

JUNE - JULY 2018

# HortiNews

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**ISSUE NO. 53 KSH 300**



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## Ethylene Damage of Flowers Attributes to Upwards of 30% Flower Loss

Flower industry experts estimate as much as 30% of all flower loss is a direct result of ethylene damage, due to either internal or external sources of exposure. Ethylene, an internal gaseous plant hormone, profoundly influences the growth and development of plants. It acts at trace levels throughout the life of the plant by accelerating wilting, regulating the opening of flowers, and the abscission (or shedding) of leaves and flower petals. Ethylene is produced from essentially all parts of higher plants, including leaves, stems, roots, flowers, fruits, tubers, and seedlings. Its production can also be induced by a variety of external aspects such as mechanical bruising or environmental stresses. Flooding, drought, chilling, wounding, and pathogen attack can induce ethylene formation in the plant. Ethylene produced from external sources such as other flowers, banana-ripening rooms in supermarket distribution warehouses, propane heaters, forklift fumes, bacteria, and even cigarette smoke also can have devastating effects on flowers when exposed.

### Cut flower plant responses to ethylene:

- Stimulates leaf and flower biological aging, called "senescence"
- Inhibits stem and shoot growth
- Induces leaf, bud and flower shedding, commonly known as "abscission"
- Stimulates epinasty where the leaf petiole grows out, leaf hangs down and curls into itself
- Induces a rise in respiration in some flowers which causes a release of additional ethylene. This can be the one bad flower in a flower box spoiling the rest phenomenon, affecting the neighboring flowers
- Affects geotropism, the turning or growth movement of the flower stem in response to gravity
- Inhibits stomatal, or pore, closing found in the leaf and stem epidermis that is used for gas exchange, stimulating flower aging



Rose - Flower Aging  
Untreated for Ethylene



Rose - Treated for Ethylene



Orchid - Flower Drop  
Untreated for Ethylene



Orchid - Treated for Ethylene



Carnation - Inward Rolling of Petals  
Untreated for Ethylene



Carnation - Treated for Ethylene

Ethylene will shorten the shelf life of cut flowers and potted plants by accelerating floral senescence and abscission. Flowers and plants that are subjected to stress during shipping, handling, or storage produce ethylene causing a

significant reduction in floral display. Some examples of flower types which are more affected by ethylene damage include rose, orchid, carnation, alstroemeria, stock, delphinium, phlox, and freesia.

Ethylene can cause significant economic losses for florists, markets, suppliers, and growers. Floralife has long been involved in developing ways to inhibit ethylene production in flowers to keep flowers fresher longer, through the commercialized innovation of EthylBloc™ Technology. By inhibiting ethylene sensitivity, flowers don't respond to ethylene produced internally or from external sources, far increasing the quality, freshness, and profits of flowers overall.



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IFTEX organizer Dick van Raamsdonk and Kenya Flower Council CEO Clement Tulezi. Page 42

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**Who is in charge of horticulture as an industry?  
Not by name but by action.**

## Time for handshake among horticulture industry institutions

A recent news article by a local Kenyan daily reported that exporters were staring a notification by the country's biggest buyer, the European Union resulting from some three chemicals flagged as responsible for mass decline of bees - Clothianidin, imidacloprid and thiamethoxam. The three are derived from nicotine that has insecticidal properties. And that is as far as the article went.

To the best of our knowledge, ordinary Farmers know more about names of a pesticide but not the chemical combinations. At the agroveta a farmer will ask for a certain pesticide and the stockist, who probably is more interested in moving his product won't bother beyond offering an alternative if the product in question is not available.

Why are we raising an obvious matter? Going back to the article, the reporter never took time to elaborate which products in the Kenyan market contain the ingredients. To his credit, the reporter gave December as the date the ban on use of the said 'chemicals' would take effect. But it wasn't indicated which these products are and what specific produce would be affected.

"Kenyan journalists report what they think is important, not the true reflection of industry developments," lamented a CEO of one of the sector bodies. Journalists on the other hand say they never know who to contact for information.

Horticulture has two new institutions, the Kenya Horticulture Council (KHC) and The Kenya Fresh Produce Consortium (FPC Kenya). The older ones are the Kenya Flower Council and the Fresh Produce Exporters Association of Kenya (FPEAK).

Speaking separately to the organizations, it is obvious each has its own agenda without coordinated consultation. The oldest of them, FPEAK hasn't been active lately. The KFC on the other hand has its roots deep in the flower sector but growers say lobbying for favourable policies and government support remains a pipedream. KHC and FPC are fairly new therefore not much can be said about them except little has come out of the two since they were launched. Since the Horticultural Crops Development Authority became a department under the Agriculture and Food Authority, nothing is ever heard from that office either.

Our question is, are these organizations working for the industry or are they pursuing competing interests?

At the moment, in addition to the bees chemicals warning, the sector is facing strict requirements from the export markets due to emerging threats like the Fall Army Worm and False Codling Moth.

Exporters on the other hand are expressing trepidation over a number of factors. The long and tedious process to access documents like phytosanitary certificates tops the concerns. This, according to an industry player, is frustrating especially for ordinary growers who have responded to government's call to grow for export.

The Kenya Plant Health Inspectorate Services, KEPHIS, a critical unit in the export business is doing a commendable job. But it has a long way to go in addressing these bottlenecks. KEPHIS should really focus on being a 24-hour one-stop-shop in issuance of certificates.

June is a special month for the horticulture industry as Kenya opens its doors to international buyers visiting the twin shows of IFTEX and the new Fresh Produce Africa. This is a commendable development that could see the country host a continental fresh produce show.

As we welcome guests from over 60 nations to Nairobi, can industry players take advantage of this international gathering, handshake and create a unified industry voice?

We pen off with this simple question; who is in charge of horticulture as an industry? Not by name but by action.

**Catherine Riungu**

**HortiNews** is published six times a year by Karuri Ventures Ltd and circulated to personnel in the horticultural industry, foreign missions and Kenya embassies abroad, extension officers in the Ministry of Agriculture, research officers and suppliers of agricultural inputs and services.

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# From BIG FIVE REDS to BIG FIVE COLOURS

By GUY KEEBLE

**I**FTEX has traditionally been a very popular exhibition to market your products, services and business & the rose breeder De Ruiter recognizes this very important platform with growers & industry professionals all meeting under one roof for three days. In 2017 De Ruiter introduced

its 'BIG FIVE REDS' campaign at both IFTEX & IFTF exhibitions with Rhodos®, Ever Red®, Cupido®, Red Kamala® & Spectre® which was to promote the breeders top five red rose varieties. This year De Ruiter has introduced a bold new concept of 'BIG FIVE COLOURS'; Reds, Yellows, Oranges, Whites & Pinks to complete

the full colour bouquet.

The Big Five campaign is predominantly an African theme, derived from the Big Five animal species, Elephant, Rhino, Lion, Leopard and Cheetah. The new BIG FIVE COLOURS will consist of the following varieties:-

## Yellows

- **Basanti**  
(Premium)
- **Tribute**  
(Retail)
- **Solaire**  
(Retail)
- **Sonrisa**  
(Retail)
- **Sunny Days**  
(Retail)



## Pinks

- **Opala**  
(Premium)
- **Lovely Rhodos**  
(Premium)
- **Wham**  
(Premium)
- **Roslyn**  
(Premium)
- **Pink Rhodos**  
(Premium)



## Oranges

- **Comanche**  
(Retail)
- **Royal Flush**  
(Retail)
- **Orange Crush**  
(Retail)
- **Oranda**  
(Premium)
- **Nassau**  
(Premium)



## Whites

- **Proud**
- **Summit**
- **Miss Blanca**
- **Snow Bliss**
- **Uzuri**



De Ruiter would like to welcome all its business partners to its stand in Hall B. 4, Stand No. 12 & wishes everyone a successful IFTEX show 2018.

# DeRuiter

creating flower business

# INVITATION



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# We are open for business

Two Lakes Flower Park is now up and running with 6 tenants already signed up and room for plenty more. Although the Two Lakes Flower Park is offering bare land for lease, it is also providing a unique offering for the smaller scale business by offering a turn key solution that includes use of Two Lakes Packing Services, one of the existing tenants, to process the stems, central procurement and logistics, agronomy services and Integrated Pest Management via another tenant, Madumbi East Africa. In the future, geothermal heating and carbon dioxide injection will be made available to those tenants that request it. Although titled Two Lakes Flower Park, the development is not limited to only those involved in the growing of flowers.

Oserian Development Company Ltd, one of the largest flower growers and exporters in Kenya has embarked upon a bold plan to diversify its commercial activities.

Consequently, the Farm has been subdivided and Change of use amended to Industrial, Commercial and Residential uses in support of the diversification plans.

Oserian is already a small town in its own right, with over 11,000 people living in its Company funded housing estates and benefitting from the Company funded Creches, Schools, Medical Centre and Social Halls. The new strategy will ultimately see the expansion of these amenities in support of the diversification which will see the creation of an industrial park which will be known as Two Lakes Industrial Park. In addition the company has already created Two Lakes Flower Park and Two Lakes Business Park – both of these are already up and running with tenants in situ.

In order for the business to be better able to focus upon these diversification plans, the company recently contracted out all its flower packing operations and



**Upon completion, the entire Two Lakes project is expected to create 20,000 new jobs**

similarly put all the nonrose crop production on a

Contracted basis. Both providers are also looking to offer their services to the other Companies that are moving into the Flower Business Park.

“Not a single permanent unionisable worker has been retrenched as a result of these strategic changes. Seasonal employees whose contracts expired on 31st March 2018 were released as we reached the end of the ‘Event Season’ and all have already been fully paid off,” said Tim Ndikwe, the Finance Director. Negotiations are ongoing with additional tenants for both the Business Park and the Flower Park and Oserian has already received the first significant expression of interest the Industrial Park. The new developments are in line with the foundations of green energy and creation of agro-processing businesses that are seeking steam and affordable electricity. Upon completion, the entire Two Lakes project is expected to create over 20,000 new jobs.

Agriculture remains part of Oserian’s DNA and in addition to the continued growing of Roses, the Farm is also diversifying into growing other non-flower crops

**Contact Robert Ward, Managing Director, Two Lakes Flower Park, [robert.ward@oseriantwolakes.com](mailto:robert.ward@oseriantwolakes.com)**



## FLOWER PARK

*We are open for business.*



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# NEW VARIETIES 2018



## Hurricane

Undergoing commercial cultivation exclusively by two farms, this is.



## Arisha,

A new pink rose with a stem length of 40-70 cm and production level of 140-180 per M2



## Eleanor

A high-yielding, big-headed variety with a medium-sized stem.



## Karma

A new niche variety with a big head and full opening. It has a bud height of 5-6 cm, stem length of 40-70 cm and produces 160-180 flowers per square-metre



## Volcano

These is a hybrid with a bud height of 5-6 cm, stemlength of 40-70 cm and a production rate of 160-170 flowers per square-metre



## Sunpalace

big-headed, long-stemmed yellow rose with a stem length of 40-70 centimetres. It has a bud height of 5-6 cm and a production rate of 140-180 per square-metre. Trials are taking place in a commercial farm in Holland.



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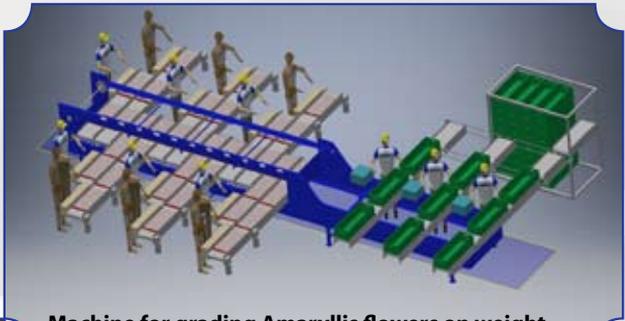
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Rose grading lines at Fontana Farm.

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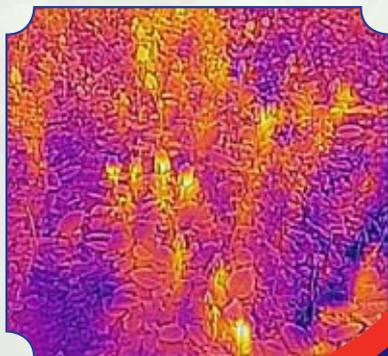
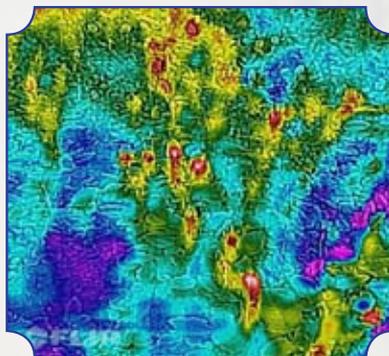
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# United selections opens a new showhouse in Naivasha

One of United Selections main objective has always been ensuring that they present the best-adapted and award-winning cut rose varieties to the market. They achieve this by using test locations all over the world under different climate conditions at various altitudes. It's through this initiative that they have opened a new showhouse in Naivasha where they'll be showing their latest additions to their wide commercial assortment. Most importantly, United Selections will be using this location to focus on low to medium altitude varieties.

United Selections kicked off full operations mid May when they began planting their new varieties.

During this time and prior, they've received overwhelming support from both the staff as well the Flower



The new showhouse location includes United Selections proven assortment

Business Park community where the showhouse is located. But most especially, Panda Flowers, as being the host of this greenhouses.

United Selections project that by July / August this year their showhouse will start flowering and they hold an official opening ceremony sometimes in August where all stakeholders will be invited.

The new showhouse location includes United Selections proven assortment with existing varieties like: Red Torch, Madam Red, Amina, Sugar Love, Galileo and Calgary.

As well as new varieties such as; Cheetah, Wild Cheetah, US-0072R, US-0198R. Below are the highlighted varieties.

## IFTEX & introduction of new product line

United Selections will be presenting their very interesting assortment comprising of the existing as well as new additions at this years IFTEX. You are therefore encouraged to pay them a visit, stand number B4.01. Not last, because during the IFTEX they will officially launch there new product line with spray roses.

After years of trials and tests, they finally introduce a spray assortment that is adaptable to various growing conditions. The new sprays are categorized as follows;

**Blossom Selections:** These are big flowered sprays with 3-10 flowers per stem.

**Classic Selections:** These are the 'traditional' sprays with 5-10 flowers per stem.

**Magical Selections:** These sprays have 'a special opening' with 3-10 flowers per stem.

The examples can be seen in the images below.

At the moment, only a few selected growers are allowed to try this new product line.



US-6012T



Tender Blossoms



US-6020T

# Existing Assortment



Red Torch



Madam Red



Amina



Sugar Love



Galileo



Calgary

# New Assortment



Cheetah



Wild Cheetah



US-0072R



US-0198R



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# Shaping the future of flower packing through the use of an innovative system

By **GEORGE ACHIA**

**T**he future of flower packing is set to change for the better with the introduction of a new innovative packaging system that delivers significant savings in air freight, by packing more flowers per air pallet and improving in general the quality of the product before it arrives at destination.

Developed by Nairobi-based Cargolite, the developers of this innovative technology wanted to meet four principles that would go a long way in improving the transportation of flowers; removing the load from the carton walls, reducing the carton weight, increasing the pack rate and improving the stackability.

“In order to remove the load from the carton wall, each Cargolite carton is equipped with two polypropylene frames and each frame consists

**Panalpina Airflo is part of the global Panalpina Group. In 2016, Panalpina acquired Airflo to gain access to the East African air perishables export sector.**

**With its Perishables Network, the company aims to be the preferred global supplier of perishables logistics by 2020, offering customers in both origin and destination countries complete end-to-end solutions on a global scale. The success factors for this accelerated and concentrated push into perishables are the company's global coverage, dedicated perishables experts in key markets and the unique Panalpina Charter Network.**

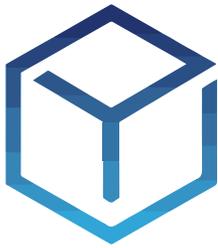
of two vertical columns that are connected to each other with upper and lower laterals. These frames, which are also used to hold the

cartons in a horizontal position, divert the weight of the flowers away from the carton's walls and support each carton separately”, explains Guy Symondson, Cargolite's East Africa representative.

“And with the weight diverted away from the carton's walls, it is not necessary to use heavy five ply boards. In addition, with the frames holding the cartons from collapsing, less packaging materials are required to protect the flowers,” he adds.

As a result, more stems can be packed and the weight of the carton is considerably reduced, which meets the second and third principle. The developer was also able to meet his fourth principle, stack-ability, as the projections of one frame fit into the cavities of the frame above it.

“This makes the boxes on the air pallet very stable and enables the flowers to arrive at their destination without any damage”, he says.



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**After conducting several trials, Oserian is the first farm that started to use the Cargolite concept for their flower shipments**

After many years of trading in cut flowers from many different countries, it was clear to the developer, John Kowarsky, the CEO of Cargolite, that there was an urgent need to improve the packing materials used in transporting cut flowers from one country to another.

Consequently, in 2013, he began to develop the idea of a new packaging concept that would solve the problems of standardization, and the damage to flowers from crushing cartons.

“The solution at the time would always be to increase the strength of the carton, thus increasing the weight of the packing material. This solution incurred extra expense for packing materials and air freight,” explains Guy.

The vision was to create a standardized carton that would avoid the crushing of the cartons at the bottom of the pallet and produce a carton that would weigh less than the regular carton in order to minimize the cost of air freight.

“In 2016, we began supplying the Cargolite carton to IPL and Oserian and the concept has been very successful as all flowers that are sent by Oserian to the auction are

now being transported in Cargolite cartons,” he says, adding that aside from Oserian and IPL, Xpol, Agrotropic and DFG are starting to work with Cargo Lite

Kenyan flower farm Oserian recently started to ship their flowers through this concept, saving the company up to 8000 USD for every 1 million stems transported to Europe.

After conducting several trials, Oserian is the first farm that started to use the Cargolite concept for their flower shipments.

According to Guy, as the farms and logistic players get more experience in working with the Cargolite packaging concept, they expect more farms to join in and begin to use this new and innovative packaging concept.

And unlike regular boxes, which are often stacked densely, the Cargolite frames create a space between the cartons which makes it ideal for the cold air to flow between the boxes. Moreover, Cargolite also has a lower carbon footprint than regular boxes as the cartons require much less paper and the cartons contain more flowers. This according to the developers will enhance the sustainability practice in the flower industry.

Panalpina Airflo is one of the logistics companies based in Nairobi that is handling Cargolite boxes used by growers in transporting their products to their diverse clientele in Europe. The company started the trials for the use of the technology in 2015 to improve the various aspects of flower logistics and transport.

Besides investing in bigger scanners that would fit the vertical frames of Cargolite boxes, the company is now expanding their facilities at Jomo Kenyatta International Airport (JKIA) to accommodate the new technology.

According to Charles Njonjo, the operations manager at Panalpina Airflo, this new packing system has improved their efficiency in handling the flowers.

“We are excited to be among the pioneers to use this technology in our freight services”, says Charles Njonjo.

As one of the freight forwarders currently handling Cargolite, Charles notes that the main advantage of using this new technology is that the cartons are handled much less, only on one touch point when the flowers arrive at the cargo site at JKIA, as compared to three touch points when they used other boxes.



# Keep your Gypsophila beautiful and fresh longer

Starting off with a very small cultivation acreage, Gypsophila as a crop, has gained prominence in Kenya over the last 5 years.

Currently, the crop is being cultivated on an acreage of 180 to 200 ha in Kenya and is still growing. Due to this increase production, Chrysal developed a strategy to support the importance of the crop and therefore decided to develop a post-harvest protocol and solution for this crop. Chrysal GypMix is a new and unique, all-in-one solution to enhance the brightness and whiteness of Gypsophila. Recently conducted trials showed that Gypsophila that are treated with Chrysal GypMix have a better shelf life, bigger and more white flowers.

## Chrysal GypMix

Chrysal GypMix is a combination of two existing Chrysal post-harvest treatment products with the addition of our new enhancer Chrysal OptiGyp. Combining Chrysal RVB Clear, Chrysal AVB and Chrysal OptiGyp will enable an improved percentage of opening of the flowers, increased weight of stems and will keep the flowers beautiful and fresher for up to 20 days. It is the optimal solution in reducing costs of sourcing and wastage. Using the full combination of the Chrysal products gives the best result.



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# Red Lands Roses trailblazes in innovation and green energy



A Redlands Roses worker transports flowers from greenhouses to cold room through cable flower bucket transport system

By **BOB KOIGI**

**M**ore than a year and half since Ruiru based Red Lands Roses Ltd invested in a solar power plant to use renewable source of energy and to cushion itself from runaway electricity costs and intermittent power losses, the farm is now able to save over Sh450,000 on bills every month while ensuring seamless and uninterrupted business operations, in one of the greatest payoffs of investment in solar energy to have ever been realized in the country's floriculture industry.

But that is one of the many green innovations the 28 hectares farm has adopted, making it a trailblazer

in technology in what the owners describe as a business model geared towards cost controlled flower production while embracing the highest levels of quality and meeting the ever-changing customer needs.

"We have been aligning the business to tap into technology because we realize that it is not only cost effective but also allows us to be ahead of the market and built our brand, at a time when the industry has become competitive," said Aldric Spindler the executive director at the farm.

Indeed every operation at the company almost has an innovation aspect, from pest and disease scouting to water purification and harvesting. In fact other Kenyan

growers have been frequenting the farm to learn best practices in growing premium flowers. "The market we serve deserves very high quality flowers and therefore we cannot leave anything to chance. When we are talking about going green and controlling the cost of producing flowers we also must ensure that we are not compromising the quality, team safety and environment protection. So every little detail has to be monitored thoroughly," added Mr. Spindler.

Such details starts from preparation of flower beds which is done with surgical precision including cleaning the pumice or murrum, the medium through which the flowers are grown, ensuring the right PH balance and sterilizing so that no pests are left in the medium. Red Lands Roses was among the first companies in Kenya to go 100 per cent soilless in flower production with full recycling. This has by the way helped them a great deal during this rainy season as even during heavy pour down with rain water flooding into the greenhouses the plants were untouched and diseases kept under control.

"How we prepare the beds and the attention we give to the first stages of flower growing will determine the kind of flowers we will eventually get. Precision is our guiding principle here," said Joseph Otieno a Greenhouse Supervisor at the farm. At the time of conducting this interview, Mr. Otieno was hawk eyed, and kept interrupting our chat as he moved to ensure workers at the beds were using the right substrate, or the first bending of the tender plants was accurate pointing to the attention accorded to the exercise.

The greenhouses that form the

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**Redlands Roses has invested in traceability system to ensure tracking of flower production across the value chain**

nerve of flower production have been automated with vital processes like fertigation, the process of feeding flowers with fertilizer, water and other nutrients, which are coordinated from a central position to ensure maximum uptake and less wastage through 100% recycling.

As the reality of the vagaries of weather hits home bringing with it pests and diseases that thrive in hot or cold conditions, the farm through its fogging system and movable vents in greenhouses controls the inside climate. The foggers automatically spray the water every three to four minutes during hot season. The greenhouses are all built by RICHEL with open/close vent system at the roof, a great help during the rains, enabling a close monitoring of the indoor climate.

To tame pests and diseases the farm has further invested heavily on natural enemies. Through a so called “dudu house”, an organic production unit under plastic tunnels, the farm produces *Phytoseillus persimilis*, one of the most useful biological beneficial insects against Red Spider Mites. At the unit, French beans plants are grown and after being infected by Red Spider Mites, the *Phytoseillus*

*persimilis* is introduced and will feed and multiply on the pests. Every week some 1.2 million of these beneficial insects are harvested and released on the infected spots of roses. The *Phytoseillus* eliminate the Red Spider Mites in days.

“The beauty with this form of biological pest control besides the fact that it is environmentally friendly is that these beneficial pests are able to eliminate the mites in all the stages of their growth as opposed to conventional pesticides where a specific one is only potent to a mite in a specific stage,” said Petterson Muthemba, the IPM and “dudu house” Supervisor.

Then comes the equally sensitive task of moving the flowers. In one of the most elaborate green projects, the company has since 2011 been using a cable flower bucket transport system to move flowers from greenhouses to the cold room. Being among the pioneer farms to embrace this method, the company has since halted motorized system a move that has enhanced the environment protection, logistic easiness of transporting the stems from the greenhouses after harvest to the cold stores. The end result has been improved quality of

flowers since the time they are to be in water is reduced to four minutes.

To tame post-harvest water wastage that eats up into majority of farm’s budgets, Red Lands Roses has been the first to install a modern ultra-filtration purification system that employs a membrane to purify all the water from the farm which allows re usage for harvest water and proper disinfection.

The savings on water and preservative are massive considering the need to frequently change the commodity as cut flowers require feeding on high quality water for shelf-live and sanitation. At the heart of such groundbreaking innovations and world class produce is a workforce that Mr. Spindler says has shaped the course and destiny of the farm. “Our greatest asset in this farm is our staff. We have invested in their trainings and welfare because we strongly believe that they are the engine that oils this company’s growth. It is a nucleus where we rely on each other to steer the company forward and we are proud of the quality of produce we have and the many hands that go into making that possible,” he added.

# Food for thought: the scout decision

**Both greenhouse and outdoor crops are susceptible to many pests and diseases which cause irreversible damage and can lead to serious economic losses**



**The cornerstone of an Integrated Pest Management (IPM) program is scouting or monitoring plants for insects, diseases, weeds, nutrient deficiencies, physiological problems and overall crop health.**

**By VICTOR JUMA, Syngenta East Africa Ltd**

**I**n 1907, Baden-Powell, an English soldier, devised the Scout motto: Be Prepared. That's always a good plan in all areas of life, including the horticultural sector, where pests and diseases can have devastating effects on crops and on the grower's bottom line.

Both greenhouse and outdoor crops are susceptible to many pests and diseases which cause irreversible damage and can lead to serious economic losses. Because of the low tolerance for damage, ornamental crops require regular scouting and an effective pest management strategy to ensure that a higher marketable quality is maintained.

A good crop scout can be a valuable

asset to a grower. If no scouting function is performed, there is little or no chance of early problem detection and identification. Growers need to keep a close eye on each field throughout the growing season to avoid crop losses.

The cornerstone of an Integrated Pest Management (IPM) program is scouting or monitoring plants for insects, diseases, weeds, nutrient deficiencies, physiological problems and overall crop health. Crop scouting keeps a grower on top of field conditions, helps in catching and diagnosing problems early and allows for timely corrective action to protect crop yield and quality. When done regularly, crop scouting is a valuable tool for identifying

field-specific pest pressure and crop injury in order to prevent potential outbreaks from occurring, which reduces crop damage and plant losses

Scouts collect up-to-date information regarding the presence of pests (primarily insects and diseases) and evaluate the effectiveness of previous pest management strategies. Scouts need to have a good understanding of plant biology, pest biology, pest life cycles, host plants, beneficial insects, injury symptoms, environmental risk factors, and control strategies. With proper training and experience, scouts can identify potential problems and provide the information necessary for making



**Sticky traps are an effective mode of pest scouting**

good pest management decisions.

The method used by a professional scout is a straightforward one, in which the scout monitors the crop by examining a representative sample of the plants. First the area to be scouted is mapped and, if large divided into sections. When the scout monitors the crop, he/she looks at plants that are at high risk of being infested/infected: along walkways, by doors, along outside rows, and in areas where infestations/infections have been previously found. The rest of the section is covered in a zig zag random pattern. The part of the plant a scout examines is determined by the behavioural characteristics of the pests most common to the plant. As the scout finds problems, he/she uses a record sheet to note his/her findings and marks any infestations/infections on the map.

Pest management professionals will use information provided by the crop scout to select and implement a pest management program. A well-designed scouting program includes three main activities:

1. Sampling to provide an accurate estimate of pest densities and crop health.
2. Identification of pests or diagnosis of the cause of crop injury based

3. Comparison of observed pest pressure or crop injury to recommended economic injury levels or economic thresholds.

Thus, the success of the recommended pest management procedures depends on the accurate and timely completion of all three crop-scouting activities.

Scouting should be done weekly during the growing season but this can vary according to the crop grown, the stage of growth, the perceived pest threat, and weather conditions. Scouting for a particular pest or problem requires very specific methods. These methods can vary depending upon the pest or problem, but may include time of day, stage of crop, location to look on the plant or in the soil, as well as action population thresholds.

Fields are scouted to determine whether one or more pest management tactics are justified. The benefits of scouting include;

1. To improve pesticide application decisions based on scouting reports; right timing and targeting.
2. Increase control of pests and to manage resistance of pests to chemicals.
3. To avoid economic losses to the

grower.

4. Improved selection and evaluation of application techniques.
5. Permit the use of biological control agents.

The concept of an economic injury level was developed to provide objective guidelines for making informed decisions about pesticide use. The economic injury level is the pest density or level of crop injury that will result in yield loss equal to the cost of managing the pest. It may be considered the break-even point, or the lowest pest density at which treatment may be economically justified. The economic threshold is the pest density or level of crop injury at which controls should be applied to prevent an increasing pest population from reaching the economic injury level.

Flower growers can optimize pesticide usage, maximize economic returns, and produce high quality crops by using IPM programs which use established scouting procedures. The horticultural sector will continue to expand into more specialized and diverse areas and as a result, growers need to be 'be prepared.' Crop scouting will play an even more vital role in the business of agriculture.

# American buyers to grace IFTEX

**T**he launch of direct flights from Nairobi to the United States has brought good tidings for the flower sector as 10 American flower buyers from Miami are expected at the 7th Edition of the International Flower Trade Exhibition (IFTEX) slated for June 6th to 8th.

The expo comes at a time Kenya is trying to diversify its market from Europe to Asian countries seen as a potential market for cut flowers.

Kenya is set to for the first time to launch the Fresh Produce Africa, a horticulture expo that seeks to position Kenya as the horticulture hub of Africa connecting buyers across the world with Kenyan growers.

The Kenya Flower Council says flower farmers are facing stiff competition from Least Developed Countries after Kenya was upgraded to a middle income economy.

They are urging the government to step in after the country was elevated to a middle income economy that has seen Kenya denied the opportunity to subsidize the sector.

“We appreciate competition especially from Ethiopia, and emerging countries like Rwanda,” said Clement Tulezi CEO Kenya Flower Council.

“We want consistency, we are calling on the government to assist us in finding the place of flowers in this country,” urged Tulezi adding that, “We have an increase in small holders and we want government to improve infrastructure, farm inputs, and availability of machinery.”

Tulezi noted the industry is self regulated and the regulations cut



**Dick Raamsdonk President HPP Exhibitions**

across social and environmental aspect.

“We have a standard that all flower growers conform to. The self regulations cut across social and environmental aspect,” the CEO noted.

He said there is an emergence of middle class who have a new different appreciation in flowers.

**We have an increase in small holders and we want government to improve infrastructure, farm inputs, and availability of machinery**

“We have grown by 16% in our flower exports and want to work closely with governments to surmount the trade barriers affecting us as an industry,” he added.

Speaking in the same forum, CEO AFFA-HCD (Agriculture, Fisheries and Food Authority) (Horticultural Crops Directorate) Zakayo Magara said the number of companies dealing with horticultural products have increased from 284 in 2014 to 386 in 2017.

Adding that the exports have grown from 84 billion in 2014 to 115 billion in 2017.

The resurgence of pests in the tropics on account of climate variability has seen the export of chilies banned from certain markets.

IFTEX will also see the inaugural exhibition of fresh produce at the exhibition riding on the success of the flowers.

They are appealing to African countries to free up their markets of both tariff and non-tariff barriers so as to take advantage of the vast African market.

# Fresh Produce Africa (FPA)

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# Recapping developments in the potato industry from an National Potato Council of Kenya (NPCK) perspective

**I**n September 2015, Justice Francis Gikonyo from the High Court in Meru County suspended a law stipulating that potatoes should be packaged in bags weighing not more than 50 kilograms (kgs). This was after traders and potato farmers contested in the petition that as stakeholders being directed affected by the law they were not involved in its creation. The ruling also allowed traders and middlemen to revert to the use of extended bags, which weigh more than 50 kgs, contrary to the Agriculture, Fisheries, and Food Authorities (AFFA) Act.

“The traders pack as much potatoes into the extended bags as possible, increasing chances of rotting and lowering the quality of potatoes. The heavy weight of such packaging makes it difficult for porters to lift them, carry them or instead drag them on the ground and drop them heavily which greatly bruises and damages the tubers.” says Ms. Sarah Kuria, the National Potato Council of Kenya (NPCK) Policy, Lobby and Advocacy Officer.

“The packaging case is still in court,” says Ms. Mukami. Currently, the council is rallying other stakeholders like AFA towards the development of regulation for packaging of potatoes in a maximum of 50Kg bag and marketing



## Apology to NPCK

In the April- May edition of HortiNews concerning the potato subsector titled “Recapping Developments In The Potato Industry From An NPCK Perspective,” it has been brought to our attention there were numerous misrepresentation of facts concerning the Council and the subsector in general on pages 26, 27 and 30. The errors included:

- Presenting the Council as an industry regulator as opposed to as a coordinating body.
- Stating that the Council advocates for use of a particular variety yet Council is neutral and does not advocate for any variety over others.
- The Council is building storage facilities etc

We hereby apologize to the Council Chief Executive Office, Wachira Kaguongo, and the industry stakeholders over the errors. We have taken necessary measures to avoid occurrence of such a mistake in future.

We have a clarification in this issue  
Catherine Riungu, Managing Editor

of potatoes by weight says Mrs. Kuria. According to industry reports, Meru County is the only region that has successfully enforced the law, a development attributed to producers refusing to sell in extended bags. “We also need to develop another legal notice using the AFFA Act. This process requires stakeholders. In May, we have a National conference for all stakeholders such as farmers so that we ensure that there is ownership of the law and a legal notice in place,” she says.

Ms Kuria explains that the county governments will be key in implementation and ensuring that the tax levied on the 50 kg bags in their financial bill will be charged per weight, and not per bag. This drive towards a new packaging law is among the developments that the NPCK is trying to pursue in the potato industry.

According to Ms. Rose Manyonge, the Value Chain Development Officer, another development is that NPCK is trying to address the challenge of few certified seeds. This is by encouraging new investors, both public and private organizations to venture in seed potato production as well as encouraging current producers to increase their production capacities. NPCK has availed seed potato information in its website and together with partners developed a potato variety catalogue describing 55 registered varieties by Kephis. Ms Manyonge further explains that only a quarter of the farmers access certified seeds. To improve accessibility on the certified seeds the council has a digital platform that enables one to inquire on seed availability. The SMS based platform VIAZI SOKO informs the user on the quantity available, price per Kg, the certified seller, and their contacts. It is also used to link seed potato producers to farmers as well as farmer groups to market outlets. “The seed producers are able to post their supply on the portal which is updated weekly,” she says.



**Only a quarter of the farmers access certified seeds -NCPK**

According to Ms Manyonge, in the shortage in production of certified seeds is exacerbated by the long and rigorous process taken for one to become a certified seed producer, which makes small-scale multipliers to shy away.

Another development is the potato processing of starch in Nyandarua County. Ms Manyonge says NPCK is trying to support farmers to sell collectively as groups such as cooperatives through its stakeholder

platform. She says that the NPCK does this by mapping the market outlets for potato farmers that are available for both fresh table consumption and for the processing markets. Ms Manyonge says that NPCK has been able to link about 21 potato farmer groups to market in counties such as Meru, Nakuru and Nyandarua. However she says that despite this attempt by NPCK to organize farmers into groups, it has been a challenge for farmers in these groups to meet the



**From left to right. Ian Ireland (IPM), Wachira (NPCK), Richard Kimani Rugendo (Kevian), Marcel De Sousa (IPM), Derek Roulston (IPM), Kenneth Koome (Kevain farm manager) in an earlier event. PHOTO COURTESY NPCK**

strict requirements for processing chips and crisp markets, based on their variety of preferences and quality of the potato tuber. For instance, while crisps require round tubers, chips need long ones.

Potato is the second most important crop in Kenya, notes the NPCK. Its data states that there are over 800,000 smallholder potato farmers and over 2 million people in the value chain. Potato in Kenya is produced on a total of 169,000 hectares of land. MsManyonge says that in Kenya potato farming is mainly rain-dependent. This results in glut and scarce potato seasons as majority of the farmer's plant and harvest at more or less the same time. This results in price fluctuation in the market.

One of NPCK's partners, International Fertilizer Development Center (IFDC) through the 2Scale Project has helped in putting up small tonnage storage facilities for some of the organized farmer groups in Nakuru, Nyandarua Nyeri

and Meru Counties "It acts like the normal cold storage and the capacity ranges between 44 to 40 tonnes. This is usually a co investment between IFDC and the farmer group," she says.

### **Re-organization**

NPCK was established in 2011. According to Ms.Manyonge, it was necessary to re-organise the whole value chain in terms of production, logistics, storage, seed supply, and clearly defining the roles of different players such as farmers, input providers, and regulators in order to create synergy in the sub-sector.

According to the Liaison and Partnerships Officer, Ms. Esther Kaguora, over 30,000 potato farmers have been registered on the VIAZI SOKO platform from different potato growing counties and the registration is expected to accelerate as farmers gets awareness and benefits

She says that the website has

also been instrumental in avoiding duplication of resources and creating synergies among partners who are doing related potato projects in the country.

**Potato is the second most important crop in Kenya, notes the NPCK. Its data states that there are over 800,000 smallholder potato farmers and over 2 million people in the value chain. Potato in Kenya is produced on a total of 169,000 hectares of land**

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# National Farmers Awards 2018 opens

**T**his year's National Farmers Award has officially kicked off with the Ministry of Agriculture officials distributing the forms across the counties. The form distribution exercise will run up to end of July and farmers are encouraged to apply.

The awards, a partnership between agro input company Elgon Kenya Limited and the Ministry of Agriculture and Irrigation, has grown to be an important event in the country's farming calendar since it was first launched in 2013 having created a host of soil celebrities. Winners in the youth, women and physically challenged are rewarded by the President at the Nairobi International Trade Fair and a gala dinner with top government officials organized for all the winners.

The pioneer edition received 8,000 applicants, with the number now having more than tripled attracting entries from over 40 counties. Winners are clustered into nine categories including persons with disability, women, youth and large scale farms.

Through working with both national and county governments, the scheme has reached farmers in every corner of the country whose heartwarming stories embody the spirit of ordinary people surmounting numerous odds to deliver extraordinary results.

The national fete while romanticizing agriculture as a rewarding endeavour, has spurred talk and action on making life easier for food producers to feed a growing population that is already putting strain on food availability. The awards have also been pivotal in shifting discussion from boardrooms to a central meeting point between



**Elgon Kenya Directors, Bimal Kantaria and Baiju Kantaria with Ann Onyango, Agricultural Secretary while launching the 2018 National Farmers Awards**

ordinary farmers and other key players in the sector including government and private sector players.

Past winners have gone on to create agricultural empires that are not only benefitting them but entire communities and getting attention beyond the country. Such testimonies rubberstamp what the awards set out to do; to create a network of model farmers across the country who would be ambassadors of the country's food security, influencing many more into sustainable farming.

The thirst for farmers' recognition as evidenced in the huge number of applicants paints a tale of a group that has for long been forgotten in crucial debates but which deserves more attention now more than ever when the dynamics of food production globally are shifting in favour of developing countries.

The number of young people venturing into farming has grown tremendously as evidenced by the large number of applicants in the youth category over the years, an encouraging feat considering youth

are the future food producers.

The 2018 categories include large-scale farm, large scale agro dealer, small-scale farm gearing towards commercialization, small scale farmer fully commercialized, small scale agro input dealer, large scale agro input dealer, large scale fully commercialized floriculture, youth in Agriculture, women in Agriculture and physically challenged.

Other key sponsors of the scheme are Nation Media Group through Seeds of Gold, Bayer East Africa, UPL, Arysta, Excel Crop Care Limited, BASF and FMC.

Entry forms can be collected at Ministry of Agriculture offices, county offices, Nation Media's seeds of gold and can also be accessed online through these websites.

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

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**For more information on the awards contact Nelson Maina, Elgon Kenya Ltd/+254722403103 or email [awards@elgonkenya.com](mailto:awards@elgonkenya.com)**

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**CONTACT DETAILS**

Application Date (dd/mm/yy):

Business name (Firm, Farm, Individual, Agrovet, Others):

Location of business:

Address:

County:

Sub County:

Postcode:

Telephone (land line and mobile):

Email:

Website:

**BUSINESS DETAILS**

Farm business details:

Mission / Vision:

Crops grown / Livestock:

Turnover and Profit:

(This information is in confidence and not for publication)

Future Goals:

Farm size (ha or acres):

No. of people employed: Male

Female

Your main farming challenges:

Your main strengths:

Your main market areas:

Your main agri-input suppliers:

**CATEGORY (tick only one)**

- |   |   |
|---|---|
| 1. Small scale farm gearing to commercialization (less than Ksh 10m) <input type="checkbox"/> | 6. Large scale agro-input dealers (more than Ksh 5m) <input type="checkbox"/> |
| 2. Small scale farms fully commercialized (more than Ksh 10m) <input type="checkbox"/>        | 7. Women in Agriculture <input type="checkbox"/>                              |
| 3. Large scale fully commercialized (more Ksh 50m) <input type="checkbox"/>                   | 8. Youth in Agriculture <input type="checkbox"/>                              |
| 4. Large scale floriculture, fully commercialized <input type="checkbox"/>                    | 9. Physically challenged persons in Agriculture <input type="checkbox"/>      |
| 5. Small scale agro-input dealers (less than Ksh 5m) <input type="checkbox"/>                 |   |

For more details contact:

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2. Elgon Kenya Ltd. Mr. Nelson Maina Mobile: 0722-403103 E-mail: [awards@farmersaward.com](mailto:awards@farmersaward.com)

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# Nematodes, our nemesis?

By RUTH VAUGHAN

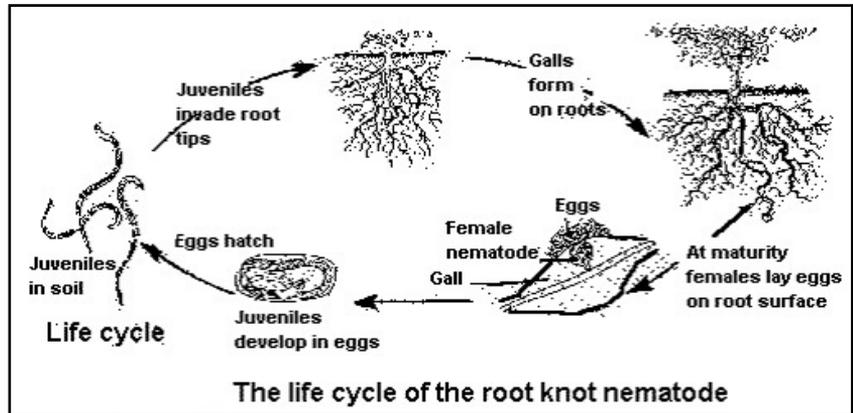
**N**ematodes are microscopic, non-segmented, round worms that come under the Phylum Nematoda. They are very diverse and live in organisms, plants, soils and water (terrestrial and aquatic). 100 cc of soil can contain several thousand nematodes. Nematodes fill many niches of the food cycle feeding on vertebrates, insects, invertebrates, fungus, bacteria, organic matter and of course plants. Plant-parasitic nematodes are of great risk and concern to agriculture and are mentioned in the millennium goals as a direct threat to food security.

Because of their microscopic size and diversity, we are still learning about nematodes, and new nematodes are being discovered all the time! Luckily for us, a great deal of work has already been done on plant-parasitic nematodes and other nematodes that affect agriculture.

*Nemesis- the inescapable agent of someone's or something's downfall.*

Nematodes can be classified by what they eat, and what they eat determines the shape of their mouthparts, which have been specifically adapted to their food source. Nematodes move through moisture films with a whip like motion. The mouth parts, body shape and the motion pattern make it easier for specialists (*nematologists*) looking under the microscope to identify them.

Plant-parasitic nematodes feed on or in plant roots, and occasionally on leaves and stems, and can be very

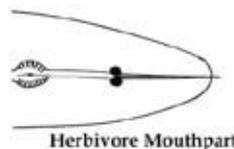


destructive in several ways. They directly feed on plants, reducing the nutrients and energy of the plants. They damage the roots and root tips that are essential for water and nutrient uptake. They provide an easy entry for plant pathogenic bacteria and fungi. The female root knot nematode, *Meloidogyne*, enters the plant roots and stimulates the formation of debilitating roots galls. All these actions greatly reduce yields and plant health and can cause cataclysmic collapse of the plants.

The life-cycle of plant parasitic nematodes is relatively simple. They have a dormant phase, the egg, that can be very persistent and resistant to drying and chemicals. The eggs

hatch in response to a trigger, generally root exudes from plants. They have a mobile juvenile phase that moves, feeds and grows, molting several times, before maturing in an adult. The adults reproduce and lay eggs – and the cycle starts again. The egg to egg cycle can take under 23 days and is shortened in warmer soils and with enough food. Healthy young plants with rapidly growing roots and lots of root exudes can actually *stimulate* an increase in nematode populations.

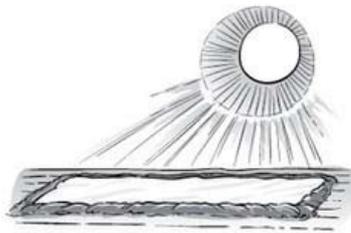
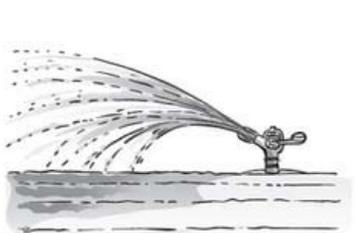
**How do we control plant parasitic nematodes (PPNs)?** First, we need to take a soil sample and send it to a proper laboratory for specific



Plant parasitic nematodes (PPNs) have sharp stylets that can penetrate plant tissue and suck out the contents. A rapid infestation of PPNs in a young fast growing crop can cause complete crop failure if not identified and treated fast. Prevention is better than cure - and more cheaper!



Phycometes	Unit	Result	Grade Low	Grade High	Low	Optimum	High	Symbol	Count
Saprotic	100 ml	9900		> 3000				log	4950
Parasitic	100 ml	ND		< 3000				Prod	ND
Meloidogyne	100 ml	13400		< 25.0				Det	13400



Soil solarization is an effective way of reducing PPN's before planting. Be sure to top up the soil biology with good guys afterwards.

identification and counting. We cannot see nematodes with the naked eye or hand lens. Next, we must ensure accuracy of sampling. PPNs are attracted to and feed off plant roots. The sample should be from the root zone and include some root fragments. The sample should be from an actively growing crop. Nematodes need a moisture film to move in and a crop to feed off. In fallow dry soil the nematodes may have moved into the moist subsoil and not be picked up in a sample or be in a dormant egg or cyst form that is not mobile and difficult to extract and identify (except the potato cyst nematode cyst – that floats). Finally, we should be aware that we can only count nematodes that are alive – so the storage and transport of the sample are very important. Dried, frozen or waterlogged sample will not give us a good count. The nematodes in the soil sample in the plastic bag on the dashboard would have succumbed to *solarization* long before the soil gets to the lab.

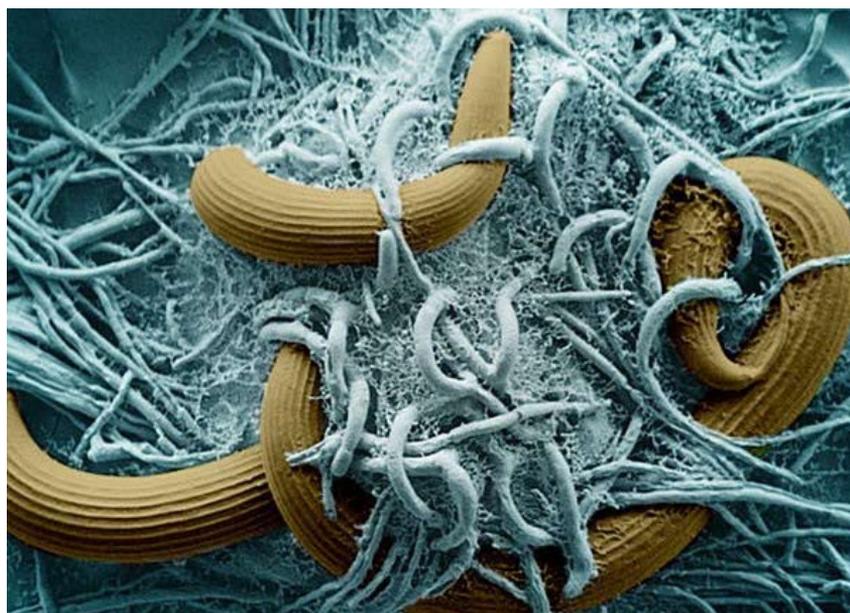
Nematodes are counted in 100

cc soil and classified as saprofagic (eating bacteria, fungi and rotting plant tissue), predators (eating other nematodes or insects) or PPN's. The PPN's are listed under their genus. Each plant species / nematode combination has a THRESHOLD level of infestation (guide high), above which there is economic

damage to the crop and treatment is recommended.

With nematodes, prevention is better than cure, as it impossible to reverse the damage that the nematodes do to the plant roots.

Nematodes cannot move very far by themselves. Start clean (check with a nematode test) and stay



**Biological control of PPN's by nematode trapping fungal strands that are supported on biochar fragments in the soil**

clean. Nematodes move around in soil, water and plant material. Good hygiene practices, cleaning shoes, implements, tractor tyres, and burying or burning infected plant tissue will reduce the spread. Prevent run-in of soil from other fields. Water can carry nematodes. Check water sources that are at risk (surface water, dams, rivers lakes, and shallow wells). Special nematode filters are available for high risk waters. Always buy transplant and seed material from a reputable source – and make sure it is certified nematode free.

Sadly, most our fields have already been infected with PPNs – so we must try to minimize the damage. A healthy biological soil, with good aeration, structure and organic matter levels and a diverse flora and fauna is the best way to resist nematode attacks. Good agricultural practices help reduce levels of pathogenic nematodes: crop rotation, green manures, antagonistic cover crops (*marigolds / mustards / asparagus*), building organic matter levels, proper plant nutrition and solarization can all help bring levels below the threshold.

The days of killing the nematodes and everything else in the soil with Methyl bromide and /or broad-spectrum CLASS A poisons are over. This practice was not only bad for us and the environment, but also created a biological vacuum that quickly filled up with PPN's that had no competition, and created very high levels of PPNs, requiring ever higher levels of poisons to keep



Slug eating nematodes enter a slug when it is in the soil and inject it with a bacteria that kills the slug and digests it. The nematodes feed off and breed in the dead slug. Traditional slug pellets are very harmful to birds and mammals.

them under control. We know better now.....! If PPN levels are too high in your crops, a biological nematicide or nematode specific nematicide can be used (check out <http://shambaza.com/nematode> for more details).

Pre-plant soil sterilization is a very effective way of reducing nematode populations especially in greenhouses. Wet the soil and cover with transparent plastic for 3-4 weeks in hot weather. (Be sure to re-use the plastic). After this, apply lots of well composted organic matter and biological soil amendments to re-populate and stimulate the soil

biology before re-planting.

Not all nematodes are bad, and as more research is done on biological control and nematodes – we can ‘farm’ and use beneficial nematodes to our advantage. There are many insect eating nematode species (EPNs) that are commercially available and are used in biological control.

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***For more information and to know the nematode status of your soil, please contact us to organize a professional, scientific, independent nematode analysis. Email us on [support@cropnuts.com](mailto:support@cropnuts.com) today.***



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# Simple Practices and Technologies for Cool/Cold Chain Management in Fresh Fruit and Vegetables



By **DR. JANE AMBUKO**

**I**t is estimated that 40-50% of fruits and vegetables produced for human consumption are lost/wasted along the supply chain. Harvested fresh fruits and vegetables (FFV) are still 'living'. This means that they still respire (use oxygen, breakdown stored food reserves), transpire (loss water to surrounding), are prone to mechanical injury, they can be attacked by disease causing microorganisms etc. If not properly managed, these factors lead to fast deterioration of FFV after harvest and consequently contribute to the high postharvest losses reported. At the center of all the factors that lead to spoilage of FFV is temperature. It is the single most important environmental factor in postharvest management of perishable food commodities including FFV.

Research has shown that for every 100C increase in handling or storage temperature, the rate of spoilage increases 2 to 3 times. Therefore maintaining cool (but safe) temperature from harvest to the time the FFV are

used or consumed is key to quality preservation, extending their shelf-life/marketing period and ultimately reducing postharvest losses. A cold chain for perishable commodities refers to handling the produce within a low (safe) temperature environment from harvest until it reaches the consumer or end user. For most FFV of tropical origin, the safe handling temperatures vary with the different commodities but are generally above 100C. Lower temperatures could result in chilling injury.

Cold chain management is a standard practice for horticultural value chains in the developed countries. It is often regarded as a sophisticated and complicated process that is out of reach for smallholder farmers. In fact it is presumed that to maintain a cold chain, one must have access to conventional cold rooms, refrigerated transport from the farm and during shipment to far flung destinations. Such sophisticated routine is common practice in technologically advanced countries. In the developing countries, such sophistication can be found in the flower sector and among FFV exporters. In most developing countries where horticulture is dominated by small scale producers with limited resources, a semblance of the cold (cool) chain can be realized through simple practices coupled with simple postharvest handling technologies. Some of the simple practices and postharvest technologies which can be applied to achieve cool postharvest handling temperatures at the different stages of the FFV supply chains are described below.

## **Time of harvest**

Although farmers tend to harvest at any time of day as need/demand arises, it should be noted that the time of harvest determines the field heat on the produce. Field heat refers to the heat on a crop immediately after harvest - includes the heat absorbed from the environment prior to harvest and the heat generated from the respiring crop. Therefore if the crop is harvested during the hotter times of the day (12.00 to 15.00 pm) the levels of field heat are very high, given the temperature of the environment and the rate of respiration. For example the pulp temperature of mango fruits harvest early in the morning at 7.00 am was found to average 160C while the pulp temperature of fruits harvested at around 1.00 pm averaged 330C. The high heat load on the fruits harvested during hotter times of the day hastens deteriorative processes during subsequent handling. It takes time to remove the field heat from such produce, even under cold storage. Harvesting during the cooler times of the day (early morning and late in the evening) when the temperatures are lower is therefore highly recommended.

## **Handling immediately after harvest**

### **• On-farm Shading**

It is common to find harvested produce heaped under a tree on the farm awaiting collection by the buyers. Many farmers consider 'under the tree' as some form of protective shade for the harvested produce. Under the tree is obviously better than exposing the produce to direct sun, however a proper shade which can fully protect the produce from environmental factors

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(sun, rain, dust etc.) is preferred. Such a shade can be made from very simple materials such as grass and wooden poles which are readily available on many farms. Harvested produce can be bulked under the shade until the required quantity is attained or until the buyer is ready to collect the produce.

### • **Low-cost cool storage technologies for precooling and temporary storage**

Besides the simple shades, the farmers are encouraged to adopt simple and low-cost cool storage technologies such as zero energy brick cooler (ZEBC) and charcoal cooler. The size (capacity) can be adjusted depending on the quantity of produce to be stored. For example a simple ZEBC measuring 220 X 200 cm and 60 cm high (standard size) can be easily fabricated locally. It is made from a double wall made of interlocked (un-cemented) bricks. The cavity between the two brick walls is filled with river bed sand which is kept wet using water drip lines connected to an overhead water tank. The top cover of the ZEBC can be made from diverse locally available absorptive materials. The materials and size can vary depending on the desired capacity and the locally available materials. The evaporative charcoal cooler (ECC) on the other hand is made from a double wall made from chicken wire and packed with charcoal. The sand (in ZEBC) and charcoal (in ECC) are the media that holds water which upon evaporation results in a cooling effect and high humidity around the stored produce.

The evaporative cooling technologies are ideal for temporary storage on the farm and especially in rural areas without access to reliable electricity. A temperature difference of 5 to 14°C between ambient and the evaporative coolers has been reported. For produce destined for later cold storage, evaporative cooling can be used to remove field heat from the produce prior to cold storage or refrigerated transportation.

### **Packaging for transport**

The common practice employed to package fruits and vegetables for the market among most smallholders is stuffing them into polythene sacks/bags. This practice has many negative effects on the delicate and highly perishable fruits and vegetables. This form of packaging not only enhances mechanical injury on the produce during transportation but also encourages heat buildup in the sack or polythene bag. It is not uncommon that when the produce reaches the final destination, a high percentage of the produce is spoiled or unfit for the market. In the case of leafy vegetables, the heat generated in the package often results in the vegetables being 'cooked' upon arrival at the destination.

To address this problem, simple practices like packaging the fruits and vegetables in well-aerated containers such as crates is highly recommended. To cushion the produce from mechanical damage during transport, the crates or aerated containers can be cushioned with dampened newspapers. The dampened newspapers not only cushion the produce in stacked crates from mechanical damage during transportation but also results a cooling effect. When the water contained in the dampened newspapers evaporates, it takes away the heat from the produce resulting in a cooling effect – evaporative cooling. In some cases, icepacks or cool packs can be used in the crates during transportation. Thawing of the ice or coolant requires heat which is drawn from the produce thereby resulting in a cooling effect.

### **Handling at the market (retail or wholesale)**

Efforts to ensure cold/cool chain maintenance from harvest to the market are in vain if the chain is abused or broken at the market stage. The traders should endeavor to maintain cool temperature of the produce. Display of the produce in the open sun at the market place results in heat buildup in the produce thereby hastening deterioration of the produce.

Some of the best cool/cold chain practices at the market stage include piecemeal display of the produce. With appropriate storage facilities at the market, traders can keep bulk of their produce in the store and only display small volumes at once. Simple shades at the market place should be used to protect the displayed produce from the direct sun because this hastens deterioration especially if the produce is not sold and has to be returned to store for later marketing. Sprinkling cool (clean) water over the produce has a cooling effect because as the water evaporates, it takes with it heat from the produce.

### **At the consumer stage**

The consumers are also expected to store the perishable produce in a cool place. The best option is refrigerated storage. However without access to refrigeration facilities, especially in hot and dry areas, evaporative cool storage using the pot-in-pot can be applied. The pot-in-pot is a version of evaporative cooling where a small pot is inserted into a larger pot leaving a cavity between the two pots, which is then filled with sand – just like in the case of ZEBC. The sand is wetted and serves as a reservoir for water that evaporates resulting in a cooling effect for the produce that is stored in the inner pot.

The simple practices and technologies described above cannot be used to substitute standard cold chain facilities. However they can serve to maintain relatively cool temperatures for postharvest handling of the perishable fruits and vegetables. The cost involved to is undoubtedly minimal but the benefits and impact on postharvest loss and wastage reduction is significant.

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*Dr. Jane Ambuko is a Senior Lecturer and Postharvest Expert, Department of Plant Science and Crop Protection, University of Nairobi*

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# Isabelle and Aldric Spindler: Innovation is our DNA

**Over 20 years since Red Lands Roses Ltd set up shop in Kenya. It has been consistent in groundbreaking innovations that have been adopted by other growers while shaping the floriculture industry. It is easy to understand why this 28 hectares farm located in the lush and serene Ruiru area of Kiambu County has captured hearts and recognition beyond borders. Attention to detail, impressive work ethic and undivided clients' attention forms the farm's DNA. Isabelle and Aldric Spindler, the company's Directors sat with Bob Koigi for a chat on what makes the company tick, their views on the industry and the company's plans going forward.**

**You have invested heavily on sustainability and green projects. What has been the payoffs? How has this shaped your business?**

Our driving force in these investments of course is to enable us to respond to market needs and serve our clients better by producing high quality flowers. We wanted to build a brand associated to all this. We have a knack for



**Isabelle Henin and Aldric Spindler, directors of Redlands Roses Ltd**

sustainably grown flowers which explains why we have ensured that every step of the flower production chain, from hydroponics, solar energy, water recycling to transportation is environmentally friendly. It is our philosophy. Of course the initial investment is costly but as we progress we have seen a lot of business sense in these investments top among them quality of flowers. Again our clients expect ethically grown flowers and we ensure that is exactly what we deliver to them. It is important to note that soilless cultivation allows us to use non arable land and therefore we don't compete with food crop or any other export crop such as coffee.

**You have equally focused a great deal on technology? Tell us about that**

Yes, we have come to realize that in order to remain competitive and also control operational costs we have to embrace technology. We have recently for example introduced a digital way of scouting for pests and diseases and it is working tremendously by allowing us to have precise interventions. We are trying as much as possible to ensure that the core areas of our business, from production to sales are automated. We have new innovations in water treatment, in sales department and in traceability. It means that we are able to easily monitor progress and identify hiccups should they arise. Again like we said, the initial investment sometimes is

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high but we are glad of what that has delivered.

**You are a frontrunner in innovations and the industry looks up to you for cutting edge technologies. What would you attribute that to?**

Well that is too much compliment. We have angled our business in such a way that we want to control costs while still embracing quality and reducing our impact on environment. We are always looking at innovative ways of doing that. We would give credit to our skilled and very dedicated team of workers that always come up with great ideas on how to move the company forward and drive growth. Most of these innovations are as a result of team work.

**Having been in the business for over 20 years, how is the market at the moment and what have been the major trends shaping the industry over the years?**

The market is still vibrant and still continues to demand for high quality flowers. Kenya still commands a huge share of the global market. The volumes and value exports have been growing over the years. It means our flowers are fetching more interest. Colors continue to dictate the markets but they change fast so you cannot stick to one for long. At Red Lands Roses Ltd we are into direct sales and the markets there are now predominantly leaning towards sprays and garden roses.

**How is the cost of doing business in Kenya at the moment?**

Being in the flower business at the moment is quite a tough experience. We are still experiencing spiraling costs of business. For starters we still have a lot of indirect taxes from both national and county governments. The cost of electricity is also chocking many businesses. We are lucky we invested in solar energy which has had a tremendous impact on saving costs. Equally expensive are the freight costs that eventually eat up into the business's bottom line. The flower

industry is a very crucial contributor to the economic growth of Kenya and in job creation. We still believe that if these key areas are addressed, even without giving incentives, then this could open up flower farms to more expansion and job creation.

**What have been your greatest challenges as a business so far?**

The big challenge we are facing is the mismatch between education and skills. We get all these university and college graduates who are not adequately trained to respond to industry needs especially the technical and supervisory skills. They come to work and they have little clue what to do so we have to do a lot of training on the job at a cost.

We are also having a problem with the Chinese markets. It is becoming a big and lucrative market and continues to expand. However cargo flights to China are not there. Compare with our competitors in Ethiopia who have one or two flights to China every day. They of course will easily capture that market. Again China has imposed duty on our flowers which makes it hard for us to compete in that market. Other rose producing countries get to China duty free. The Chinese love our flowers but these export challenges are too many and do not make business sense.

We have held talks with the Chinese government through the ambassador and with Kenya Flower Council to address this issue and we hope for the best.

We are also having problems with Australia, another promising market. They have changed their phytosanitary regulations since March 1 and expect flowers from Kenya to be 100 per cent free of pest. That is very difficult to achieve. As a primary measure, at Red Lands Roses, we have introduced special packaging boxes with nets to meet these new requirements. We have also been in touch with KEPHIS who are in talks with Australian officials to see how we address this.

**How are you positioning yourself to remain competitive in a very dynamic market?**

The most critical aspect here is to defend our brand by understand the market and then respond to its demands accurately. This involves planting varieties that answer to these demands and improving the level of services of our supply chain. We have decided to venture into luxury markets and this is working quite well. We also spend a lot in sending our sales team to countries where we export to understand better what the clients want and the clients of our clients. They have been to Japan, China, Europe, Greece and Russia.

**Are there any new trends in the market in terms of demand for flowers?**

Of course like we said the market is very dynamic and is always demanding for something new so the trends evolve very fast. What we have however noted is that internet buying is picking up very fast. Buyers are increasingly shunning auctions and want to just log into their computers, identify a variety and then order it.

**What is your marketing strategy and how many destinations do your flowers reach?**

We export our flowers to between 35 markets. We have a policy of exclusivity where we supply to one buyer in a particular market and anyone who wants our flowers in that market can only get them from that one buyer. This forms part of our branding strategy which pushes the prices up for both sides protecting the benefits of all.

**What do you think of the future of the Kenya flower business?**

Kenyan flowers are loved world over and it is encouraging how we as an industry have maintained the quality and positioned our flowers as a brand in the global markets. We just need to address the bottlenecks to doing business and we will be on a sound footing. Again as the competition heats up, the only way to stay afloat is to innovate and produce quality products



# Global vegetable seeds company HM Clause in East Africa

**H**M.CLAUSE Kenya is a subsidiary of global vegetable seed company HM.CLAUSE and serves East African countries.

HM.CLAUSE Kenya produces and sells vegetable seeds - tomatoes, cabbages, peppers, hot peppers and beans. It employs 108 people.

HM.CLAUSE is a global vegetable seed company dedicated to meeting local needs through global diversity,

and is committed to innovation inspired by worldwide partnerships in the scientific, industrial, and commercial fields.

An innovative company whose core business is plant breeding, HM.CLAUSE specializes in the development, production, and sale of vegetable seeds worldwide.

HM.CLAUSE generated 365 million Euro in annual sales in 2017 and employs more than 2,900 people full-time, in over 30 countries around the world.

Its investments in research and breeding represent 15% of annual sales. The organization coordinates breeding for 24 species and has more than 800 people actively engaged in research and development activities.

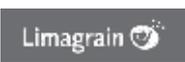
HM.CLAUSE is a Business Unit of Limagrain, an international agricultural co-operative group, specializing in field seeds, vegetable seeds and cereal products. Founded and managed by French farmers, Limagrain is the 4th largest seed company in the world.



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Communication division | HMC3057 | 04-18 - Non contractual photographs - All rights reserved - © 2018 HM.CLAUSE

**Hot Chilli Bird type:**



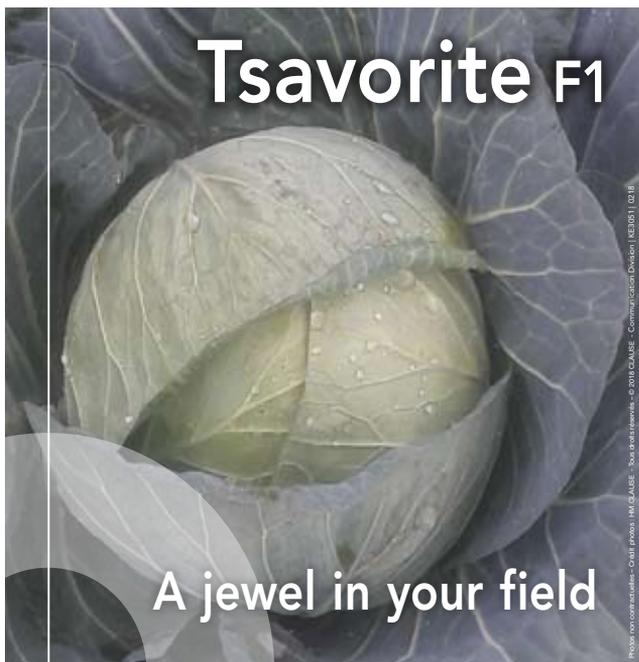
**RED THUNDER F1:** grows and produces in hard conditions and very good fruit quality throughout

**Greenhouse peppers:**



**RED DEER F1** in green to red color and **SPRINGBOK F1** in green to Yellow color, which both have the TSWV virus resistance (some cases of affected crops have been observed in Kenya recently)

**Cabbage:**



**TSAVORITE F1:** Very good cabbage, early (75 days) and very good tolerance to Black Rot and Fusarium

**Open field tomato:**



**PERSEO F1:** best resistant to leaf diseases as per our field observation so far due to rains (Bacterial speck and late blight), and high productivity, uniformity of size and shape (130 grams+)

# Fruits and vegetable investors welcome own show

**Fresh Produce Africa paves way for Kenya to host Africa's largest fresh produce trade show – Dick Van Raamsdonk, President, HPP Exhibitions**

A campaign to attract national and international buyers of fresh produce from Africa kicks off on June 6 in Nairobi, setting in motion what could grow into Africa's largest fresh produce trade exhibition.

The Fresh Produce Africa (FTA) is the newest in the stable of international trade fairs organized by HPP, the firm behind the successful International Flower Trade Exhibition (IFTEX), and if the growth of the ornamentals event is anything to go by, Kenya is headed to stamping its authority as the host of a continental horticulture trade show, says organizer Dick Van Raamsdonk, President, HPP Exhibitions.

This optimism is driven by this fact. "Kenya, being one of the most important fruit and vegetable producing countries in Africa, is in urgent need for its own platform where growers, suppliers and buyers of the vegetable and fruit sector can meet," said Dick Van Raamsdonk,

According to Tiku Shah, a veteran fresh produce exporter, FPA is the show to watch. "Kenya is known as a producer of a large diversity of fruits and vegetables and FPA is an indication of the changing market trends where buyers are increasingly going to the growing nations to source for products. It is not possible for our growers who are basically smallholders to travel to international shows but here at home buyers have a great opportunity to sample our rich heritage", he said.

Van Raamsdonk said FPA is creating an opportunity for growers to present their fresh produce ready



**Dick Raamsdonk, President HPP Exhibitions, Zakayo Magara, Ministry of Agriculture, Clement Tulezi and Tiku Shah of Sunripe during a media briefing**

for exports to buyers. "Suppliers will also have a chance to showcase to both growers and buyers of fresh produce their latest technology solutions and innovations as well as value added processing and packaging methods for improved efficiency in fresh produce operations," he said.

"FPA 2018 being the launch edition, lessons learned will inform how the event will be fashioned, but there is no doubt in my mind the future is bright for the exhibition", said Van Raamsdonk.

The unique aspect of this show is that traditionally, fruits and vegetable exporters have attended international shows to exhibit their products but FPA is bringing buyers to the producers. While this has been the norm for the flower industry where buyers always travel to meet producers at their farms, this is a first for this fresh produce industry.

The timing for FPA is topical

considering the growing importance of Africa as the next big food production zone since the continent is the only one with a natural suitable climate, a ready affordable workforce and expansive arable land. There is a global focus on production in Africa as the world grapples with food insecurity and uncertainty over the challenge of feeding an estimated 50 billion people in the decades ahead. The continent is the answer to this puzzle and Kenya is well positioned to showcase to the world the massive potential to grow', added Van Raamsdonk. According to him, the flower industry has more competition from other producing countries compared to fresh produce sector. Kenya has a fairly well developed horticulture industry and its ability to produce year-round gives the country a comparative advantage. "Markets are about reliability and quality, and Kenya scores highly in both fields", Raamsdonk said.

*“Think sustainability  
Think Real IPM”*



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# Jane Ngige: Making local fresh produce markets safe and competitive

**Mrs. Jane Ngige is synonymous with tenacity, tact and celestial zeal. For the more than ten years she was the CEO of Kenya Flower Council, she is credited with having introduced transformative reforms, changing negative industry perceptions while driving it to unprecedented records. Now at the helm of the Kenya Horticultural Council, KHC, she is tasked with an even more demanding task of elevating the glory of the industry to new highs. But Mrs. Ngige sees this as another stab at doing what she loves; putting systems and processes in order.**

**She spoke to Bob Koigi about what her new job means to her, the plans she has for the industry, the Council's space in shaping the sector and her vision to catapult Kenya to the league of global horticulture export giants.**

**Recent reports point to a rosy horticulture industry that has**



**Jane Ngige CEO Kenya Horticultural Council**

**recorded marked growth in production and sales. What would you attribute that growth to?**

We are in a very interesting situation whereby yes indeed it does look like the industry is doing well if you look at the statistics. In 2017 for example we hit the Sh130 billion mark in exports with the flowers

of course doing quite well. This is due to a couple of reasons. We had good weather in the year necessary for horticulture to flourish. Then in February we had a windfall because of heightened demand for flowers occasioned by political unrest in Ethiopia. Orders were diverted to Kenya. Unfortunately as a country

we were not prepared for this and we ended up getting overwhelmed by the volumes. That having been said it was overly a good year for the industry despite being an election year.

**You are credited with having turned around the floriculture industry in the over ten years that you were at the helm of the Kenya Flower Council. What is your strategy for the broader horticulture industry?**

KHC was mooted to address the challenges of market access pegged on compliance. Stakeholders agreed that what the industry needed was a one approach to address issues of market access, high level lobbying and to promote the industry.

Unlike flowers, the key issue with fruits, vegetables, herbs and spices is food safety. If the exports can effectively adopt the responsibility of ensuring food safety across the value chain, the results of that will percolate to the domestic level. Figure this, we only export 4 to 7 per cent from our horticultural production in Kenya. The rest goes to domestic market. That paltry export percentage is worth Sh130 billion. The value of what we produce is approximately Sh400billion. About 40 per cent of what we produce goes to waste due to post harvest handling. My vision is to cascade the good practices that have been catalyzed by export market requirements into local markets to achieve the expectations of government's food security pillar of enough, accessible, affordable and nutritious food.

We are already working on a project with Nairobi County targeting one open air market to initiate these practices. Ultimately our idea is to create model markets with these parameters, supported by government, that can be emulated by other markets. That would be enough to tame all the losses and shore up domestic contribution to the industry. So my hope is to see an organized fresh produce distribution system.

**What do you think are the greatest threats to the horticulture industry in Kenya and what are the players doing about them?**

Since 2013 we have had a challenge with market access for our beans and peas in the EU with our official control systems being found wanting. One of the suggestions that was put forward by the EU authorities was that we needed to put in place a traceability system in order to maintain market confidence.

The restrictions are becoming more stringent. We are now facing a new requirement in terms of Fall Armyworm and False Codling Moth.

In the face of these challenges what has the industry done? It has, together with HCD, the main regulator come up with a systems approach to stem these interceptions both locally and internationally through the Horticulture Traceability system courtesy of USAID KAVES project.

We also reviewed an industry standard, the KS1758 to establish part I for flowers and ornamentals and part II for fruits and vegetables. Now with these two standards and the traceability system in place, we have a very good system that will allow us to track back any problems anywhere in the value chain from seed, consolidating and cargo handling, and then intervene where necessary. What we must do is ensure that there is full implementation of the traceability system and the standards, because the system allows us to implement the standard.

Some of our trade protocols have been quite prohibitive for doing business especially in emerging markets like China where our exporters pay taxes of between 4 and 12 per cent. The government needs to fast track trade protocols.

Logistics is another nightmare. It is not just the airport. We have recently had congestion at the port which has seen delays in export of

avocadoes. This is predominantly a small scale commodity that enjoys year- round good market. Kenyans in that business have responded to government's call to grow for export and then they have to struggle with facilitation. It is damaging to business and industry.

**What are the recent trends in interceptions?**

False Codling Moth has been a great threat to capsicums and chilli and we are happy that more growers are increasingly turning to greenhouses to tame this threat. The industry is very alert to any threats old or emerging and we are counting a lot on the traceability system to assist us in identifying areas with unacceptable levels of notification pests and the mitigation measures to use

The beauty with Kenya is that these problems are not insurmountable. We will always find a way of overcoming them.

**How is the experience being at the helm of a body that seeks to harmonize both floriculture and fresh produce sectors?**

It is an exciting experience especially because the horticulture business is broad and continually makes its mark in growing the economy. I am glad that systems and processes are working and I look forward to working closely with government and members in not just making the industry grow the economy but also contribute to the government's big four agenda.

**What are Kenya Horticultural Council members' greatest concern at the moment?**

Sustaining market access. We have worked hard to have access to these very sensitive markets. Members also want to see the industry growing and expanding. We have the capacity, we have the wherewithal and the markets are there. To achieve these two, members need efficient business facilitatory service from government

in terms of official control systems, promotion of exports and reducing the cost of doing business.

**With the pivotal role that the horticulture industry plays in the country's economy, is the government doing enough for the industry?**

We are very happy with what the regulator, that is HCD and government is doing to work with the industry instead of policing it but there are areas where this working relationship can be improved.

**We feel that the regulators need to understand the industry much better so that they can give us better services in order to continue growing and expanding.**

This is a very important economic sector in terms of foreign earnings and job creation so the country needs to look at how it will support the sector. It doesn't require subsidies but serious marketing as it happens in other areas like tourism or tea.

HCD as the regulator must fully implement the horticulture traceability system and requirements for industry standards to guarantee level playing field for all exporters but also to maintain market confidence that has been hard earned.

Business facilitation must be emphasized. For example KEPHIS must be able to provide 24 hours service. Again we should embrace systems that are not focused on end of the process inspections. We should institutionalize the value chain inspections so that these bodies like KEPHIS do more inspections on the farms, at the consolidation points and at cargo handling areas so that by the time the product is being inspected at the end point the exporter is assured that the consignment is good to go. We would like to see KEPHIS devolve services so that they get closer to the people.

The government should also



**"We are trying to build a model farm," James Mwangi manager Africa Daisy**

support the sector by giving it the Special economic zones status particularly flowers where a huge volume is grown for exports. Flower farms are spread across the country so the question is how to put them in one zone that can ensure they are managed efficiently for purposes of tax regime. Our suggestion has been to have virtual economic zones where KFC can put all its members within that virtual space and provide an enabling tax regime and business facilitation in terms of efficient delivery of services like licensing.

Where do you see the industry in the next five years?

**What legacy are you looking to shape as the woman at the helm of one of the most critical sub sectors in the country?**

I am very focused on cascading the high international standards we have embraced for our fresh produce

to local and regional markets so that we also encourage producers targeting these markets to fully comply. We are working with county governments to sensitize County Executives in charge of Agriculture. But we are happy with the awareness that has been created in ensuring that producers provide enough quantity of food, the right quality in terms of nutrition, uphold safety and ensure that food is accessible. This is our contribution to food security in this country and getting the country to diversify from traditional staple foods.

**Parting shot**

Once the KHC is properly established, we are looking forward to invite other likeminded associations so that it is not just limited to exporters because there is the desire to be inclusive if we are to see local market flourish

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# Rikki Agundah: Streamlining crop advisory services

*Society of Crop Agribusiness Advisors of Kenya, SOCAA, a professional, membership based society, is on a mission to revolutionize Kenya's fresh produce sector through offering private extension services a face and contributing to the improvements needed to build up the industry. Its membership spans agricultural bodies including producers and exporters, input and service providers and consultants among others.*

*Rikki Agundah is the institution's CEO. In this exclusive interview with HortiNews he elaborates the mandate of the body, the milestones, the plan to position Kenya as a competitive horticulture hub and the aspirations of the body moving forward.*



Rikki Agundah CEO Society of Crop Agribusiness Advisors of Kenya

**What would you consider as the greatest achievement of SOCAA so far?**

In just over 2 years since we launched out, SOCAA has provided a voice for professionals serving in the crops agribusiness sector, giving what may be referred to as private extension services a face and contributing to the improvements needed to

build up Kenya's fresh produce sector.

We have made contribution to industry processes in developing technical standards such as the KS1758:2, reviewing various legislation and policies such as the draft Agriculture Policy and contributing inputs to County Integrated Development Plans (CIDPs) for several counties.

### **In your opinion, what are the greatest threats to the horticulture industry in Kenya at the moment?**

Disjointed industry efforts to address both challenges and opportunities always put us in the backfoot and we take longer to get on top of new issues. There needs to be more concerted efforts by industry bodies to work together to address emerging requirements from our traditional markets in the EU, in new markets in North America and Eastern Europe. More importantly we have a huge market opportunity in the domestic and regional markets but since we are not promoting the adoption of food safety standards and aggressively marketing our products this market remains elusive

### **Is Kenya doing enough to prevent interceptions and ban of especially horticultural produce in the export market?**

We can do better; our current efforts will assist individual exporters but we need to move quickly to area wide programs that increase market opportunities for growers and exporters and more so enable new entrants to enter the export sector. We need to ramp up marketing of Kenyan products, bearing in mind competitors may market us negatively and if we fail to be proactive that will be to our detriment.

### **What incentives, programmes or services have SOCAA put in place to support the growth of the horticulture industry?**

Our flagship service, the National Register of Certified Crop Agribusiness Advisors, (NROCCAA) comes online this July. This is an accreditation service that provides much needed quality assurance to users of advisory and consultancy services by verifying and promoting expert advisors and consultants. This is a much-needed development towards supporting growth of the horticulture industry

### **How has the strategic partnership you have entered with various institutions assisted you achieve your mandate?**

Strategic partnerships are critical to maintaining focus and relevance in any endeavor. We have partnered with key industry bodies and organizations to complement and supplement their efforts and more so to speak with one voice on issues that must be addressed for the horticulture industry to achieve its full potential.

### **How has SOCAA raised the professional standards of crop agribusiness advisors in the country and what impact has this had on the industry?**

Coming from a point where anyone could stand up and claim to be an expert in advisory services we are quietly establishing a new norm, that professionals must be visible and respected, that advisors should focus on their areas of expertise and that we must provide solutions not just make sales. This will restore confidence in extension services and make for a more vibrant industry in days to come.

### **SOCAA has been leading horticulture food and nutrition security interventions in Kenya. How serious is the food safety and food loss situation in the country?**

Food borne diseases are a significant contributor to health conditions, coming third after cardiovascular and cancer illnesses, Africa bears the biggest burden and while we want to have higher consumption of fresh fruits and vegetables in order to improve our peoples health and nutrition not to mention food security for the country the concern of safety of produce is just as critical to address. We saw several incidences of Cholera in increasing scope and frequency in 2017 and also in 2018 and this is an indicator that we have a problem.

Close to 3m Kenyans are food insecure and the same is even more evident during periods of drought or crop loss. This is against a backdrop of 30-40% food losses. If we reduced our food losses and better distributed food from points of plenty to where it is needed we would be more food secure as a nation. Its as simple as that.

### **You have been running the Voice for Change project to advocate for safe produce and reduced food losses for domestic consumption. Tell us about the project and the achievements so far?**

The Voice for Change project is an evidence-based policy project working with civil society organizations to influence policy and business practices while increasing consumer awareness and demand for improvements in regulatory and business environment. The project is supported by SNV Netherlands Development Organization in partnership with International Food Policy Research Institute (IFPRI) and other CSOs. SOCAA is engaged in supporting the increased consumption of safe fruits and vegetables through policy changes including harmonization and enforcement of regulations, promotion of self-regulation and traceability in horticultural value chains, increased investment by both governments and private sector and consumer awareness to drive demand for safer food.

### **What is the ultimate plan for SOCAA moving forward?**

Our vision is to be the leading hub of agricultural professionals working together to create an impact in agribusiness and the agricultural sector. We want to influence a complete shift in private extension services so that farmers and investors in agribusiness make use of advisory services in order to support achievement of Kenya's Vision 2030 goals.

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# Henry Wainwright on Kenya's biocontrol industry

*Biological crop protection products companies Real IPM, Dudutech, Koppert Kenya and Kenya Biologics have formed an umbrella body to champion for safer, cleaner and environmental friendly products, at a time when the export market has become increasingly sensitive to growing standards. The body, dubbed International Bio-control Manufacturers Association in Kenya, IBMA Kenya, and launched last year is positioning itself as the green voice of the horticulture industry as it seeks to rope in exporters and small growers who also target local market. It is an offshoot of the IBMA global network, a consortium of over 85 members spanning from manufacturers, research organisations, extension service providers, consultants and distributors of bio controls across the world. Dr. Real IPM Director, Dr. Henry Wainwright General Manager of Real IPM and chairman of IBMA Kenya talked to HortiNews about the organization's aspirations.*

**What has been the developments since IBMA Kenya was formed last year?**

Last year we were successful in obtaining start-up funds from the HortiImpact programme which is funded by The government of The Netherlands. We held an important stakeholders conference with KEPHIS which included many stakeholders. The prime objective of this workshop was to raise awareness of biological control.



**Dr. Henry Wainwright Chairman IBMA Kenya**

**Kenya has been a global frontrunner in the adoption of bio controls. What would you attribute the impressive adoption to?**

A dynamic horticultural industry willing to adopt change and innovation. A large home market so biocontrol manufacturers can invest in support and technology. A large horticultural export industry. Then there are the European customers demanding low pesticide use and lower residues, the foresight and understanding by the regulators to create an enabling environment for biological control use.

**What are the greatest threats to the biocontrol industry in the country?**

Anything that threatens the horticultural industry is going to threaten the uptake of our technology. Then there is, as in any other sector, the presence of low quality products.

**What incentives, programmes or services have IBMA Kenya put in place to support the growth of the horticulture industry?**

These are very early days. The fact that we as an industry are willing and have collaborated is a major initiative.

**What are the trends that the biocontrol industry projects for the country in the next half of 2018?**

More products targeting thrips and mealy bug. Addressing the invasive pests (Fall Army Worm (FAW), False Codling Moth (FCM), Tuta absoluta, etc)

Finding alternative solutions to pesticides. This is evident from the recent vote by the EU to withdraw some important neonicotinoid pesticides which will be another driver for the biocontrol technology.

**What is your response to the school of thought that posits that biocontrol methods are expensive for especially smallholder growers and are thus unpopular in the Kenyan market?**

Some biological control products like biopesticide are more suited to the small-holder grower than the predators. This will continue. The biopesticides are packaged in small packs and are competitively priced with competing pesticide products.

**What does International Biocontrol Manufacturers Association of Kenya hope to achieve in the long run?**

A sustainable biocontrol industry helping to make Kenya horticulture industry competitive into the long term future.

# Selina Wamucii receives funding for connecting over 3,000 smallholder farmers to 17 global markets

**O**ver 3,000 smallholder farmers across Kenya are now accessing 17 markets across the world, in an elaborate scheme that has embraced technology to correct major hiccups in the agricultural value chain by pointing growers to ripe and lucrative markets, taming post-harvest losses while connecting buyers to ready produce that meets international standards.

The model, spearheaded by fresh produce startup Selina Wamucii, has courted mobile phones and the internet to pool together 3,156 farmers cumulatively growing 48 produce types ranging from fruits like avocados and mangoes, vegetables like snow peas, herbs like basil and chives on 9,152 acres. This, in just two years since the company was formed, positioning itself to become the single largest provider of fresh produce in Africa, without owning a single farm.

And with majority of the small growers cultivating an average 2.9 acres of land, Selina Wamucii's focus is geared towards choice of high value crops that would deliver high farm gate prices and ensuring farmers in close proximity plant the same crops for ease of aggregation and service delivery.

The model is timely, coming at a time when numerous studies have found that dismal farm gate prices, poor quality of produce that don't



**Selina Wamucii staff pose with the company's produce**

meet international standards and post-harvest losses that now account for 50 per cent of produce from the farm, are responsible for locking smallholder farmers from access to key markets.

Deciding what farmers under the Selina Wamucii model will plant and when it is harvested is based on real time data and guided by market forces.

To become part of the network, farmers across Kenya sign up for a Selina Account either on the Selina web-based platform dubbed Growersoft or on mobile phone via USSD.

The system captures information relating to the geographical locations of smallholder farmers, what they are producing, the various stages of progress throughout the season,

harvest timelines and projections and actual volumes at harvest.

This information makes it easy to estimate expected volumes in a year for different produce, which then enables buyers around the world to plan in advance. This means that a smallholder, has the market secured by the time they harvest.

It also streamlines the sourcing process, making it faster and less expensive with digitalized traceability. Buyers on the other hand specify what they want and are guaranteed consistent quality, fair price and volumes.

Selina Wamucii works with locally trained agents referred to as Produce Agents who guide farmers on good agricultural practices covering growing, harvesting, grading, collection and the eventual

transportation of the produce to designated zonal warehouses. The produce agents run fully-fledged businesses that guarantee profitable returns while offering an important service in the value chain.

“Our tech based model now heralds a new era of farming where our farmers will be able to practice smart farming. This is a refreshing departure from the ‘guesswork farming’ that has troubled millions of smallholder farmers here in Kenya and across the African continent. We’ll utilize the mobile phone, big data, artificial intelligence and the Internet of Things to transform Africa’s smallholder farming into a profitable business for all farmers in our system”, says John Orok the Co-Founder of Selina Wamucii and the company’s Chief Operating Officer.

Gathering market data has also assisted the company understand market dynamics allowing it to make reliable projections and avoiding uncertainties along the entire chain that would affect the farmer earnings.

“ For example, we noticed that our Hass avocados, which are very popular in the European market gain roughly 60 grams or so every week while on the tree after onset of the season and a delay in harvesting by 3 weeks leads to a larger fruit that better meets market requirements, since it is slightly bigger with a higher percentage oil content, and enters the market when the avocado season in Spain’s province of Malaga has just ended, leading to a very good market reception”, says Mr. Samuel Wanyoike, the company’s head of production.

With Africa looking up to its smallholder farmers who manage up to 80 per cent of its farmland to feed a burgeoning population estimated to reach 2 billion by 2030 even as the rest of the world look to the continent for food supplies, Selina Wamucii is looking at tapping



**Selina Wamucii works with locally trained agents referred to as Produce Agents who guide farmers on good agricultural practices**

into this demand by leveraging on the projected number of Africans working in agriculture, which is estimated to exceed 580 million, according to World Bank, and combine that with the ubiquitous power of technology to spur food production.

“How technology is used to efficiently intergrate Africa’s land resource and labor force into global food supply is the next frontier in matters food. We have embraced technology to ensure that we keep the chain efficient and pass the benefits of an efficient chain to both the farmers and fresh produce buyers,” said Kariuki Gaita, the CEO of Selina Wamucii.

The company now has its eyes trained on duplicating the model across the rest of African countries with a target of getting one million acres under its scheme. The start-up’s mobile technology makes it possible for the smallholder family farms to work in harmony, just like one huge farm.

“We have a very smart and dedicated team of young people working at Selina Wamucii, all born and brought up here. The team is working hard to see that Selina becomes the single largest provider of fresh produce in Africa - without owning a single farm,” Mr. Orok added.

The company has now received a \$100,000 grant from global social impact programme Expo Live to grow farmers’ reach.

Selina Wamucii will use the Expo Live grant to further develop its mobile platform and to acquire best practice and organic certifications to open up new markets and achieve even better prices for farmers.

The grant will also be used to recruit an additional 2,000 farmers to the platform, enabling Selina Wamucii to more than double its acceptance rate for buyers’ requests from the current 2.4 per cent to at least 5 per cent.



# Hortinews Directory



## Associations

Kenya Flower Council  
 Fresh Produce Exporters Association Of Kenya  
 Tanzanian Horticultural Association  
 Ethiopian Horticulture Producers Exporters  
 Kenya Horticulture Council

## Country

Kenya  
 Kenya  
 Tanzania  
 Ethiopia  
 Kenya

## Phone

254-733639523  
 254-20 205160333  
 255 (27)2544568  
 251-116636750

## Email

info@kenyaflowercouncil.org  
 info@fpeak.org  
 info@taha.or.tz  
 info@ethionet.et

## Flower Farms in Kenya

Region	Altitude
Lake Naivasha Region	6178ft
Nakuru Region	6070ft
Nairobi Region	5515ft
Athiriver-Kajiado Region	5649ft

Region	Altitude
Mt.Kenya Region	6358-7057 ft
Limuru-Rumuruti-Olkalau Region	6024-7802 ft
Kericho-Kitale-Eldoret Region	6060-6995 ft
Thika-Juja-Kiambu Region	5649 ft

## Breeders / Propagaters

ORGANISATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Dummen Orange	Flower Breeder	Mr.Steve Outram	254-733-609863	s.outram@dummenorange.com
Schreurs East Africa Ltd.	Flower Breeder	Mr.Haiko Backer	Tel:+254 203566135	sales@schreurskenya.com
Wac International	Flower Breeder	Mr.Richard Mcgonnell	254-722-810968	richard@wac-international.com
Florensis Hamer	Flower Breeding	Mr. Eddy Verbeek	020 50010	verbeek@florensis.com
Interplant Roses	Flower Breeding	Mr.Gavin Mouritzen	254-729-406668	info@interplantea.co.ke
United Selections	Rose Breeder	Mr.JellePosthumus	254-2-3656135	jposthumus@united-selections.com
Solo Plant Kenya Ltd	Breeding	Tomer Weiss	+254 (0)715 631 373	tomer@soloplant.co.ke

## 1. Lake Naivasha Region

ORGANISATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Florema(k)ltd	Begonia	Mr. perter maina	254-050-2021075	
Carzan flowers	Carnations	Mrs. Carol Manji	254707110030	info@carzankenya.com
Loldia	Cut flowers	Mr. Gary	0721 237936	
Longonot horticulture	Cut flowers	Mr. Shado rai	254-050501473	
Blue sky	Cut flowers	Mr. Mike	0720 005294	info@blueskykenya.com
Indu farm	Cut flowers	Mr. Wesley Koech	0715 546908	
Leekem holding ltd.	Cut flowers	Mrs. Margaret Muthoni	254-720-267004	leekement@gmail.com
Rainforest	Cut flowers	Mr.Fabian Philippart	0716 686998	fphilippart@fleurafrica.com
Savannah flowers	Cut flowers	Mr. Ignaitus lukulu	0728 424902	i.lukulu@savannahinternational.com
Star flowers	Cut flowers	Mr.dinkar	0722 203750	dinkar@vegpro-group.com
Subati	Cut flowers	Mr. Naren Patel	0712 584124	naren@subatiflowers.com
Wildfire flowers	Cut flowers	Mr.patrick mbugua	254-722-204669	office@wildfire-flowers.com
Aquila development company	Cut flowers	Mr.abhay marathe	254-722-205368	info@aquilaflowers.com
Beauty Line	Gypsophila	Mr.Peter Gathiaka	0722 676925	
Hamwe Ltd.	Hypericum	Mr.Adrew Khaemba	Tel: +254722431170	hamwe.production@kariki.biz
Sun Buds	Hypericum	Mr. Paul Kamau	Tel:+254 728339953	sunbudsltd@gmail.com
Oserian Development Company	Rose & Fillers	Mary Kinyua	Tel: +254 721299008	mary.kinyua@oserial.com
Oserian Flowers Limited	Carnations & Fillers	Mr.Hamish Ker	Tel: +254 722204701	md@oserialflowers.com
Colour Vision Roses Ltd	Rose Breeders	Mr.Peter Vandemeer	254-05050310	petervandemeer@terranigra.com
Rift Valley Roses	Roses	Mr.Peterson Muchiri	254-721216026	
Van Den Berg Roses	Roses	Loek Van Adrichem	+31 6 31 791 898	loek@bergroses.com

Aquilla	Roses	Mr.Yogesh	050 506609	info@aquilaflowers.com
Bigot Flowers	Roses	Mr.Jagtap K	254-722205271	jagtap.kt@bigotflowers.co.ke
Bila Shaka	Roses	Ms. Judith Zuubier	+254(0)72 220 4489	info@zuubier.com
De Ruiters	Roses	Fred Okinda	+254(0)722 579204	fred.okinda@deruiter.com
Finlay's Kingfisher	Roses	Mr. Charles Njuki	Tel: +254-724391288	Charles.njuki@flamingo.net
Galaxy	Roses	Mr. Kiran		kiran@vegpro-group.com
Groove	Roses	Mr.John Ngoni	Tel: 0724448601	groovekenya@gmail.com
Harvest Flowers	Roses	Mr Phanael Ochunga	0722 506026	phanael.ochunga@gmail.com
Karuturi Flowers	Roses	Mr.Sylvester Saruni	Tel: +254 722873560	henry.muller@karuturi.com
Kongoni Farm	Roses	Dinkar	0728 608785	dinkar@vegpro-group.com
Larmona	Roses	Fiona	254 722 564 089	fiona@lamornaflowers.com
Maridadi Flowers Ltd	Roses	Jack Kneppers	07-33333289	jack@maridadiflowers.com
Mbegu Farm	Roses	Mr. David Mousley	Tel:0722 833 122	mbegufarm@iconnect.co.ke
Nini Farm	Roses	Billy	254 723 786 003	billyc@ninitld.com
Shalimar Flowers (K) Ltd	Roses	Export Manager	0722 811832	info@eaga.co.ke
Stockman Rozen	Roses	Mrs. Sarah Tham	0720 603990	info@srk.co.ke
Twiga Roses	Roses	Mr.Pius Kimani	0721 747623	pius.kimani@gmail.com
Panda Flowers	Roses	Charkara	0786 143515	chakra@pandaflowers.co.ke
Finlay's Flamingo	Roses and Fillers	Mr.Peter Mwangi	Tel:+254 722204505	peter.mwangi@flamingo.net
Colour Crops	Summer Flowers			
Esmeralda Breeding	Summer Flowers	Mr.Loui Hooyman	31-297-385444	info@esmeraldabreeding.com
Multgrow Investments	Summer Flowers	Mr.Peter Murimi Mbugua	254-724-977259	peter_murimi@yahoo.com
Kentalya	Cut Flowers	Mrs.Lynette	0733 549773	lynette@kentalya.com

## 2. Nairobi Region

ORGANISATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Black Tulip Group	Cut Flowers	Mr.Mohan Choudhery	254-722-825429	info@blacktulipflowers.ae
Caly Flora Ltd .	Cut Flowers	Mrs.Catherine Gichungu	254 725456930	info@calyflora.co.ke
Everest Enterprises Ltd.	Cut Flowers	Mr.John Karuga	254-722-720876	jkaruga@everest.co.ke
Flora Delight	Cut Flowers	Mr.Marco Van Sandjik	254-722-384188	info@floradelightkenya.com
Particle Blooms Co. Ltd.	Cut Flowers	Mr.Caleb Amunga	254-704-040101	info@particleblooms.com
Phinna Flowers Ltd.	Cut Flowers	Mrs.Ruth Thuo	254-723-582476	phinnaflowers2014@gmail.com
Redhill Flowers	Cut Flowers	Mr.Isaac Bwire Ombunda	254-702-344047	redhillflowers@yahoo.com
Rose Bunk International	Cut Flowers	Mr.Nahashon Macharia	254-773-754140	nahashon@rosebunkintl.com
Sian Agriflora Ltd	Cut Flowers	Mr.Jos Van Der Venme	254-725-961961	info@sianroses.co.ke
The Flower Hub	Cut Flowers	Mr.Stephen Swainston	254-722-509970	info@theflowerhub.com
Tripple F Agencies	Cut Flowers	Mr.Amos N. Wakiria	254-735-405982	wakiria@fagencies.co.ke
Van Kleef Kenya	Cut Flowers	Mrs.Judith Zuurbier	254-722-364943	judith@vankleef.nl
Winchester Farm	Cut Flowers		254-0722-203630	info@mzurrieflowers.co.ke
Zaina Blooms	Cut Flowers	Mr.Michire Mugo	254-736-080070	zainablooms@gmail.com
Credible Blooms	Roses	Mr.Francis	020 2102019	info@credibleblooms.co.ke
Flamingo Flora	Roses	Sam	254-0721993857	s.ivor@flamingoflora.co.ke
Karen Roses	Roses	Mrs.Juliana Rono	254-722-717187	sales@karenroses.com
Kreative Roses Ltd.	Roses	Mr.Bas Smit	254 733501640	info@kreative-roses.com
Lakshmi Group Ltd.	Roses	Mr. Serghei	254 714551969	serghei.lakshmigroup@gmail.com
Magana Flowers	Roses	Mrs Ann Gitari	254-20-2017651	marketing@maganafloowers.com
Magnate Flowers	Roses	Mrs.Gladys Muthoka	254-722-777051	magnateflowers@gmail.com
Mzurrie Flowers	Roses	Mrs.Irne Njeru	254-722-203630	irene@winchester.co.ke
Shallimar Flowers Ltd	Roses	Mrs.Elizabeth Wahogo	254-738-391832	elizabethw@eaga.co.ke

## 3.Mt.Kenya Region

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Mount Kenya Alstroemeria	Nanyuki	Cut Flowers	Mr.Edwin Van Der Veen	254-718-240581	info@mountkenyaalstroemeria.co.ke
Bondet	Nanyuki	Erygium	Richard Fernandes		

Kariki Limited	Nanyuki	Hypericum		0722 50 99 19	info@kariki.biz
Live Wire Ltd	Nanyuki	Hypericum And Lilies	Mr.Esau Onyango	0728 606872	info@livewire.co.ke
Finlays Sirimon	Timau	Lilies	Ms.Purity Thigira	0733606411	purity.thigira@finlays.net
Batian Fowers	Timau	Roses	Mr.G.Muriungi/Dirk Looj	0720 102237	dirk@batianflowers.com
Bloomingdale Roses	Timau	Roses	Mr.Sunil Chaudhari	0732 373322	sunil@bloomingdaleroses.com
Bogmack Farm	Timau	Roses	Mr.Anderson	0722 350020	kathendusn@yahoo.com
Equinox	Timau	Roses	Mr. Rod Jones	+254 722 204271	rod.jones@equinoxflowers.com
Fides Kenya Ltd	Embu	Roses	Mr.Francis Mwangi	254-06830776	info@fideskenya.com
Lobelia Farm	Timau	Roses	Mr.,Peter Viljoen	254-06241060	
Lolomarik	Nanyuki	Roses	Mr. Topper Murry	0715 727991	topper@lolomarik.com
Protea Farm	Timau	Roses	Mr.Philip		info@lobelia.co.ke
Sunland Roses	Timau	Roses	Mr.Peter Viljoen	254-702-095696	sales@sunlandroses.com
Tambuzi	Nanyuki	Roses		+254 (0)722 716 158	tambuzi.sales@tambuzi.co.ke
Timaflor Ltd.	Timau	Roses			info@timaflor.nl
Timau Flair	Timau	Roses	MR.Philip Ayiecha	254-723383736	
Uhuru Flowers	Timau	Roses	Mr. Ivan Freeman	Tel:+254722863252	ivan@uhurufowers.co.ke
Vegpro-K Ltd	Timau	Roses	Mr.Vivek Sharma		vivek@vegpro_group.com
Kisima	Timau	Roses and Lilies	Mr.Martin Dyer	+254 (0)722 509 830	info@kisima.co.ke

## 4. Nakuru Region

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Bliss Flora Ltd.	Nakuru	Cut Flowers.	Mr.Shivaji Wagh	254-720-895911	shivaniket@yahoo.com
Carzan	Rongai.	Cut Flowers.	Francis	254-0720 890920	info@carzankenya.com
Kudenga Flowers	Mau Summit	Cut Flowers.	Mr.Joseph Juma	254-0725 643942	kudenga.fm@kariki.biz
Molo Greens Ltd	Molo North	Cut Flowers.	Mr.Justus Metho	254-722-755396	info@mologreens.com
Molo River Roses	Museruchi	Cut Flowers.	Mr.Alice Mureithi	254-0724 256592	andrewwambua@yahoo.com
Roseto Limited	Rongai	Cut Flowers.	Mr.Yogheesh		farm.florenza@megaspingroup.com
Kariki Limited	Molo	Hypericum		+254 722 50 99 19	info@kariki.biz
Amor	Nakuru	Roses	Mr.Ketan Jerath	254-738-119774	flowers@xflora.net
Baraka Farm	Nakuru	Roses	Lucy	254-0720 554106	lucy@barakaroses.com
Buds&Blooms-Bliss Flora	Nakuru	Roses	Mr.Shivaji	254-0720 895911	shivaniket@yahoo.com
Elbur Flora	Elburgon	Roses	Peter Kairu	254-51343473	eflora@africaonline.co.ke
Fontana Ayana	Nakuru	Roses	Mr.Gideon Maina	254-0721178974	gideon@fontana.co.ke
Fontana-Akina	Nakuru	Roses	Mr.Girish Appana	254 722728441	girish@fontana.co.ke
Kimman Roses Ltd.	Elburgon	Roses	Mr.Daniel Moge Maina	254-721-734104	kimmanexp@gmail.com
Mau Flora	Nakuru	Roses	Mahesh	254-0787 765684	mahesh@mauflora.co.ke
Milmet	Nakuru	Roses	Pravin		pravinyadav.29@gmail.com
Omang-Africa	Nakuru	Roses	Mr.Inder Nain	254 733724029	flowers@xflora.net
Porini	Nakuru	Roses	Mr.Pitambar Ghahre	254-0726 774955	porini@isinyaroses.com
Pp Flora	Nakuru	Roses	Prakash	254-0718 045200	info@fantasy-flora.com
Preesman Kenya	Nakuru	Roses	Michael Kikwai	254-0720574011	kikwai1980@yahoo.com
Ravine Roses	Nakuru	Roses	Mr.Peter Kamuren	254-0722 205657	pkamuren@karenroses.com
Redwings	Kabarak	Roses	Mr.Sayer Simon	254-0722 578684	sayer@redwingtld.co.ke
Subati Flowers	Subukia	Roses	Mrs. Jennifer Sassi	+254 742 144493	jennifer@subatigroup.com
Vankleef	Nakuru	Roses	Judith Zuurbier	254-0722 364943	judith@vankleef.nl
Xpression Flora Ltd.	Njoro	Roses	Mr.Mangesh	Tel: 720519397	info@xflora.net
Sian Agriflora (Sian Roses)	Nakuru	Roses/Lilie	Mr.Jos Van Der Venne	254 722203630	info@sianroses.co.ke
Jatflora	Gilgil	Summer Flowers	James Oketch	254 724418541	jatflora@gmail.com
Morop	Bahati	Summer Flowers	Wesley Tonui	254-0720 983945	
Flora Ola	Solai		Mr.Wafula	Tel: 0708382972	floraolald@gmail.com

## 5. Thika -Juja-Kiambu Region

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Zena Roses	Thika	Carnations,Roses	Mr.Rakesh	Tel: 0724631299	info@zenaroses.com
Selecta Kenya/Kpp	Juja	Cut Flowers	Mr.Wilson Kipketer	020 352557	w.keter@selectakpp.com
Pollen Sygenta Ltd.	Ruiru	Cuttings	Mr Daniel Kisavi	Tel: 733603530	Daniel.kisavi@sygenta.com
Munyu Growers	Thika	Flower Grower & Exporter	Mr.Muthom Ngaru	254-721-956307	munyugrowers@gmail.com

Riverdale Blooms Ltd swiftkenya.com	Thika	Flower Grower & Exporter		Mr.Antony Mutugi	020 2095901	rdale@
Kariki Limited	Thika	Hypericum		+254 722 50 99 19		info@kariki.biz
Transebel Ltd	Thika	Roses	Brian Wahome	+254 722 255322		brianwahome@transebel.co.ke
Enkasiti Flowers	Thika	Roses	Mr.Thambe	Tel:+254 724722039		enkasiti@gmail.com
Gatoka Farm	Thika	Roses	Christopher Gacheru	+254 733 619505		chris@gatokaflowers.com
Penta Flowers Ltd.	Thika	Roses	Mr. Tom Ochieng	Tel:+254 733625297		tom@pentaflowers.co.ke
Simbi Roses Ltd.	Thika	Roses	Ms.Pauline Nyachae	Tel: +254204448230		Pauline@sansora.co.ke
Windsor Ltd	Thika	Roses	Mr.Pardeep	254-0674208		farm@windsor-flowers.com
Ever Flora Ltd.	Juja	Roses	Mr.Khilan Patel	Tel: 0675854406		everflora@dmbgroup.com
Kenflora	Kiambu	Roses	Mr,Aleem Abdul	254-722311468		info@kenflora.com
Valentine Kibubuti	Kiambu	Roses	Mrs. Suzan Maina	Tel:0203542466		info@valentineflowers.com
Red Lands Roses Ltd.	Ruiru	Roses	Mrs.Isabelle Spindler	254-733-600504		gm@redlandsroses.co.ke
Branan Flowers Ltd.	Thika	Roses Growers	Mr.Brian Wahome	254-734-424648		brianwahome@transebel.co.ke

## 6. Kajiado – Athi-River Region

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Carnation Plants Ltd	Athi River	Carnations	Mr.E.Fieldman	254-2045162	evi@exoticfields.com
Waridi Ltd	Athi River	Roses	Mr.Pd Kadlag	254-724407889	kadlag@waridifarm.com
Harvest Flowers	Athiriver	Roses	Monicah	+254 722294963	salesadmin@harvestflowers.com
Shade Horticulture	Isinya	Cut Flowers	Mr.Ashutosh Mishra	254-0722 792018	
Desire Flora K.Ltd.	Isinya	Roses	Mr.Rajaat Chaohan	Tel: +254 0724264653	rajatchaohan@hotmail.com
Isinya Roses	Isinya	Roses		+254 728 689 000	info@isinyaroses.com
Maua Agritech	Isinya	Roses	Mr.Kori	254-722206318	gm@mauaagritech.com
P.J. Dave	Isinya	Cut Roses	Mr.Ananth Kumar	254-729-405450	marketing@pjdave.com
Maasai Flowers	Kitengela	Roses		+254 714 065 245	
Charm Flowers	Kitengela	Roses	Sales Manager	+254 733 753149	admin@charmflowers.com
Maua Agri Tech Ltd	Kitengela	Cut Flowers		254 0722206318	kori@mauaagritech.com
Rose Plant	Kitengela	Roses	Mr.Atenus		
Sian Maasai Flowers	Kitengela	Roses	Mr.Andrew Tubei	254-722728364	atubei@sianroses.co.ke
Sian Roses	Kitengela	Roses	Mr.Jos Van Der Venne	254-0202170540	info@sianroses.co.ke
Afriscan Kenya Ltd.	Kiserian	Cut Flowers	Mr.Charles Mwangi	254-722-711925	charles.mwangi@afriscan.co.ke
Kordes Roses East Africa Ltd info@kordesroses-ea.com		Masai West Road	Roses	Mr.Christian Meuschke	254-0733 363642
Ngong Roses	Ngong	Roses	Mr. Charles Maina	020 2700660	ngongroses@capstoneonline.co.ke

## 7.Limuru-Rumuruti-Olkalau Region

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Tropiflora	Limuru	Carnations	Mr. Krasensky	254 0724646810	
Leekem Holdings Ltd	Nyandarua	Cut Flowers	Mrs.Margaret Muthoni	254-0720 267004	leekement@gmail.com
Tegmak Bloom	Nyandarua	Cut Flowers	Mr.Edward Kaguchu	254-722-292242	tegmakbloomsLtd@gmail.com
Highlands Plants	Olkalau	Cut Flowers	Mr. Leonard Kanari	254-0721345829	sales@highlandplants.co.ke
Aaa Roses	Rumuruti	Cut Flowers	Ms.Jennifer Sassi	254-20-4453970	sales@aaagrowers.co.ke
Terrasol	Limuru	Cuttings		254-0722 455996	
Black Petals Ltd.	Limuru	Roses	Mr.Nizra Junder	254-0722848560	nj@blackpetals.co.ke
Elbur Flora	Elburgon	Roses	Peter Kairu	254-51343473	eflora@africaonline.co.ke
Kimman Roses Ltd.	Elburgon	Roses	Mr.Daniel Moge Maina	254-721-734104	kimmanexp@gmail.com
Suera Flowers Limited	Nyahururu	Roses	Mrs.Peris Wanbui Mureithi	254-724-082797	perismureithi@yahoo.com
New Hollands Flowers	Olkalau	Roses	Mr. Francis	254-0700718570	
Golden Tulip	Olkalau	Roses	Umesh	254-0739729658	
Mahee Flowers Ltd	Olkalau	Roses	Vijay Kumar	254-020822025	info@eaga.co.ke
Africa Blooms	Rumuruti	Roses	Samir Chandokrkar	254-0735-384552	
Primarosa Flowers	Nyahururu	Roses	Mr.Vishal Metha	254-734-88223	mvishal@primarosaflowers.com
Flora Delight	Limuru	Summer Flowers	Mr.Hosea Andanyi	254-0724373532	hosndai@yahoo.com
Kemaks Blooms Limited	Aberdare Ranges	Summer Flowers	Mr.Peter Gakuna	254-792-705160	kemaksblooms@gmail.com
Hatabor Rainbow Blooms	Limuru	Cut Flowers	Mr.John Ndungu	254-07213850959	

## 8. Kericho-Eldoret-Kitale

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Maji Mazuri	Eldoret	Roses		+254 722 203631	info@mzurrieflowers.co.ke
Zena-Asai	Eldoret	Roses		+254 722 935 798	info@zenaroses.com
Zena-Sosiani	Eldoret	Roses		+254 722 935 798	sales@zenaroses.co.ke
Equator Flowers	Eldoret	Roses	Mr.Charles	254-0721 311 279	cmutemba@sianroses.co.ke
Sirgoek Flowers	Eldoret	Cut Flowers	Mr.Andrew Kosgey	254-0725 946429	sirgoek@africaonline.co.ke
Finlay Chemirel	Kericho	Roses	Mr.Aggrey Simiyu	254- 0722601639	aggrey.simiyu@finlays.co.ke
Finlay Lemotit	Kericho	Cut Flowers	Mr. Richard Siele	254-0721 486313	richard.siele@finlays.co.ke
Mount Elgon Orchards Ltd	Kitale	Roses	Bob Andersen	254 0735330592	info@mtelgon.com
Panocal International Ltd.	Kitale	Cut Flowers	Mrs.Mercy Njuguna	254-721-637311	mercy.njuguna@panocal.co.ke



## Growers In Uganda

NAME	PRODUCT	LOCATION	CONTACT PERSON	PHONE	EMAIL
Rosebud	Roses	Wakiso	Ravi Kumar	0752 711781	ravi.kumar@rosebudlimited.com
Maiye Estate	Roses	Kikwenda Wakiso	Premal		premal@maiye.co.ug
Jambo Flowers	Roses	Nakawuka Sisia Wakiso	Patrick Mutoro	(254)726549791	pmutoro80@yahoo.co.uk
Pearl Flowers	Roses	Ntemagalo Wakiso	Raghibir Sandhu	0772 725567	pearl@utlonline.co.ug
Aurum Flowers	Roses	Bulega-Katabi Wakiso		Kunal Lodhia Shiva	0751 733 578 kunal@ucil.biz
Eruma Roses	Roses	Mukono	Kazibwe Lawrence	0776 049987	kazibwe@erumaroses.com
Uga Rose	Roses	Katabi Wakiso	Grace Mugisha	0772 452425	ugarose@infocom.co.ug
Kajjansi	Roses	Kitende Wakiso	K.K Rai	0752 722128	kkrai@kajjansi-roses.com
Uganda Hortech	Roses	Lugazi Mukono	Hedge	0703 666301	mdhedge@mehtagroup.com
Fiduga	Chrysanthemums	Kiringente, Mpingi	Jacques Schrier	0772 762555	j.schrier@fiduga.com
Royal Van Zanten	Chrysanthemums	Namaiba Mukono	Jabber Abdul	0759 330350	j.abdul@royalvanzanten.com
Wagagai	Impatiens-Poinstia	Iwaka Bufulu Wakiso	Olav Boender	0712 727377	olav@wagagai.com
Xclusive Cuttings	Chrysanthemums	Gayaza-Zirobwe Road	Peter Benders	0757 777700	pbenders@xclusiveuganda.com



## FLOWER AND VEGETABLES FARMS IN TANZANIA

### lower Farms in Tanzania

NAME	PRODUCT	LOCATION	CONTACT PERSON	PHONE	EMAIL
Kilifi Flora	Roses	Arusha	Jerome Bruins	255 27-2553633	jbruins@habari.co.tz
Mt. Meru	Roses	Arusha	Tretter	255 27 2553385	office@mtmount-meru-flowers.com
Tengeru Flowers	Roses	Arusha		255 27 2553834	teflo@africaonline.co.tz
Hortanzia	Roses	Arusha	Michael Owen	255 784 200 827	hortanziagm@cybernet.co.tz
Kilimanjaro Flair	Hypericums	Arusha	Greg Emmanuel	255 784 392 716	greg@kilimanjaroflair.com
Multi Flower Ltd	Crysanthemums	Arusha	Tjerk Scheltema	255 27 255 3138	
Fides	Crysanthemums	Arusha	Greg Emmanuel	255 27 255 3148	fides@habari.co.tz
Dekker Bruins	Crysanthemums	Arusha	Lucas Gerit	255 27 255 3138	info@tfl.co.tz
Arusha Cuttings	Crysanthemums	Arusha	Tjerk Scheltema	255 27 250 1990	tjerk@arushacutting.com



# ETHIOPIAN HORTICULTURE PRODUCERS EXPORTERS

## Flower Growers in Ethiopia

NAME	PRODUCT	LOCATION	CONTACT PERSON	PHONE	EMAIL
Lisen Flowers	Roses	Holeta	Peter Linsen		elinsensose@ethionet.et
Hanja	Roses	Holeta	Holeta		peter.pardoen@karuturi.com
Alliance Flowers	Roses	Holeta	Navale		navele@nehainternational.com
Ethio Dream Rishi	Roses	Holeta	Holeta	011 23 72335	holeta@jittuhorticulture.com
Holeta Roses Navale	Roses	Holeta	Holeta		navele@nehainternational.com
Supra Flowers	Roses	Holeta	Kaka Shinde	0911 353187	kakashind@rediffmail.com
Agriflora	Roses	Holeta	M.Askokan	0922 397760	flowers@ethionet.et
Ethio-Agricert	Roses	Holeta	Alazar	0910 922 312	alazar@yahoo.com
Addis Floracom P.L.O	Roses	Holeta	Kitema Mihret	0912 264190	tasfaw@addisflora.com
Enyi-Ethio	Roses	Sebata	Teshale	0911 464629	enyi@ethionet.et
Lafto Roses	Roses	Sebata	Andrew Wanjala	0922 116184	irrigation@laftorose.com
Eden Roses	Roses	Sebata	Vibhav Agarwal	0930 011228	vaibhavaggarwal1@hotmail.com
Ethio-Passion	Roses	Sebata			roshanmuthappa811@gmail.com
Golden Rose	Roses	Sebata	Sunil		
E.T Highlands	Roses	Sebata		0911 502147	bnf2etf@ethionet.et
Sharon Flowers	Roses	Sebata			saronfarm@ethionet.et
Selam Flowers	Roses	Sebata	Etsegenet Shitaye	0913 198440	etsgshita@yahoo.com
Joy Tech	Roses	Debra Zyeit	Mulugeta Meles	0911 302804	mulugeta@joytechplc.com
Dugda Froliculture	Roses	Debra Zyeit	Sayalfe Adane	0911 504893	general@dugdaflora.com.et
Minaye Flowers	Roses	Debra Zyeit	Eyob Kabebe	011-9728667/8/9	minayefarm@ethionet.et
Bukito Flowers	Roses	Debra Zyeit	Anteneh Tesfaye	0911 615571	
Oilij	Roses	Debra Zyeit	Bas Van Der Lee	0911 507307	b.vanderlee@oilijethiopia.com
Yassin Flowers	Roses	Debra Zyeit	Tesfaye Gidisia	0911 897856	kamevision@yahoo.com
Z.K Flowers	Roses	Debra Zyeit	Abebe Mamo	911526529	abemic/2006@yahoo.com
Friendship Flowers	Roses	Debra Zyeit	Edwin	(251) 911304967	friendship.flowers@yahoo.com
Evergreen Farm	Roses	Debra Zyeit	Hiwot	0912 125065	Hiwot.Ayaneh@yahoo.com
Rainbow Colours	Roses	Debra Zyeit	Tedessa Kelbessa	0911 389729	rainfarm@yahoo.com
Sher	Roses	Ziway	Ramesh Patil 0912 131940		
Braam Farm	Roses	Ziway	Ben Braam 0920 746270		
Sher Koka Farm	Roses	Ziway	Alemitu Biru 0912 097824		
Ziway Roses	Roses	Ziway	Ermiyas Solomon	0921 094373	ermiasziwayroses@yahoo.com
Herbug	Roses	Ziway	Hubb	hubb@herburgroses.nl	
Aq	Roses	Ziway	Wim	wimjr@aqroses.com	
Margin Par	Hypericum	Ziway	Hayo Hamster	251 911505845	marginpar@ethionet.et
Tal Flowers	Gypsophila	Ziway	Uri	uridago@walla.co.il	
Ewf Flowers	Hydragium	Ziway	Humphrey 0920 351931	production-manager@ewf-flowers.com	
Red Fox	Pelargoniums	Ziway	Michael Zevenbergen	0911 490023	m.zevenberge@ethiopia.redfox.de
Abssinia Flowers	Hypericum	Ziway	Sendafa	ggh_link@ethionet.et	
Ethiopia Cuttings	Geraniums	Koka	Scoff Morahan		scott.moharan@syngenta.com
Florensis Ethiopia	Buding Plants	Koka	Netsanet Tadasse		flrdnsis@ethionet.et
Maranque	Crysenthemums	Merjetu	Mark Drissen	(251) 221190750	md@maranqueplants.com
Freesia Ethiopia	Freesia And Statice	Sebata	Ronald Vijverberg	(251) 115156259	freesia@ethionet.et
Yelcona	Hypericum	Sebata	Andreas	0921 146930	Andreasndieolens@hotmail.com

## Fruit, Herbs and vegetable Fruits In Kenya

COMPANY	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
AAA Growers	Nairobi	Horticulture	Mr.Neville Ratemo	020-4453970-4	admin@aaagrowers.co.ke
Belt Cargo Services Export Ltd	Nairobi	French Beans, Babycorn	Mr.J.Muigai	020-4448821	bcs@beltcargo.com
Best Grown Produce(K)Ltd			Mr.Paul Mugai	020-4448821	bestgproduce@yahoo.com
Chirag Kenya Ltd	Nairobi	Spces And Herbs	Sales Team	254-203573000	naturesown@swiftkenya.com
Canken International Ltd	Eldoret	Chillies And Fruits	Mr.Mohamed	020-222736367	canken@cankencargo.com
Darford's Enterprises Ltd	Nairobi	Vegetables	Mr.Abdul	254-206622857	abdulkarim@darfords.co.ke
Delmote Kenya Ltd	Thika	Fruits	Sales Manager	020-672141600	nanasi@freshdelmonte.com
Pj Dave Epz Ltd	Nairobi	Dried Herbs And Roses	Import And Export Manager		020-3542012 pjdaveflowers@wananchi.com
Dominion Vegfruits Ltd	Nairobi	Fruits And Vegetables	Mr.John Mairura	020-823002	vegfruits@wananchi.com
East African Growers Ltd	Nairobi	Fruits And Vegetables	Mr.Peeush Mahajan	020-822034/25	peeush@eaga.co.ke, george@eaga.co.ke
Equitorial Nut Processors Ltd	Nairobi	Macadamia Nuts	Sales Managers	020-2030196	gatua@equatorialnut.co.ke
Everest Enterprises Ltd	Nairobi	Fruits And Vegetables	Mr.John Karuga F	020-3542009	smuhoho@everest.co.ke
Fian Green Kenya Ltd	Nairobi	Fruits And Vegetables	Mr.Francis Thuita	020-826157	info@fiangreens.co.ke
Fresh An Juici Ltd	Nairobi	Fresh And Vegetables	Ms.Maleka Akaberali	020-826090	maleka@freshanjuici.co.ke
Fresco Produce Ltd	Nairobi	Vegetables	Mr.Charles Mbugua	254-0722-764395	mbugua@freshproduce.co.ke
Frigoken Ltd	Nairobi	Fruits And Vegetables	Mr.D.Karim	020-2391717	frigoken@africaonline.co.ke
From Eden Ltd	Nairobi	Vegetables	Mr.Zulfikar Jessa	020-8562203	roy@from-eden.com, zul@tilleygroup.com
Global Fresh Ltd	Nairobi	Vegetables And Fruits	R.Chaudhry	020-82749/50	info@globalfresh.co.ke
Green Kenya Organization	Nairobi	Onions And Tomatoes	Charles Butiko	254-723119111	greenkenya28@gmail.com
Greenlands Agro Producers Ltd	Nairobi	Fruits And Vegetables	Mr.G.Murungi	020-827080/1/2	murungim@greenlands.co.ke
Highlands Cannners Ltd	Nairobi	Fruits And Vegetables	Sales Manager	020-8564048	info@highlandcannners.co.ke
Hillside Green Growers Ltd		Fruits And Vegetables	Ms.Eunice Mwongera	020-2397353	eunice@hillsidegreen.com
Homegrown Kenya Ltd	Nairobi	Flowers And Vegetables	Mr.Richard Fox	020-3873800	richard.fox@f-h.biz
Indu Farm Epz Ltd	Nairobi	Vegetables	General Manager	254-20-550215/6	info@indu-farm.com
Jakal Services Ltd	Mombasa	Fruits And Spices	Mr.Bandali	254-7412229435	jakal@ikenya.com
Jungle Macs EPZ Ltd	Thika	Fruits And Vegetables	Sales Manager	020-2451841	info@junglemacadamias.com
Jetlak Foods Ltd	Ruiru	Fruits And Vegetables		254-722754181	mail@jetlak.com
Indu Farm Epz Ltd	Nairobi	Fresh Fruit And Vegetables	Mr.Christian Bernard	020-550215/6/7	info@indu-farm.com
Kakuzi Ltd	Thika	Fruits, Nuts, Tea	Mr.Richard Collins	060-2033012	rcollins@kakuzi.co.ke
KHE (1977)Ltd	Nairobi	Fresh Fruit And Vegetables	Mr.Manu Dhanani	020-2517979	khe@khekenya.com
Kandia Fresh Produce Suppliers Ltd	Nairobi	Fruits And Vegetables	Ms.Lucy Mundia	020-3500866	kandia@swiftkenya.com
Kenya Orchards Ltd	Nairobi	Fruits And Vegetables	Sales Manager	254-2054161	
Keitt Exporters Ltd	Nairobi	Fresh Fruit And Vegetables	Asif Aman	020-822829	asif@keitt.co.ke
Mace Foods Ltd	Eldoret	Vegetables	Sales Manager	254-720391290	info@macefoods.com
Mugama Farmers	Murang'a	Vegetables	Sales Team	254-728-358211	mugamaunion@yahoo.co.uk
Makindu Growers And Packers Ltd	Nairobi	Passion Fruit	Mr.O.P.Bij Okra	020-822812/196	info@makindugrowers.co.ke
Meruherbs		Organic Producers	Marketing Manager	254-20-4442081	meruherbs@meruherbs.com
Muount Elgon Orchard Ltd	Kitale	Orchards	Bob Andersen	254-5431352	info@mtelgon.com
Mboga Tuu Ltd	Nairobi	Chillies And Vegetables	Mr.J.Kent	020-3877988	mtl@wananchi.com
Mixa Foods And Beverages	Kisumu	Fruits And Milk	Charles O.Odira	254-733-714584	info@mixafoods.co.ke
Mosi Ltd	Juja	Fruits	Rose Wahome	254-722204911	mwaiwahome@mosiflowers.com
Migotiyu Plantations Ltd	Nakuru	Herds And Seed Production	Mr. Rao	051-2214898	alphegaisal@wananchi.com
Namelok Exotic (K) Ltd			Mr. Sinkeet	0724-743258	info@namelokexotic.com
Njambiflora Ltd		Vegetables	Njambi	020-822506/7	njambiflora@yahoo.co.uk
Nicola Farms Ltd	Nanyuki	Fresh Fruit And Vegetables	Ms. Grace Wanjiku	020-2048874/76	marketing@nicola.co.ke
Olivado Kenya EPZ Ltd	Nairobi	Avocado	Nairobi General Managers	020-710-535303	gh@tanlay.com
Saw Africa EPZ Ltd	Thika		General Manager	254-722531106	wainana_patrick@yahoo.com
Sacco Fresh Ltd	Nairobi	French Beans	Mr.Muia	020-824687/8	info@sacco-fh.com
Shree Ganesh Ltd	Nairobi	Vegetables And Onions	Mr. Kanji Kalyan Patel	020-80243645	meleka@freshanjuici.co.ke
Sian Agiflora Kenya Limited	Nairobi	Calla Lillies	Ms. Angelina Mangat	020-822220	rano@sianexports.com
Syngenta EA Ltd	Nairobi	Seeds	Sales Manager	254-203222800	synjenta.east_africa@synjenta.com
Sunripe (1976) Ltd	Nairobi	Fresh Fruit And Vegetables	Mr. Hasit Shah	020-822518/822879	info@sunripe.co.ke
Value Pak Foods Ltd	Nairobi	Fruits And Vegetables	Mrs. Patel	020 2695633	valuepak@wananchi.com
Valentine Growers Co Ltd	Kiambu	Vegetables	Sales Team	254-720203765	info@valentine-flowers.com
Vegpro Kenya Ltd	Nairobi	French Beans	Mr. Bharat.Patel	020-822831-4	bharat@vegpro-group.com
Wamu Investments Ltd	Nairobi	Fresh Fruit And Vegetables	Mrs. Peris Muriuki	020-822441	peris@wamu-investments.com

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