, and promoting equitable trading practices.

KFC's Flowers and Ornamentals Sustainability Standards (FOSS), popularly known Silver and Gold Standard plays a critical role in ensuring sustainable and quality production of flowers in Kenya. The standard, to which all members of KFC must comply, is a trusted standard worldwide. It is one among the few internationally benchmarked standards that demonstrate sustainable social, environmental and good agricultural practice benchmarks set by the EU-based Floriculture Sustainability Initiative (FSI). The standard encourages commitment to ethical practices, innovation and promoting equitable trading practices, thus ensuring that certified producers foster sustainable, responsible and safe production of cut flowers and ornamentals.

Growers and exporters are proud of the FOSS standard as a significant marketing tool for the Kenyan cut flowers and ornamentals. The standard has enhanced the image, brand and competitiveness of the Kenyan flower as it demonstrates that the flowers have been sustainably produced.

FOSS certification entails a robust auditing process which includes making sure that they have minimal or no adverse social and environmental impact or risk along the farmers' production processes. Some of these best practices include water conservation and recycling, efficient use and movement towards green energy, reduction in carbon emissions, reduced use of pesticides and inorganic fertilisers and implementation of projects geared towards protection of flora and fauna.

It also ensures that flower producers are socially responsible by providing terms and conditions of employment, compliant with ILO Conventions. It also guarantees that wages and other remuneration are negotiated every two years between the flower growers and the Union, and availing employees' important social and health and safety needs such as medical services within the workplace, transport to and from the workplace, and training, personal protective equipment among others. Most of the KFC members have gone beyond these requirements and

are contributing through corporate social responsibility activities to their employees and the community with school-fees; crèches for kids, tree planting, and drinking water among many others.

And on governance, FOSS prohibits unethical practice and supports good governance through is ethical and anticorruption requirements that require the producers to monitor their management systems on these vices.

Logistics

On export and logistics of cut flowers, the ubiquitous challenge of freight operations during Covid-19 call for the industry to adapt.

First was the development of Pax Freighters. This was pioneered by Kenya using passenger aircraft for transporting flowers. You will no doubt recall seeing our flower boxes being loaded, box by box onto passenger seats, overhead bins and even in the lavatories.

Every cloud has a silver lining and with the massive hike in cost of air freight the focus is now shifting to the development of finding sea freight solutions. The success and resulting uptake of shifting flowers by sea has been quite remarkable. Kenya is not just the home of the world best flower growers but also home to incredible ingenuity. The development of sea freight is a positive step forwards from a more sustainable and carbon reduction way for the sector.

Future Outlook

With an envious position of having altitude on the equator, Kenya is in a perfect position to be home for the World's Best Flower Growers. The opportunity for future growth and development is waiting. In fact, there is potential for immense growth of the sector. Kenya is a country that does not have mineral wealth, it does however have the ideal location, smart innovative people and a government that is supportive on creating the right frame work for the sector. KFC as a voluntary BMO with the voice of the sector sits central to the future development of the sector.

Why Humidity is Crucial in Climate Control

By manipulating environmental conditions, and paying equal attention to temperature and humidity, greenhouse growers can improve the quality of their crops and maximise yields.

Greenhouse climate control involves optimising the elements to maximise yield at the lowest possible cost, and to do this properly, growers need to understand the effect of vapour pressure deficit (VPD) on plant growth.

VPD, explains Van Rooyen, is the difference between the amount of moisture within a plant's leaves and the air surrounding the plant. It drives various plant processes, such as transpiration, the opening of stomata, and the uptake of carbon dioxide (CO_2) and nutrients.

"By managing respiration rate through VPD, one cannot only optimise plant growth, but ensure that plants stay stress-free and thus healthier. The process further optimises nutrient uptake, resulting in better yields," he says.

Temperature plus humidity

Optimal VPD is achieved through the management of the humidity and temperature in greenhouse or tunnel structures. "When it comes to climate control, growers are normally more focused on temperature than relative humidity, which refers to the amount of water vapour in the air. Humidity, nevertheless, has a much greater impact on plant health and growth than temperature has. Both should therefore be taken into account when using VPD to manipulate plant growth.

It therefore means little to know the temperature in an undercover structure without knowing the humidity levels at that temperature. Unfortunately, there is no ideal VPD setting, as it fluctuates in accordance with relative humidity and temperatures.

You can't measure humidity [levels] and temperatures in January and then set the VPD for the rest of the year, as variations between seasons, day and night, and different phases of plant development all have to be taken into account.

Aside from this, different crops thrive in different VPD ranges, and these also differ from one growth phase to another.

Young plants have a lower stress tolerance than older plants, and therefore function better at lower VPD levels than older plants do.

The goal with VPD, therefore, is to keep it in the sweet spot, depending on the type of crop produced, its stage of development, the temperature and relative humidity.

Broadly speaking, according to Van Rooyen, the recommended VPD for most crops ranges from relative humidity levels of 60% to 80% and temperatures of 18°C to 28°C, with a 10°C difference between day and night temperatures (see table).

VAPOUR PRESSURE DEFICIT RECOMMENDATIONS (kPa)														
Temp.	Relative humidity													
°C	100%	95%	90%	85%	80%	75%	70%	65%	60%	55%	50%	45%	40%	35%
15	0	0,09	0,17	0,26	0,34	0,43	0,51	0,6	0,68	0,77	0,85	0,94	1,02	1,11
16	0	0,09	0,18	0,27	0,36	0,45	0,55	0,64	0,73	0,82	0,91	1,0	1,09	1,18
17	0	0,1	0,19	0,29	0,39	0,48	0,58	0,68	0,77	0,87	0,97	1,06	1,16	1,26
18	0	0,1	0,21	0,31	0,41	0,52	0,62	0,72	0,83	0,93	1,03	1,13	1,24	1,34
19	0	0,11	0,22	0,33	0,44	0,55	0,66	0,77	0,88	0,99	1,10	1,21	1,32	1,43
20	0	0,12	0,23	0,35	0,47	0,58	0,7	0,82	0,93	1,05	1,17	1,29	1,4	1,52
21	0	0,12	0,25	0,37	0,5	0,62	0,75	0,87	0,99	1,12	1,24	1,37	1,49	1,62
22	0	0,13	0,26	0,4	0,53	0,66	0,79	0,92	1,06	1,19	1,32	1,45	1,59	1,72
23	0	0,14	0,28	0,42	0,56	0,7	0,84	0,98	1,12	1,26	1,4	1,54	1,68	1,82
24	0	0,15	0,3	0,45	0,6	0,75	0,89	1,04	1,19	1,34	1,49	1,64	1,79	1,94
25	0	0,16	0,32	0,47	0,63	0,79	0,95	1,11	1,27	1,42	1,58	1,74	1,9	2,06
26	0	0,17	0,34	0,5	0,67	0,84	1,01	1,18	1,34	1,51	1,68	1,85	2,02	2,18
27	0	0,18	0,36	0,53	0,71	0,89	1,07	1,25	1,43	1,6	1,78	1,96	2,14	2,32
28	0	0,19	0,38	0,57	0,76	0,94	1,13	1,32	1,51	1,7	1,89	2,08	2,27	2,46
29	0	0,2	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,0	2,2	2,4	2,6
30	0	0,21	0,42	0,64	0,85	1,06	1,27	1,48	1,7	1,91	2,12	2,33	2,54	2,76
31	0	0,22	0,45	0,67	0,9	1,12	1,35	1,57	1,8	2,02	2,24	2,47	2,69	2,92
32	0	0,24	0,48	0,71	0,95	1,19	1,43	1,66	1,9	2,14	2,38	2,61	2,85	3,09
33	0	0,25	0,5	0,75	1,01	1,26	1,51	1,76	2,01	2,26	2,51	2,76	3,02	3,27
34	0	0,27	0,53	0,8	1,06	1,33	1,59	1,86	2,13	2,39	2,66	2,92	3,19	3,46
35	0	0,28	0,56	0,84	1,12	1,4	1,69	1,97	2,25	2,53	2,81	3,09	3,37	3,65

The exception is cannabis, where humidity levels of 45% to 50% are preferred due to the flowers' high susceptibility to mildew. Another factor that has to be considered is dew point, which relates to the amount of water that air molecules can hold at certain temperatures.

Air molecules hold more water at high temperatures than at low temperatures. Thus, as the air temperature rises, the air can hold more water and its relative humidity (the percentage of water in the air) decreases, and vice versa. Exceeding dew point causes condensation and the release of free water, which, in turn, increases the risk of the development of fungal diseases.

Effects of humidity

Good climate control, specifically the management of humidity levels, goes a long way towards eliminating diseases. For example, high relative humidity at night followed by low relative humidity the next day is associated with powdery mildew outbreaks; while high humidity at night followed by high humidity the next day can lead to downy mildew.

> Young plants have a lower stress tolerance than older plants, and therefore function better at lower VPD levels than older plants do.

You have the same origin of disease, but environmental differences result in different outcomes.

Humidity also influences the uptake of certain nutrients. Calcium and magnesium compete with one another, with the uptake of the former being negatively affected when the humidity level is low and

transpiration high. This can lead to a calcium deficiency and, in effect, diseases such as blossom end rot in tomatoes and peppers.

Climate Control

The ideal would be the ability to manipulate VPD through the use of a computerised system in greenhouses and tunnels that automatically adjusts environmental parameters that influence temperature and relative humidity.

Unfortunately, we're not there yet,. The latest controllers, at best, have a setting to measure VPD or alert growers when the VPD level falls out of a certain range.

Greenhouse design

Tools that a grower can use to manipulate temperature and relative humidity include heating, ventilation, air circulation, cooling and lighting. Nonetheless, everything starts with the design of the greenhouse, which includes the layout, orientation and materials used.

When these are suitable, it is easier to manipulate the ambient factors at a low cost. To illustrate, photoselective plastic can be used to manipulate the light that enters the greenhouse, and in turn this could help to lower or raise temperatures.

Air vents can be opened to trap hot air or allow it to escape from the greenhouse, while 'wet walls' can be used to reduce the temperature of the air as it moves over special cooling pads and also increases humidity.

Mixing air

The mixing of air is important to achieve uniformity, and can be used to raise temperatures when necessary by mixing warm air trapped in the roof with the rest of the air in the greenhouse.

The air can be mixed into the greenhouse via different means, but laminar flow fans are preferable, as used with cooling pads, to turbulent fans.
The latter operate at a far greater air speed, which breaks up the microclimate around the leaves of the plant and results in increased transpiration. This, in turn, raises humidity once more.

"If you're going to use [turbulent] fans, you need to consider their impact on the plants and rather use them over shorter periods," advises Van Rooyen.

Foggers increase humidity levels by releasing fine droplets of water. "The finer the droplets, the better. To prevent fungal problems, the water should evaporate before it reaches the plants."

> "High relative humidity at night followed by low relative humidity the next day is associated with powdery mildew outbreaks; while high humidity at night followed by high humidity the next day can lead to downy mildew.

CELTIC COOLING

25 years of innovative cooling and freezing solutions

COMPANY PROFILE

Celtic cooling was established in 1997 by owner Joost Van Klink. Since then our company developed into professional refrigeration business with an excellent market position and reputation in the sector. We followed our customers abroad and in addition to our modern headquarters in Nieuw-Vennep in the Netherlands, we have four branches worldwide in Kenya, Ethiopia, Ghana and Kazakhstan.

Our Specialties

We have experience in the design and installation of bespoke refrigeration and freezer installations, and air conditioning systems and turkey solutions for every possible purpose. Our customers come from various industrial sectors in the Netherlands as well as abroad. We set great score by building an enduring relationship with our customers and we enjoy anticipating their needs.

Vision

The best installation is an installation that does precisely what it is designed for: it creates the perfect environment for your product. That is what we set out to achieve. We produce energy-efficient and environmentally-friendly installations, and advise you on the right choice of refrigerant, and available subsidies. Our solid foundation comprise of a team of highly trained and enthusiastic employees with extensive experience in the field.

PRE-COOLING

The Ideal Temperature

Produce must be chilled to the ideal storage conditions for the specific product immediately after harvesting and before transport and we are acknowledgeable and experienced in the various pre-cooling options.

Pallet Pre-cooling with a Tarp System

We frequently apply this system to quick-chill several pallets of pre-packaged produce at once. The pallets are placed in double raws in front of a suction wall and the top and front sides of the pallets are covered with a special design tarp curtain. Behind the suction wall is an axial ventilator, drawing chilled air through the pallets at high speed. This ensures that all pallets are evenly chilled to the optimal storage temperature.

Pre-cooling boxes or Crates

Another method for chilling fresh produce quickly and efficiently is to place the produce inside export boxes or crates in front of a suction station, immediately after a harvest. The pre-coolers chill one pile at a time. This method is frequently used on produce such as flowers and fresh vegetables.

Vacuum Chilling

Vacuum chilling is an efficient method of quickly chilling leafy vegetables and flowers to the right temperature. The vacuum pump extracts all the air, allowing evaporation of liquid, quickly bringing the temperature to the required level.

Kenya Flower Council (KFC) and The Netherlands sign a Framework of Cooperation

The signing of the framework of cooperation between Kenya Flower Council and the Embassy of the Kingdom of the Netherlands was to strengthen the efforts in adoption of sea freight for perishables in Kenya.

The Ambassador of the Embassy of the Kingdom of the Netherlands, Mr. Maarten Brouwer and the Chairman of the Kenya Flower Council board Mr. Richard Fernandes signing the framework

Recently the Government of the Netherlands and Kenya Flower Council signed a Framework of Cooperation on adoption of sea freight for perishables in Kenya. The Ambassador of the Embassy of the Kingdom of the Netherlands, Mr. Maarten Brouwer and the Chairman of the Kenya Flower Council board Mr. Richard Fernandes signed this framework during the opening of the International Floriculture Trade Exhibition (IFTEX) at Oshwal Center in Nairobi, Kenya.

The signing of the framework of cooperation between the Kenya Flower Council and the Embassy of the Kingdom of the Netherlands was to strengthen the efforts in adoption of sea freight for perishables in Kenya. To realize this, a fulltime position of an agro-logistics coordinator was developed to coordinate the initiative. The incumbent will be based at Kenya Flower Council for two years.

How will this affect business?

• Cooperation on logistics

The framework of cooperation is a continuation on the cooperation between Kenya and the Netherlands in logistics. This cooperation was emphasized during the April 2022 visit to Kenya by Minister for International Trade and Development Cooperation Ms. Liesje Schreinemacher. Together with Cabinet Secretary of Transport H.E. James Macharia, EGH, they signed a Letter of Intent on the shared ambition to improve the connection of ports through a 'Cool Logistics Corridor' on the 4th of April 2022. Earlier, The Netherlands had commissioned a study to gain insights into the challenges and opportunities of sea freight developments in Kenya and the impact on its agro-sector. The study on sea freight opportunities was to accelerate Kenya's agricultural exports.

• Kenya's global competitiveness

By combining both air and sea transport, Kenya would be well-positioned to become the East-African perishable hub and ready for the future. It is however important to incorporate the supply chain requirements of perishable goods in new infrastructures. For instance, Standard Gauge Railway (SGR), ports, container depots as well as realizing efficient customs clearance procedures of perishable goods leaving Kenya for example. There is know-how and expertise in the Netherlands geared towards achieving this. Within the Framework of Cooperation, the Kenya Flower Council and the Netherlands commit to work on the adoption of sea freight for perishables in Kenya, which will lead to clear benefits for the Kenyan public and private sector. The transition for Kenya to become the East-African perishable hub will not only lead to more jobs (SDG 8), but also to a significant reduction in the carbon footprint (SDG 13).

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
AAA- Flowers-Simba	Roses	Rumuruti	Anil	0758349471	anil@aaagrowers.co.ke
AAA- Flowers -Chui Farm	Roses	Timau	Phanuel Ochunga	07522506026	fanuel.ochunga@aaagrowers.co.ke
AAA-Simba Farm	Roses	Rumuruti	Anil	0758349471	anil@aaagrowers.co.ke
Across Agriculture Ltd	Herbs	-	Emily Chepkemoi	0729080186	chep28@gmail.com
Africalla Kenya Ltd	Cuttings	Eldoret	Meindert	-	meindert@africalla.com
Africa Blooms	Roses	Salgaa	Ramnath Sarbande	0798190511	ramnath.sarbande@xflora.net
Afriscan Kenya Ltd	Hypericum	Naivasha	Charles Mwangi	-	-
Agriflora (K) Ltd		Nakuru, Njoro	Charles Mulemba	0721311279	cmulemba@sianflowers.co.ke
Aquila Development Co	Roses	Naivasha	Prashant Takate	0799356002	gm@aquilaflowers.com
Baraka Roses/ Mumi Flora	Roses	Ngorika	Simon Blinco	0723234927	simon@barakaroses.com
Batian Flowers	Roses	Nanyuki	Rakesh	0724631299	
Beautyline	Flowers	Naivasha	Peter Gathiaka	0721392559	peter@beautyli.com
Big Flowers	Roses	Timau	Gideon Waweru	0721178974	gideon@fontana.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
Bloom Valley	Roses	Salgaa	Ramnath Sarbande	0798190511	ramnath.sarbande@xflora.net
Blooming Dale Roses Kenya Ltd	Roses	Nanyuki	Sunil	0718991182	info@bloomingdaleroses.com
Blooming Africa	-	Gilgil	Bert	0722204309	bert@blooming-innovations.com
Buds and Blooms	Roses	Nakuru	Shivaji Wagh	0720895911	shivaniket@yahoo.com
Carzan (K) Ltd KS	Summer flowers	Salgaa	Stanley Rotich	0721931710	stanley.rotich@marginpar.biz
Carzan (K) Ltd ST	Hypericum, solidago	Sobea	Thaddeus Adung'o	0716019094	thaddeus.adung'o@marginpar.biz
Carzan - Molo	Carnations	Molo	Charles Chelule	0728784081	charles.chelule@marginpar.biz
Charm Flowers	Flowers	Athiriver	Ashok Patel	020 352583	ashki@charnflowers.com
Chestnut	Vegetables	Naromoru	Gabriel Kiai	-	gabriel.kiai@aaagrowers.co.ke
Colour Crops	Hypericum	Nanyuki	Kennedy Wanyama	0716389472	colourcrops@tmu.com
Colour crops	Summer Flowers-	Bahati	Patrick Kipkurui	0727806184	bahati@colourcrops.com
Colour crops	Flowers	Naivasha	Geoffrey Mwaura	0722200972	nva@colourcrops.com
Credible Blooms	Flowers	Rumuruti	Eliud Njenga	0722382859	eliud@pigeonblooms.com
Dale Flora	Roses	Mogotio	Ajay Sutar	0711102266	ajay.sutar24@gmail.com
Desire Flowers	Flowers	Isinya	Rajat Chaohan	0724264653	rajatchaohan@hotmail.com
De ruiters	Breeder Roses	Naivasha	Fred Okinda	0722579204	Fred.okinda@deruiter.com
Double Dutch	Cuttings	-	Pharis Wainaina	0728207661	
Dummen Orange	Flowers Breeders	Naivasha	Bart Engels	0759069896	b.engels@dummenorange.com
Eco Roses	Roses	Salgaa	Madhukar Bhalerao	0799555440	Mbhalerao.eco@btfgroup.com
Elbur flora- kimman	Roses	Nakuru	Daniel Moge	0721734104	kimmanexp@gmail.com
Enkasiti Thika	Flowers	Thika	Tambe Sabaji	0734740202	enkasiti@gmail.com
Equinox	Flowers	Nanyuki	Harry Kruger	0707266956	harry@equinoxflowers.com
Everest Flowers Ltd	Flowers	Mt. Kenya	Victor Kibore	0700416334	-
Everflora Ltd.	Flowers	Thika	Ghanshyam Dusang	0721638005	manager1@everflora.co.ke
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
Fairy Flowers	cutings	Limuru	Kennedy Kamau	0712204894	kenreal07@gmail.com
Fides Kenya Ltd	Cuttings	Embu	Bernard Marindany	0726 366 752	B.Marindany@DummenOrange.com
Finlays- Lemotit	Flowers	Kericho	Japhet Langat	0722 863527	japhet.Langat@finlays.co.ke
Fontana Ltd - Akina farm	Roses	Njoro	Mahendra Patil	0798254199	mahendra@fontana.co.ke
Fontana Ltd - Ayana Farm	Roses	Mau Narok	Osman	0712933710	osman@fontana.co.ke
Flamingo Horticulture Farm	Flowers	Naivasha	Peter Mwangi	0722204505	peter.mwangi@flamingo.net
Flamingo -Kingfisher Farm	Flowers	Naivasha	Elijah Getiro	0722873539	elijah.getiro@dudutech.com
Flamingo - Osprey		Naivasha	Jacob Wanyonyi	0722773560	jacob.wanyonyi@flamingo.net
Flamingo -Siraji Farm	Carnations, Roses	Nanyuki	Peris Muturi	0729050116	Peris.Ndegwa@flamingo.net
Flamingo -Ibis	summer, vegetables	Nanyuki	Margaret Mumbi	-	-
Flamingo Flora	Roses	Njoro	Sam Nyoro	0721993857	s.ivor@flamingoflora.co.ke
Flora ola	Roses	Solai-Nakuru	Lucas Choi	0721832710	lucas.choi@floraola.co.ke
Flora Delight	Summer flowers	Kiambu/ Limuru	Marco	0710802065	marcovansandijk@yahoo.com
Florensis Ltd	Cuttings	Naivasha	Simon Mwangi	0721519470	simon.mwangi@florensis.com
Florenza Ltd	Roses	Solai	Yogeesh	0737453768	farm.florenza@megaspingroup.com

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Fresh Gold Flowers Ltd	Flowers	Mt. Kenya	John Karimi	0721622294	karimi@freshgolgkenya.co.ke
Gatoka Roses	Roses	Thika	Herman Njuguna	0728 854 844	info@gatokaflowers.com
Golden Tulip	Roses	Olkalao	Umesh Choudhery	0739729658	umesh.gftl@btfgroup.com
Groove	Flowers	Naivasha	John Ngoni	0724448601	groovekenya@gmail.com
Hanna Roses Ltd	Roses	Thika	Kadlag Palaji	0723149968	kadlag.paraji@hannaroses.com
Harvest Ltd	Roses	Murungaru	Julius Oloo	0721465853	oloo@harvestflowers.com
Harvest Ltd	Roses	Athiriver	Julius Oloo	0721465853	oloo@harvestflowers.com
Harvest Ltd	Roses	Olkalou	Julius Oloo	0721465853	oloo@harvestflowers.com
Heritage Flowers Ltd	Roses	Rumuruti	Sailesh Kumar	0722203750	hfl.srk@gmail.com
Highland plantations	Cuttings & Herbs	Olkalau			production@highlandplants.co.ke
Imani Flowers	Summer Flowers	Kabarak, 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
Karen Roses	Flowers	Nairobi	Peter Mutinda	0723353414	pmutinda@karenroses.com
Kariki Ltd- Thika	Flowers	Thika	Miriam	0720674307	kariki.production@kariki.biz
Kariki Ltd - Nanyuki	Eryngiums	Nanyuki	Richard Fernandes	062-31023/6	bondet.production@karik.biz
Kariki Ltd - Naivasha	Summer	Naivasha	Esau Onyango	0728606878	hamwe.production@kariki.biz
Kariki Ltd - Molo	Fowers	Molo	James Oluoch	0716333717	jame.oluoch@kariki.biz
Kenflora Limited		Kiambu/ Limuru	Abdul Aleem	0722311468	info@kenfloraa.com
Kentalya	Cuttings	Naivasha	Lynette	0733549773	lynette@kentalya.com
Kikwetu Flowers	Roses	Mt. Kenya	Rathan	0787266007	
Kisima Farm Ltd	Roses	Timau	Craig Oulton	0722205828	craig@kisima.co.ke
Kreative	Roses- Breeders	Naivasha	Bas Smit	0733607755	info@kordes-ea.com
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	Roses	Naivasha	Jagtap Shahaji	0792547633	japtag@vegpro-group.com
Kongoni River Farm - Kongoni	Flowers	Timau	Kadam	0721274413	--
Kongoni River Farm -Bemack	Flowers	Timau	Balasaheb Ingwale	0717181102	balasaheb@vegpro-group.com
Kongoni River Farm - Galaxy	Roses	Naivasha	Chandrakant Bachche	0724639898	chandrakant.bachche@vegpro-group.com
Kongoni River Farm- Longonot	Roses	Naivasha	Ravi Sathe	0715173603	ravi.sathe@vegpro-group.com
Lamorna Ltd	Roses	Naivasha	Mureithi	0722238474	admin@lamornaflowers.com
Lathy Flora & Fairy	-	Kiambu	John Mbaoni	0753888126	info@lathyflora.com
Lauren International	Flowers	Thika	Dilip	0720796629	laurenflowers@accesskenya.co.ke
Laurel Investment	Roses	Olkalou	Ravindra Palshikar	0740569286	ravi.lil@btfgroup.com
Livewire	Hypericum	Naivasha	Esau Onyango	0728606878	management@livewire.co.ke
Lolomarik	Roses	Nanyuki	Topper Murry	0715 727991	topper@lolomarik.com
Lobelia	Roses	Timau	Ken Mwiti	0722475785	info@lobelia.co.ke
Maridadi Flowers	Flowers	Naivasha	Jack Kneppers	0733333289	jack@maridadiflowers.com
Maua Agritech	Flowers	Isinya	Kori	115355251	kori@mauaagritech.com
Mau Flora	Roses	Nakuru, Turi	Manju	0748254171	manju@mauflora.co.ke
Milenium Growers	Summer Flowers	-	Sushant Wankara	0731316000	sushant@marvelgreens.com
Molo Greens	Solidago, carnations	-			
Mt. Elgon Orchards	Roses	Tran Nzoia	Bob Anderson	0735329395,	bob@mtelgon.com
Mt. Kenya Alstromeria	Alstromeria	Meru	Miriam	0716162671	miriam@mountkenyaalstromerialtd
Mzuurie Group	Roses		Andrew Wambua	0724256592	awambua@moloriverroses.co.ke
Mzuurie Flowers - Maji Mazuri	Roses	Moi's Bridge, Eldoret	Mark Juma	0727471034	mjuma@majimazuri.co.ke
Mzuurie Flowers - Molo River Roses	Flowers	Kilelwa	Paula Koros	072241436	pkoross@moloriverroses.co.ke
Mzuurie Flowers - Winchester Farm	Roses	Karen		-	-
Mzuurie Flowers - Winchester Farm	Flowers	Bahati	Joseph Kasoso	0725696509	jkasoso@winchester.co.ke
Nini Farms	Roses	Naivasha	Vijay Bhosale	0702662297	vijay.bhosale@herburgroses.nl
Nirp East Africa	Roses	Naivasha	Danielle Spinks	0702685581	danielles@nirpinternational.com
Ol Njorowa	Roses	Naivasha	Charles Kinyanjui	0723986467	mbegu@olnjorowa.com
Oserian-Bohemian	Flowers	Nakuru	Chakravarthi Yashmith	0786143515	chakra.kuppusamy@oserian.com
Panda Flowers	Roses	Naivasha	-	-	gm@pandaflowers.co.ke
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	James Kiiru	0708124381	tambuzi.sales@tambuzi.co.ke
PJ Dave Flowers	Flowers	Isinya	Pravin Yadav	0708920202	gm@pidave.com

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Pj Dave	Roses	Timau	Ashok Everlyn Ladkat	0702000341	fmrisingsun@pjdave.com
PJ Flora	Roses	Isinya	Santos Kulkarni	0738990521	santosh@pjdaveflora.com
Plantech Kenya Ltd	Propagators	Naivasha	Idan Salvy	0702187105	idan@plantechkenya.com
Porini Flowers	Roses	Molo	Shakti Vanjimuthu	0739676998	shakti@poriniflowers.com
Primarosa Flowers Ltd	Roses	Ol njororok, Nyandarua	Peter G. Njagi	0723575461	opm@primarosaflowers.com
Rain Forest Farmlands Ltd	Roses	Naivasha	Boniface Kiama	0722780811	bkiama@fleurafrica.com
Ravine Roses Flowers	Flowers	Eldama Ravin	Peter Kamuren	0722205657	pkamuren@karenroses.com
Redland Roses	Flowers	Thika	Aldric Spindler	0733609795	aldric@redlandsroses.co.ke
Redwing Flowers	Flowers	Nakuru	Simon Sayer	0722227278	sayer@redwingltd.co.ke
Rift Valley Roses (K) Ltd	Flowers	Naivasha	Peterson Muchiri	0721216026	fm@riftvalleyroses.co.ke
Rimi Flora Ltd	Hypericum	Njoro	Richard Mutua	0722357678	richard@rimiflora.com
Riverdale Blooms Ltd	Flowers	Thika	Antony Mutugi	0202095901	rdale@swiftkenya.com
Roseto	Roses	Salgaa	Aravindra Hirario	07417791483	gm.roseto@megaspingroup.com
Sandpro Growers	Gypsophylla	Meru	Elly Okech	0727580266	elly.okech@sandprogrowers.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
Sojanmi Spring Fields	Roses	Njoro	Senthil	0791184851	senthil.adhikesavan@bidcoafrica.com
Sunripe Farm		Naivasha	Antony	0711827785	naivasha@sunripe.co.ke
Schreus	Roses	Naivasha	Haiko Backer	-	-
Shades Horticulture	Flowers	Isinya	Ashutosh Mishra	0722972018	info@shadeshorticulture.com
Shalima Group (k) Ltd	Flowers	Nairobi	Natarajan	0738 999149	natarajan@eaga.co.ke
Shalimar Shalimar	Flowers	Naivasha	Dinkar Wandhekar	0702418174	dinkar@eaga.co.ke
Shalimar- Kabuku Farm	Flowers	Thika	Mohan Raj	0724265777	kabukufm@eaga.co.ke
shalimar- Mahee Farm	Roses	Olkalou	Natarajan	0738999149	natarajan@eaga.co.ke
Shalimar- Mwanzi Farm	Flowers	Rumuruti	Ram	0797185821	mwanziflowersfm@eaga.co.ke
Sian Flowers - Maasai Flowers	Flowers	Isinya	Nancy Kurgat	0720780322	nkurgat@sianflowers.co.ke
Sian Flowers - Agriflora (K) Ltd	Roses	Nakuru	Charles Mulemba	-	cmulemba@sianroses.co.ke
Sian Flowers - Equator Roses	Roses	Eldoret	Nehemiah Kangogo	0725848910	nkangogo@sianflowers.co.ke
Sierra flora	Roses	Njoro	Oppaso Bandgar	720070053	farm.sierra@megaspingroup.com
Simbi Roses	Roses	Thika	Karue Jefferson	0733771652	simbi@sansora.co.ke
Sirgoek Flowers	Flowers	Eldoret	Andrew Keittany	0725 946429	sirgoek@africaonline.co.ke
Solai Milmet/Tindress	Flowers	Solai, Nakuru	Vinoj J. Kumar	0737801646	solairoses@gmail.com
Sololo Agriculture	-	Eldoret	Andrew Tubei	0722728364	atubei@sianflowers.co.ke
Subati Flowers	Roses	Subukia	Naren Patel	0712 584124	naren@subatiflowers.com
Subati Flowers	Roses	Naivasha	Naren Patel	0712 584124	naren@subatiflowers.com
Subati Flowers (Suera)	Roses	Nyandarua	George Kimathi	0724622638	gkbuuri@gmail.com
Sunfloritech-Blue Sky	Gypsophilla	Naivasha	Patel Sushant	0725622333	info@blueskykenya.com
Sunfloritech -Tulaga	Roses	Naivasha	A Duzai Rajan	0794572232	farmmgr.tulaga@btfgroup.com
Stockman rozen	Roses	Naivasha	Julius Muchiri	0722200890	julius@srk.co.ke
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	Benard Maina	0721860080	tambuzi.sales@tambuzi.co.ke
Terrasol	Cuttings	Limuru	Benard Adwarh	0753444230	adwarh@terrasolkenya.com
Timaflor Ltd	Flowers	Nanyuki	Simon van de Berg	0724443262	info@timaflor.com
Transebel	Flowers	Thika	David Muchiri	0724646810	davidmuchiri@transebel.co.ke
Uhuru Flowers	Flowers	Nanyuki	Ivan Freeman	0713889574	ivan@uhuruflowers.co.ke
Utee Estate	Chrysanthemums	Nairobi	Appaso Mane	0737 513 844	mane.uel@btfgroup.com
United Selections	Roses -Breeder	Ngata, Nakuru	Jeroen Van Marrewijk	700176556	jvanmarrewijk@united-selections.com
V.D.Berg Roses	Flowers	Naivasha	Johan Remeeus	0721868312	johan@roseskenya.com
Valentine Ltd	Roses	Kiambu/Limuru	Joseph Kariuki	0728 093 379	joseph.kariuki@valentinegrowers.com
Van Kleef Kenya Ltd	Roses	Njoro	Judith Zuurbier		roses@vankleef.nl
WAC International	Breeder	Naivasha	Richard Mc Gonnell	0722810968	richard@wac-international.com
Waridi Ltd	Roses	Athi River	-	-	farmmanager@waridi.com
Wildfire	Roses/summer	Naivasha	Patrick Mbugua	0721639306	patrickmbugua@wildfire-flowers.com
Wilfey	Gypsophila/hypericum	Subukia	Sammy Ndung'u	0720467551	-
Wilmar Agro Ltd	Summer Flowers	Thika	Alice Muiruri	0722 321203	alice.muiruri@wilmar.co.ke
Windsor	Roses	Thika	Pradeep Bodumalla	0736 586 059	farm@windsor-flowers.com
Xpressions Flora	Roses	Njoro	Brijesh Patel	0715469732	brijesh.patel@xflora.net
Zena - Asai Farm	Roses	Eldoret	Japhet Chelal	0721770597	japhet.zenaroses@gmail.com
Zena Roses - Sosiani Farm	Roses	Eldoret	Francis Kariuki	0725444515	fkariuki@zenaroses.com

Registration

Demo Farm discussions

Demo Farm discussions

Growers attended at the booths

CIPE Scientists explaining to growers on their Nematodes research

Behind the tent tete-a-tete

Growers asking quetions

CEREALS MAGAZINE

WHEN THE REST ARE SANITIZING AND STAYING AT HOME
YOU ARE BUSY ENSURING THEIR STOMACHS REMAIN FULL

Thank You Farmers

ELGON KENYA
TRANSFORMING FARMS & LIVES THROUGH TECHNOLOGY

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