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Horti News

Growing Ideas

IFTEX 2016
INTERNATIONAL FLOWER TRADE EXPO

ISSUE NO. 44 KSH 300

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ELGON KENYA LIMITED

12 kenya flower council QUALITY ASSURED @20

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|| HORTISPOT||

Talking to a number of growers who HortiNews interviewed, the industry is chocking under a catalogue of woes that are eroding the impressive gains it has made over the years.

Pay attention to grower concerns

The numbers 30 and 60 represent more than arithmetic in Kenya's flower industry. Behind the figures lies the larger than life story of a journey the Kenyan flower has traveled for over three decades to capture the hearts and markets of 60 countries even as demand in traditional markets flattens.

International media has christened the industry as the Flower Garden of Europe while celebrating the methodical approach growers invest in to produce a world class flower.

Indeed cost intensive investments like Integrated Pest Management, hydroponics and environmental friendly innovations have midwifed the Brand Kenya Flower that has caught world attention; a responsibly grown flower that competes on quality, environmental protection and concerns about people. Little wonder then the world cannot get enough of it.

A stamp of authority has been imprinted in the industry following the towering of the Kenya Flower Council Silver Standard over other international marks of quality in a recent benchmarking by the International Trade Centre under the Global Compliance Programme. Add to this statistics indicating Kenya is now the second largest flower business country after Ecuador, up from number four and the image of a work conquering nation forms.

Yet behind the rosy picture, it is a labour of love for hundreds of growers in the country who sit and watch as systems and processes crumble. Contrary to dominant perception, the industry is no longer as lucrative.

Talking to a number of growers who HortiNews interviewed, the industry is chocking under a catalogue of woes that are eroding the impressive gains it has made over the years. The growers posit that the cost of doing business in the country has reached unsustainable levels. From spiraling energy costs, to transportation charges, the growers are hemorrhaging. One grower told us that transporting flowers from the pack house to markets accounts for 30 per cent of their expenses.

Then there are the never ending delays in VAT refunds that has even caught the president's eye for which he has ordered fast tracking. Taxation by both national and county governments has never been amicably resolved. Such cocktail of complaints have seen The Kenya Flower Council reporting growing anxiety among growers and associated businesses on the cost of doing business. The chorus among growers is that flower growing is no longer a profitable undertaking. This coming at a time when other flower growing countries have waged a trade war with Kenya to break our dominance in a market that has 'matured' in terms of supplies leaving little room for expansion at producer level.

Ethiopia has given Kenya a run for its money. Its government has instituted proactive policies that have put flower growers at the heart of its agenda. From making state owned land available to flower farms at reasonable prices and near the airport, to tax exemptions on inputs and access to financing, it's little wonder the Ethiopians are flourishing.

We still can rediscover our shine. Policy makers need to be alive to the woes of the growers who have invested time, energy, resources and a lifelong of passion to lift the country's fortune and fame. Government needs to cut through the fog and get to the heart of the issue. What Ethiopia is doing is and can easily be done here. A conducive business environment that addresses the growers concern is all the government needs to do, and leave the growers to concentrate on the business of producing flowers which they have demonstrated to the world that they can comfortably do.

Catherine Riungu **catherine@hortinews.co.ke, @catherineriungu**

Online tool increases farmers' uptake of seeds

Mbegu Choice App is vailable on Google play and can be downloaded for free

Paul Wanyaga, the CEO of Kenya Markets Trust that supplies Mbegu Choice during the launch of the Online tool

By B0B KOIGI

Smallholder farmers, long buffeted by lack of the right seed varieties, have found a new ally in an online tool that allows them to access over 237 seed varieties mapped by the farmers' ecological zones within minutes.

Mbegu Choice, the online tool, has mapped seed varieties for all 47 counties and is the first of its kind in Sub Saharan Africa. It allows a smallholder farmer get information on the specific seed variety that would do well in their area while allowing them to choose other attributes that may interest them. These include pest resistance, drought tolerance, and cooking time among others.

"Since its launch last year the growth in interest among farmers has been impressive and at times because we launched its app, we get surprised to find that people in the villages are actually accessing and using it frequently," said Ronald Misigo, the ICT Manager at Agri Experience, the company behind Mbegu Choice and one of the brains behind the tool.

The online database currently has 237 commercialized crop varieties and is also being used by agro dealers and extension officers.

Farmers log into the portal www.mbeguchoice.com from where they are able to key in basic information like their county, the crop they are interested in, the planting seasons their county experiences and the desired crop attributes like pest resistance or drought tolerance.

MbeguChoice then generates a list of suitable seed varieties along with the names of the seed companies producing and distributing them.

For example, a farmer in Kakamega interested in farming climbing beans keys in their details including the ecological zones. At the click of a button, the portal returns results of the six climbing beans varieties that suits the area. In this case they include MAC 13, MAC 16, MAC 64 and Flora among others. The portal also shows the farmer the year the breed was released, maturity period of each variety and which seed company sells it.

But the service is also a major score for the agro dealers who have had to traditionally struggle with limited information on what to recommend farmers as seed companies bombard them with numerous varieties. Farmers have traditionally relied on them for guidance. Agrodealers however at times face the wrath of the farmers if the farmers plant and not get results.

'Absentee farmers', the urban dwellers who trace their roots to the village and whose families are actively involved in agriculture in rural areas have been targeted by the service. Most of them on pass information on what agro inputs their farming families should use. Valentine Okoth a commercial officer in Nairobi is an example. " I moved out of home to get a job which I thankfully have. But I am still part of the farming back in the village. Currently we are not happy with seed production at the moment and how our families are struggling to access them," Okoth said.

The tool has also introduced the Swahili version to target more farmers while holding demonstration plots to introduce farmers to new varieties and walk them through the use of the tool.

"We are talking about farmers who have been stuck in age old seed varieties and farming practices. To change behaviour, like telling them that a new variety can double or more than double their yields is a tall order. It requires demonstrations. But we are glad it is working. It is the first step in ending the hunger cycle in our country," Misigo said.

The tool comes at a time when smallholder farmers, the bulk of Kenya's food producers, have been recording dwindling yields occasioned by obsession with seed varieties that they have used from the colonial times and the farmers planting "out of position" which means that most of the varieties they plant have not been bred for their planting location and therefore not capable of delivering optimum yields.


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Koppert Kenya partners with Karura Forest for biological control of soil-borne diseases in tree seedlings

Purity Kabuba, Business Development Manager, Janeffer Githaiga, Marketing Executive and John Olwa the Forester

By PURITY KABUBA

Koppert Kenya has collaborated with Karura Forest in ongoing trials to test the efficacy of using biological control to manage soil-borne diseases in tree seedlings. This has been undertaken at the Kenya Forestry Research Institute (KEFRI) nurseries in Kiambu County. The collaboration is a natural extension to Koppert's commitment to sustainability and making agriculture healthier and safer.

"Karura Forest faces several challenges. One major challenge is fungal attack of seedlings. The intensity of fungal attacks varies from species to species, with some species like Prunus africana being highly susceptible. Fungal attacks result in 50-80% loss of seedlings" said Mr. Fredrick Mutisya, Assistant Forester at Karura Forest.

Karura Forest station is an urban forest in Nairobi which covers 1,041 hectares. To protect the numerous species of tree seedlings in the nurseries, the foresters mainly use cultural control methods to keep the plants healthy. However, this means that they are susceptible to fungal attacks and root diseases in the seedling nurseries and germination beds. The seedlings are particularly susceptible to several fungal diseases because of their tender tissues. Root and butt rot caused by a species of Armillaria is one of the most serious diseases of fruit and forest trees. These harmful pathogens cause diseases of the roots or stem and disrupt uptake of water and nutrients from the soil. This may lead to reduced yield, wilting, yellowing, leaf fall, stunting and even death of the trees.

In December 2015, Koppert drenched more than 450,000 tree seedlings at the nurseries in Karura Forestwith Trianum as a Corporate Social Responsibility (CSR) initiative. Trianum is a beneficial fungi based on theTrichoderma harzianum strain T-22. Trianumoffers the best protection against soil borne fungi such as Pythium, Rhizoctonia and Fusarium and improves plant strength, allowing plants to grow more healthily and uniformly.

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KOPPERT BIOLOGICAL SYSTEMS

Welcome to IFTEX 2016

By DICK Van RAAMSDONK

As predicted in 2012, that IFTEX would climb up to one of world's 3 most important cut flower trade exhibitions in a period of 3 to 5 years, it can be confirmed now that it did enter indeed the top 3 in its 5th year. A double achievement, which thanks to the enormous persistence of the Kenyan flower growers, to get out and export-not only produce, could happen. An industry that could grow over the years and even in difficult times that they are sailing in, these same flower growers maintained their will to grow and look for new markets, resulting in one of the finest and strongest flower industries not only in Africa, but in the world.

Kenya managed to find new markets in several upcoming countries, such as

Russia and now China, but as well finding new markets in existing high volume consuming countries, such as Japan and now even, yes the US market,

Even before Kenya managing to get direct air connections between Kenya and the USA, which by the way would boost exports of Kenyan grown flowers to North America even more.

As a result of the presence of several flower growers in the US held international flower trade fair World Floral Expo, which was held in Los Angeles last month, it became clear how much the Flowers grown in Kenya were ready for the US market. Both flower buyers as well flower growers realized the US could be the next giant, consuming Kenyan grown products. For this reason we, HPP, foreign investor in Kenya and global player in the organization of international flower trade exhibitions in many countries in the world such as Russia, USA, Holland and Kenya as well , since we are also the organizer of IFTEX, decided to set up a programme financially sponsoring a US led flower sourcing mission to Kenya during the week of this year's

IFTEX. The first US and Canadian participants already committed themselves to take part and I am very hopeful we will be able to welcome the first US flower buying trade mission during Iftex this coming June.

Further more we also have set up other similar programmes where we expect a large groups of buyers from Japan, Holland and other countries, all with the purpose of increasing exports of Kenyan grown flowers

Furthermore it is great news that this year we have counted a record high number of exhibiting flower growers, compared to other years. Over 125 growers have signed up, and count for the vast majority of Kenyan based flower growers & exporters. This is exactly the reason why flower buyers from all over the world come from all over the world and attend this fair, to do their shopping for 2017. Iftex has again grown and this year with with almost 15% in size compared to the 2015 edition, and luckily again mainly because of an increased number of participating growers, which makes a visit to this important flower trade show for all flower buyers that count, a real MUST.

Almost 175 growers and other flower related companies companies are exhibiting this year, a record high in a record time of only 5 years; a proof that Kenya is on top of the ladder of being one of the 3 top leading countries that producsr and exports fresh cut flowers. One of Kenya's finest industries that has put Kenya on the map, besides for example tourism.

Iftex in it 5th edition, promises to be another great successful business exhibition with several new records being achieved this year, and I even would not be surprised that it could also become one of the best of the 5 that we have organised since the first edition in 2012.

Let's see, it looks good, so lets make it good.

Thank you

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QUALITY ASSURED

By JANE NGIGE

The Kenya Flower Council celebrates its 20th anniversary at a very interesting time. One of the major challenges the industry grappled with for years was a credible means of communicating to stakeholders that growers were committed to growing flowers responsibly, as depicted by the industry theme since 1996.

At a personal level I am still trying to digest the ranking of our Silver Standard high in the global barometer following a recent standards mapping exercise by the International Trade Center (ITC) and benchmarking to the Global Social Compliance Program (GSCP) – the highest benchmark for social accountability among seven major flower industry standards, in which ours towered above the rest in all aspects under consideration.

We scored above everyone else on environmental, social, management quality and ethics meaning the council standard would be the first point of call for markets looking for the best rated standard while on single items we stood points above all other internationally recognized standards.

The joy of this development is well understood by our growers who periodically undergo rigorous compliance audits resulting in market acceptability of the country's flowers. It also comes in the wake of the revision of the KS1758, the National Standard that governs Ornamentals and Cut Flowers that was launched last year.

KS1758 ushered in a new era in flower production business as it sets the bar expected of the value chain to be followed by all growers before they are issued with an export license. We are working with flower producing counties and the State Department of Agriculture to build the requisite capacity for a national mechanism for compliance and traceability framework to bring all growers and service providers under the standards ambit.

Secondly, if current international statistics are anything to go by, Kenya is now the second largest flower business country after Ecuador up from number four last year. In terms of earnings we are very close and all indications are we could tilt the scales in the not too distant future.

These two remarkable developments point towards the need to establish a Brand Kenya produce that drives the already acknowledged quality of flowers known and respected globally.

After being at the helm of the Kenya Flower Council for 10 years, it is pleasing to have walked this journey of i ndustry 'maturity' in terms of expansion to the main focus now which is sustainability and markets access.

The challenge now is to draw strategies to strengthen and support growers and exporters further, to pursue initiatives that enhance and sustain competitiveness in line with the Kenya Vision 2030, with special attention to escalating cost of doing business related to the business environment. Further to draw on the strong networks established over the years, to secure, grow and sustain market access, beyond the current 60 destinations on record today. To all our growers the Council has seen you grow into global industry champions against many odds You must take the bull by the horns and let my very able team, chaperoned by an equally dedicated Board of Directors, and set new goals for the next decade. From where I sit, I see the area of innovation, knowledge management, Kenya flower brand development and promotion taking center stage.

Thank you our members for your unwavering support to the Council. The faith of members and industry partners will soar the sector to even greater heights.

God bless you all

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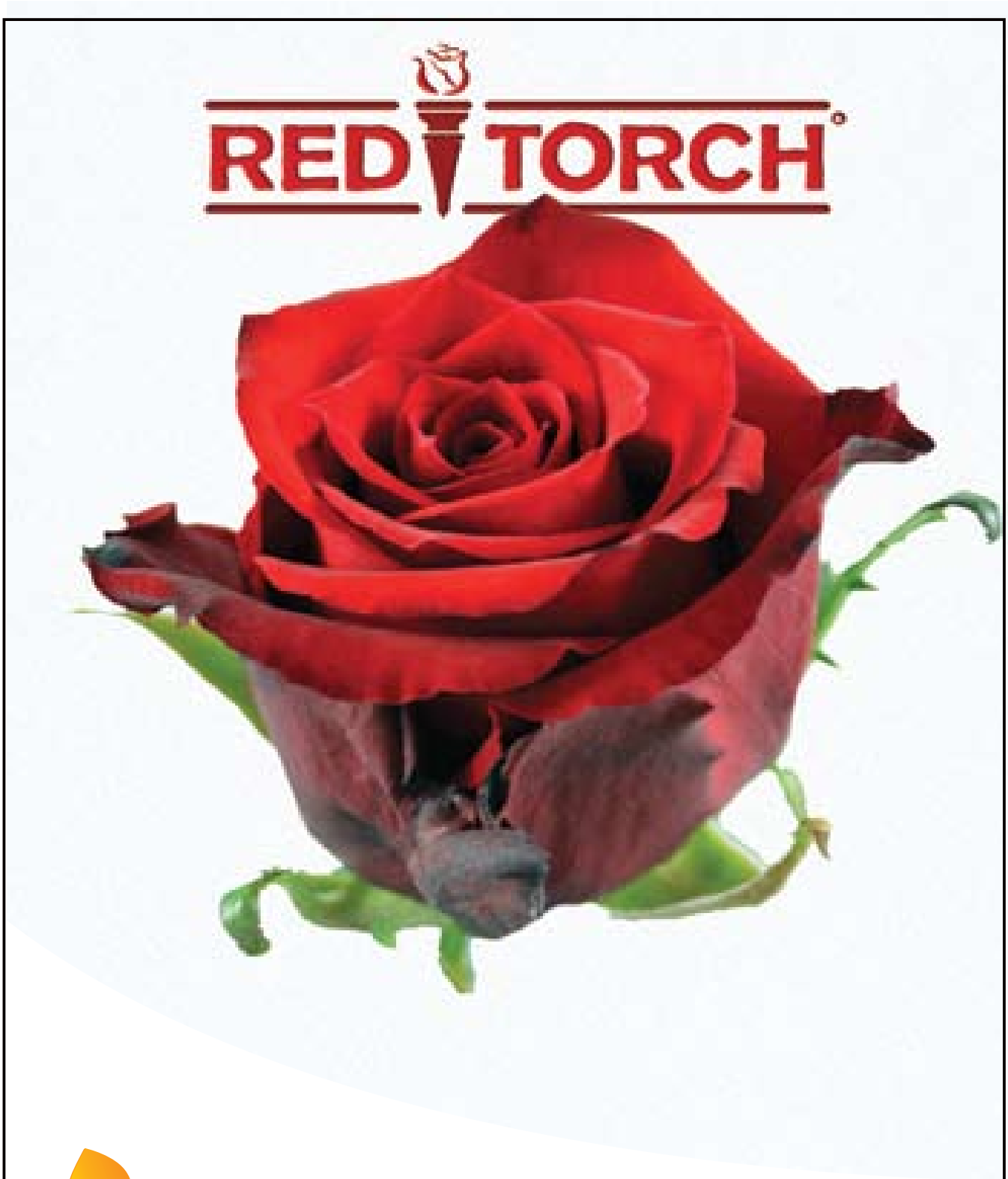

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Partnering with Nature to Propel the Kenyan Flower Sector

By CHARLES MACHARIA

Anyone familiar with the Kenyan floriculture sector knows that it has truly come a long way. According to the Kenya Flower Council (KFC), Kenya did not export flowers before 1970. Fast forward to 2016, Kenya is the largest exporter of cut flowers to the European Union, with an estimated market share of 38%. Further, Kenyan flowers are sold in many other parts of the world including Russia, Japan and USA. A lot of that growth has been experienced in the last two decades or so. Incidentally, it is for about the same duration that KFC has existed. KFC is the association of growers and exporters of cut-flowers and ornamentals, which aims at fostering responsible and safe production of cut flowers in Kenya with due consideration of workers welfare and protection of the environment.

The latter is important especially now as flower consumers are increasingly interested in knowing how the flowers they enjoy are grown. Needless to say, crop protection is an integral part of flower production. Over the last 10 or so years, Kenyan flower growers have been at the frontline in applying sustainable crop protection technologies on their farms. This includes biological control agents as a tool for Integrated Pest Management (IPM). This practice has enabled growers to reduce chemical pesticide usage on their farms and hence deliver to the market cut flowers with minimal pesticide loads.

As these growers also seek to comply with the various market &label requirements, codes and standards, certain growers have set for themselves even more ambitious targets. For example, some aim to match the maximum residue limits (MRL) that are set for vegetables. By doing so, such growers are not only meeting their

current obligations, but are securing their future in the long term. Often, these sustainable growing practices also come along with direct benefits to the grower including increased productivity per unit area, and improved quality as measured by parameters such as stem length, desired bud size and longer shelf-life of cut flowers.

It is worthwhile to note that Koppert Kenya, a subsidiary of Koppert BV of the Netherlands, has been present and active in Kenya for the last 10 years. Over this period, the company has supplied Kenyan growers with appropriate tools to enable them grow more sustainably. Initially, Koppert supplied biological control agents in the form of Macrobials, that is beneficial macro-organisms that are used in crop protection. These include predatory mites and parasitoids. In layman's language, one could describe them as "good insects that control the destructive ones".Since then, Koppert expanded the range to include Microbials, that is beneficial micro-organisms; Botanicals, which are obtained from plant extracts; Associated products, such as sticky traps; and the NatuGro System, which is an acronym for Natural Growing that helps growers to grow resilient crops with greater returns.

As the Kenyan flower industry ventures into the future, Koppert endeavors to continue playing its part in order to support the industry to consolidate past successes. Furthermore, together we can overcome short-term challenges facing the sector and explore an even greater future for the industry. As our mission statement affirms, we strive to contribute to better health of people and the planet. In partnership with nature, we will make (Kenyan) agriculture healthier, safer and more productive. Long live the Kenyan floriculture industry!

Partners with Nature

Koppert Biological Systems contributes to better health of people and the planet. In partnership with nature, we make agriculture healthier, safer and more productive.

We provide an integrated system of specialist knowledge and natural, safe solutions that improves crop health, resilience and production.

Over the last 10 years Koppert has enabled Kenyan flower growers to produce sustainably and meet increasingly stringent market demands.

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Oserian – The "Living Story"

Statice – first cut flower at Oserian 1982

Avalanche Pastel Rose Mix 2016

Oserian Farm

By HAMISH KER

Environmental Protection and Conservation must be balanced with social and economic factors in order to achieve sustainability.

Oserian has farmed in harmony with the region's flora and fauna for almost half a century.

The Oserian Development Company Ltd is situated in one of Kenya's most spectacular landmarks – The Great Rift Valley - on the shores of Lake Naivasha.

Oserian translates as "Place of Peace" in the language of the Masai people -the story of Oserian is one that encompasses a passion for beauty and peace. This translates into a love for flowers, and a compelling desire to conserve nature's riches which are our heritage.

The vision of sustainable enterprise was created by the Zwager family and has now become a part of the philosophy and culture of our people and the community we live amongst.

Oserian farm was developed by Hans and June Zwager, from the late sixties.

Flower farming was first introduced to Oserian in 1982 when the Zwager family planted their first crop of purple Statice. Today Oserian is one of the largest and most respected floriculture ventures globally. Peter Zwager who is now the Chairman has steered the technological developments at Oserian farm from the creation of tissue culture laboratories to produce clean plant material such as bananas for small scale farmers to green production systems embracing our natural resources such as Geothermal energy in order to bring natures solutions into the commercial arena.

Oserian pioneered flower farming in Kenya and has played a leading role in creating the global flower markets as we know them today.

This publication provides an insight into one of Kenya's largest flower farms that is also a global model of excellence, which has enabled us to become 'Champions of Nature'.

Oserian farm cultivates over 200 hectares of cut flowers and is one of the world's largest Fairtrade cut flower producers. Oserian grows today a wide range of cut flowers including roses, statice and spray carnations.

Oserian - Colourful schools

Oserian believes in and demonstrates its commitment towards its people through innovative projects which aim to continually improve the standard of living and quality of life of our people and our surrounding communities.

We appreciate that we are only as good as our people and therefore employee and community welfare is therefore key to our sustainability as a business and our natural environment.

The initiatives created by Oserian funded from the sale of ethically traded flowers, include projects to improve health, education, water and sanitation – to name but a few. These developments have enhanced the lives of Oserian employees as well as those from our neighboring communities.

Further to our community focus Oserian has dedicated considerable resource to reduce her footprint on the environment by adopting nature's solutions such as geothermal energy and integrated pest management as well as setting aside habitat to conserve nature on and around the estate.

It is noticeable to the visitor that Oserian is alive with the sights and sounds of nature.

Attention is always given to the areas between fields, bordering housing estates and on the roadsides, by encouraging the growth of various native grasses, herbs and shrubs.

These areas are important habitats for birds, small mammals, reptiles and a variety of insects. They also act as corridors for the larger species of wildlife.

Oserian encourages its neighboring communities to support reforestation projects. Tree seedlings are donated from the farm every year to the communities for planting, thus ensuring additional growth of more than 10,000 trees each year.

Oserian is proud to host many types of indigenous fauna. This includes more than 320 bird species which have been recorded on the estate such as the African Fish Eagle.

Oserian is proud to have created a sense of environmental awareness amongst its people, as well as its neighboring communities.

As a result Oserian has been recognised as a 'Champion of Nature' by the World Wildlife Fund (WWF).

Oserian has also been a key sponsor of the Oserengoni Wildlife Conservancy which borders the Rift Valley's Mau Escarpment. The conservancy has a number of projects in place to protect grevy zebra, colobus monkey, leopard, wild hunting dog and the aardvark - all of which are species classified at different levels of endangerment.

The unique Oserian philosophy of "Flowers 4 life" is key to creating the balance we need by creating the value from the business that supports people's needs by using natures resources but at the same time conserves and protects our precious ecosystem for future generations.

Conserving endangered species- Grevy Zebra

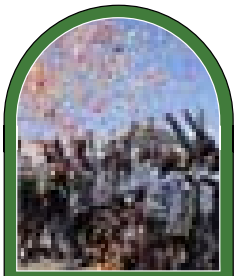
Oserian

FLORI4 LIFE

Our award winning flowers make lives better, create jobs and support a greener planet inspired by the vision of the Zwager family. For more info visit www.oserian.com

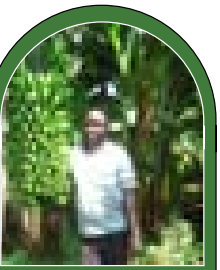
FLORI4 NATURE

We sustain nature through our wildlife sanctuary and native vegetation. We raise seedlings for reforestation, use geothermal power to heat greenhouses, apply IPM to reduce chemicals and recycle plastics.



FLORI4 SCHOOLS

Oserian has constructed and furnished two early childhood development centres, two primary schools, a high School for employees and built two community schools.



FLORI4 FARMING

We believe in a hunger-free Kenya. Our Tissue Culture lab produces high value food crops like banana seedlings and seed potato to increase farmers' yields.

FLORI4 WATER

Water is life. Our water management model has been cited by the Water Resource Management Authority as an industry benchmark. Oserian has developed several community water projects.

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The environmentally friendly crop guide

ABSORBER®

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Ability to absorb 100-200 times its weight in water as well as dissolved nutrients in soils and substrate
Reduces watering frequency for irrigated crops
Rain water absorbed during rainy season will be available to the plants for a longer period
Reduces leaching of nutrients
Enhances plant growth through continuous availability of water and absorbed nutrients
Helps to aerate the soils by expanding when absorbing water and contracting when releasing water
Applying hydrated Absorber avails moisture to transplanted plant and **increases** survival rates
Degrades naturally at the rate of 10-15% per year

ACHOOK® 0.15% E.C.

NEEM BASED
NEMATICIDE / INSECTICIDE

Neem tree (mwarubaini) extract
Effective against nematodes, chewing and sucking pests
It has anti-feeding, repellent/deterrent and insect growth disruptant effects
Does not kill beneficials
Very Low Pre-harvest interval of 8 hours
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ORGANIC
ULTRA CONCENTRATED
HUMATE POWDER

Organic 80% humate powder free of heavy metals
Inexpensive natural alternative to animal manures or compost and avoids weeds
Natural chelating agent
Increases cation exchange capacity hence efficient transfer of nutrients from soil to plants
Helps in freeing locked nutrients
Encourages beneficial micro-organism activity
Improves water holding capacity of soils
Inexpensive way of converting normal granular fertilizer to slow release by coating with Earthlee

nhance®

ORGANIC SEAWEED EXTRACT
FOLIAR & DRENCH APPLICATIONS

Natural seaweed extract of ecklonia maxima (kelp)
Certified for organic farming
Enhances root development leading to better top growth
Reduces transplanting shock
Increases yields

nhance®

SEED TREATMENT
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Enhances seed germination and growth
Easy to apply
Increases crop yields
Seed dressing for wheat, barley, maize and other grains
Enhances early plant growth and **uniform germination**

ZAIDI® 0.025% E.C.

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REGULATOR FOR TEA

Increases drought tolerance
Early bud breaks in pruned bushes
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Increase in number of pluckable shoots
Reduces "banji buds"

All products are Non toxic, Biodegradable and Environmentally friendly

IMPORTANT

Organix products give the best results when used in combination or in addition to the normal crop production programme. All other factors such as favourable climatic conditions, adequate water, good seed, etc should also be at an optimal.

PLEASE READ THE PRODUCT FLIERS AND LABELS CAREFULLY BEFORE USING.
ALL PRODUCTS SHOULD ALWAYS BE TESTED ON A SMALL AREA BEFORE LARGE SCALE APPLICATION

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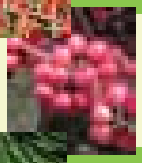
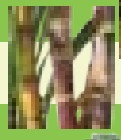
	 ABSORBER®	ACHOOK® 0.15% E.C.	EARTHLEE®	nhance® FOLIAR & DRENCH APPLICATIONS
BANANA new planting 	Mix 10 - 20g with soil per planting hole	Nematode : 2L Solution per plant (8ml / 1L water)	Mix 40g with soil per planting hole	Drench seedlings at 5ml / 1L water one day before transplanting. Follow with 2 foliars at 2-3 week intervals 2 weeks after transplanting at 3ml / 1L water
BANANA established	NIL	Nematode : 2L Solution per plant (8ml / 1L water)	Apply 20 - 40g as top dressing	Drench 2L Solution at 5ml / 1L water per plant
CABBAGE 	½g per planting hole at transplanting	Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Drench seedlings at 5ml / 1L water before transplanting. Follow with 2 foliars at 2-3 week intervals 2 weeks after transplanting at 3ml / 1L water
CARROTS 	NIL	Nematode : Drench 10-14 days after germination at 1ml / 1L water by opening knapsack nozzle Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Foliar at 3ml / 1L water after germination and repeat after 3 weeks
CHILLIES / CAPSICUM 	½g per planting hole at transplanting	Nematode : 100ml Solution per plant (1ml / 1L water) Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Drench seedlings at 5ml / 1L water one day before transplanting. Follow with 2 foliars at 2-3 week intervals 2 weeks from transplanting at 3ml / 1L water
COFFEE 	Nursery : 1g / 1L soil Field : Mix 10-20g per planting hole	Insects : Foliar 1ml / 1L water	Field: 10g per planting hole Fertilizer coating: 1-2kg per 50kg of fertilizer Mature trees: 10-50g per tree	Newly transplanted : Drench seedlings at 5ml / 1L water one day before transplanting. Follow with 2 Foliars at 4 week intervals 4 weeks after transplanting at 3ml / 1L water
FRENCH BEANS 	NIL	Nematode : Drench 10-14 days after germination at 1ml / 1L water by opening knapsack nozzle Insects : Foliar 1ml / 1L water	Coat 1kg Earthlee with 50kg granular fertilizer	2 foliars at 2 week interval at 3ml / 1L water starting at trifoliate stage
FRUIT TREES / FORESTRY - mangoes, avocadoes 	Nursery : 1g / 1L soil Field transplanting : 2-20g per planting hole	Insects : Foliar 1ml / 1L water	Nursery : 1g / 1L soil Field transplanting : 2-20g per planting hole	Drench seedlings at 5ml / 1L water one day before transplanting. Follow with 2 foliars at 4 week intervals 4 weeks after transplanting at 3ml / 1L water
GRASS (LIKE CAPE ROYAL, KIKUYU, MADDI RIVER, ZIMBABWE, ETC) new planting 	At time of planting 20-40g / m² soil	NIL	At time of planting 20-40g / m² soil	Dip grass at 5ml / 1L water for 15 minutes before planting. Follow with 3 Foliars at 2 week intervals at 3ml / 1L water
GRASS maintenance	NIL	NIL	Coat 1Kg Earthlee with 50Kg granular fertilizer	Foliar at 3ml / 1L water after cutting and when new growth emerges. Spray 6 - 8 times per year
SHRUBS / SMALL PLANTS	Planting : 2 - 10g per planting hole	NIL	Planting : 2 - 10g per planting hole Top dress : 2 - 10g per planting	Drench plants at 5ml / 1L water after transplanting. Follow with 2 Foliars at 3 week intervals at 3ml / 1L water. Spray 4 - 6 times per year at 3ml / 1L water
NAPIER GRASS 	½g per planting hole at transplanting	NIL	Coat 1Kg Earthlee with 50Kg granular fertilizer	Dip planting material at 5ml / 1L water for 15 minutes before planting. Follow with 2 Foliars at 3 week intervals at 3ml / 1L water. After every harvest spray on new shoots at 3ml / 1L water
ONIONS 	NIL	Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Drench seedlings at 5ml / 1L water one day before transplanting. Follow with 2 foliars at 2-3 week intervals after transplanting at 3ml / 1L water
PEAS 	NIL	Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	3 foliars at 2 week intervals at 3ml / 1L water starting at trifoliate stage
POTATOES 	NIL	Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Dip tubers in 2ml / 1L water for 15minutes prior to planting. First foliar at 21 days after emergence followed by second foliar after 14 days at 3ml / 1L water. Do not spray after flower initiation
SUGAR CANE 	10 - 20 Kilo per Ha. applied in the furrows	NIL	Coat 1Kg Earthlee with 50Kg granular fertilizer	Dip sets in 5ml / 1L water before planting. Repeat foliar at 60cm height at 2L / Ha. For ratoon apply foliar at 60cm height at 2L / Ha.
SUKUMA/ KALE/ SPINACH 	½g per planting hole at transplanting	Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Drench seedlings at 5ml / 1L water before transplanting. Follow with 2 foliars at 2-3 week intervals after transplanting at 3ml / 1L water
TEA 	Nursery : 1g / 1L of soil Field : 2-5g per planting hole	Insects : Foliar 1ml / 1L water	Field : 2-5g per planting hole Fertilizer coating : 1Kg / 100Kg fertilizer to be mixed with top dressing fertilizer	Newly transplanted : Drench seedlings at 5ml / 1L water one day before transplanting. Follow with 3 foliars at 4 week intervals 4 weeks after transplanting at 3ml / 1L water *
TOMATO 	½g per planting hole at transplanting	Nematode : 100ml Solution per plant (1ml / 1L water) Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Drench seedlings at 5ml / 1L water before transplanting. Follow with 2 foliars at 2-3 week intervals after transplanting at 3ml / 1L water
WATERMELON 	½g per planting hole at transplanting	Nematode : 100ml Solution per plant (1ml / 1L water) Insects : Foliar 1ml / 1L water	Coat 1Kg Earthlee with 50Kg granular fertilizer	Drench seedlings at 5ml / 1L water before transplanting. Follow with 2 foliars at 2-3 week intervals after transplanting at 3ml / 1L water
WHEAT MAIZE 	NIL	NIL	Coat 1Kg Earthlee with 50Kg granular fertilizer	Foliar at 2ml / 1L of water at 3-5 leaf stage **

* ZAIDI® 0.025%E.C. 3 foliars at 5ml / 20L water at monthly intervals. Commence spray before dry spell.

** nhance® SEED TREATMENT Mix 100ml / 10kg of seed thoroughly.

60 and counting: Kenya flowers conquer global markets

New figures reveal a huge drop in Dutch production, in favour of imports from Kenya

Kenya prides itself in high quality flowers which gives it a competitive edge in the global markets

A growing interest by growers to focus their attention on direct markets rather than the auctions is signaling a new trend in marketing Kenyan flowers as growers seek the cheapest and most rewarding avenue to sell their flowers. This has seen growing demand for flowers by buyers which has further cemented its position as one of the flower giants globally.

And although the country still enjoys the largest market in EU, accounting for 35 per cent of all sales in the European Union, it is making inroads in new markets including Middle East and North America. Currently Kenya exports its flowers to 60 destinations with roses making up 74 per cent of Kenya's flower exports, followed by carnations which are the most popular flower in Britain at less romantic times because they last longest.

"Kenya prides itself in high quality of flowers which gives it a competitive edge in the global markets. New markets have also warmed up to our flowers because of the quality. We are currently number two in exports," said Mrs. Jane Ngige the CEO of Kenya Flower Council.

New figures reveal a huge drop in Dutch production, in favour of imports from Kenya. The country's cut-flower exports increased 12-fold to 137,000 tonnes between 1988 and 2014 as Netherlands buyers realized it was cheaper, and counter-intuitively greener, to fly blooms thousands of miles than to heat Dutch greenhouses.

So how has Kenya mastered the markets to become world-class growers and exporters of cut flowers in this highly-sophisticated global market? The country has for starters partnered and recruited experts from all over the world invested billions in the latest technologies, including climate-controlled transport terminals specially designed to ensure fresh flowers arrive

DE RUITER Proudly presents Regional Coverage for IFTEX 2016

De Ruiter East Africa is proud to present a regional coverage during the IFTEX 2016, in a bid to ensure continued market growth in challenging economic times. The establishment of test cases and show houses across the regions has been paramount in our strategy for 'Creating Flower Business' This has been close to our client based market approach to close the gap between the breeder and grower.

Fire Expression

Classico

Naivasha

Timau

Nakuru

The three locations altitude ranges from Naivasha 1900m, Nakuru 2300m , Timau 2500m these micro climatic showcases provide a platform for our clients to help reduce the level of error and prepare future multi destinational varieties that are robust in marketability. Further to this we have seen these locations used by various buyers, traders and stakeholders in the industry.

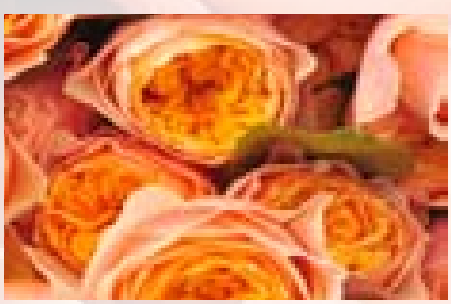
Market Analysis

The international market has been increasingly demanding innovation and it has resulted in an amazing response from our industry. The producers have responded in a creative and substantially market robust strategies that we have identified. These are taking place across the regions in Kenya with the key premium producers. The novelty line development has been nothing short of phenomenal and an increased demand for Garden shapes and Niche lines has seen great success generated. De Ruiter East Africa has played a significant role in this development and will continue to breed develop and select for a rapidly changing market, some of our novelty lines displayed above.

Market Sustainability

De Ruiter has a customized approach to our clients across the continent this can be seen inclusive of Regional trading head starts and release policies. De Ruiter has continued marketing support and assistance in product branding throughout the life cycle of a variety on auction and direct markets. De Ruiter further will assist in new market development such as the presence in the recent Beijing Flower show in China amongst other new market opportunities. We as such look forward to welcoming you into our wide ranging and exciting new portfolios regionally represented by altitude and market.

Vuvuzela



Misty Bubbles

Edward Agg-Manning – edward.agg.manning@deruiter.com, Guy Keeble - guy.keeble@deruiter.com
Fred Okinda – fred.okinda@deruiter.com

Kenya is the lead exporter of cut flowers to the European Union with a market share of approximately 40%.

quickly across the world looking as beautiful and smelling as nice as when they were first cut. Paying attention to customers who say they really want to buy cut flowers that last a long time while learning from the transfer of technology skills and best practices has equally paid off.

The country's flower power is also attributed to its sunny climate, which enables high-quality blossoms to be grown year-round without the need for expensive-to-run greenhouses. Excellent transport links to Europe and the rest of the world mean that delicate floral cargo which is perishable in nature can be shifted from growers to consumers swiftly.

According to Mrs. Ngige direct flights from Nairobi airport play a crucial role in helping the Kenyan flower business take off globally.

The industry however has not been without hiccups with major global phenomena affecting export numbers. International events, including Russia's war in Ukraine and plummeting oil prices, have shaped flower fortunes for numerous Kenyan farms. Sales to oil-producing nations, such as Norway and those in the Middle East, have dropped due to their reduced spending power. In 2012, flower exports to Russia, the world's fifth-largest flower importer, began shrinking due to its tanking economy and depreciating ruble. Russian military intervention in Ukraine in 2014 only "worsened the situation,

Still the industry continues to take its pride of place in the country Kenya's flower business continues to employ half a million Kenyans while earning the country Sh63 billion in revenue according to government statistics. "Access to direct markets compared to auctions by flower farms mean that they have understood the markets well. But this has also forced them to learn new marketing and logistical support. This is the way to go," said Mrs. Ngige.

Buyers keen on learning how flowers are produced and whether growers observe good agricultural practices have sought to meet in an annual fete dubbed the International Flower Expo, IFTEX, now in its fifth year. The show has grown into a top Kenyan brand, strengthening the country's position as a leader in global markets, while enhancing the image of Nairobi as the home from where 40 per cent of the flowers sold in Europe originate.

"IFTEX has stumped its authority as one of the leading flower trade shows in the world. From the beginning, the event exhibited signs of setting a new record as the fastest growing flower show in the history of international flower trade fairs due to its attracting exhibitors from other continents and five years later, all indications are, the position still holds," said Dick van Raamsdonk General Director HPP Exhibitions the organizers of IFTEX.

As the flower industry celebrates its 20th anniversary this year, flower growers have positioned themselves to capture more markets even as they work at developing the brand Kenya flower. "We are not really worried about the Ethiopian question because our main focus is on quality. If anything we have been working at assisting Ethiopia perfect its quality because it matters to us that Africa is known for quality in flower production rather than quantity. Kenya's space and reputation in the global flower market depends on how Ethiopia also produces its flowers," added Mrs. Ngige.

NATURAL POWER

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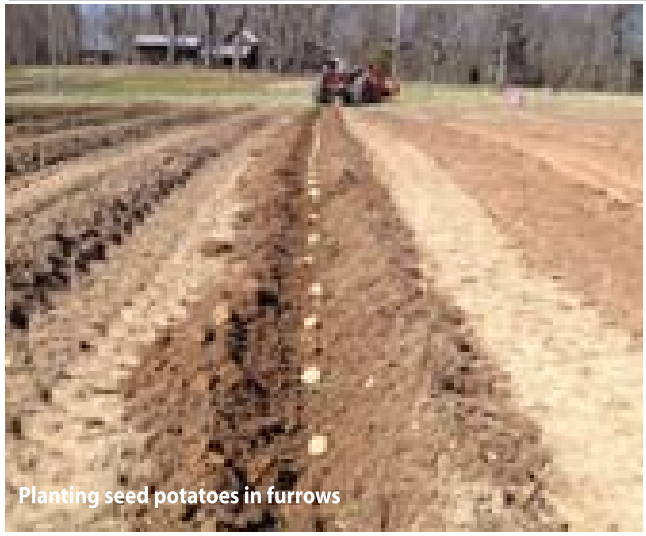
Hicure® is a powerful biostimulant that has been proven to mitigate stress in plants resulting in more vigorous, healthy and high quality flowers with a longer shelf life.

As an associate member of the Kenya Flower Council (KFC), Syngenta East Africa Ltd congratulates KFC on its 20th Anniversary.

We celebrate the continued impact and efforts that KFC has made in promoting sustainable farming practices in the cut-flowers Industry in Kenya.

Hicure® Biostimulant

syngenta®



Planting seed potatoes in furrows

Earthing up (ridging) potatoes to increase production

Growing potatoes

By RUTH VAUGHAN

Potatoes are the most consumed staple in Kenya after maize. They are an important food and cash crop and play a key role in National Food Security. Potatoes are nutritious with a high energy, protein, vitamin and mineral content. Potato demand is increasing in Kenya with growing urbanisation and a corresponding expansion of the fast food industry.

Potatoes are grown by nearly a million small holders, with an average yield of about 8 tons/ha. Potatoes are mainly grown in the highlands where they have a competitive advantage over maize.The general trend in Kenya is an overall drop in yields due to continuous production, soil degradation, nematode and disease build up.

There is huge potential to more than double potato yields using good agricultural practices, clean seed, proper crop nutrition and rotation.

Most potato production in Kenya is rain fed. Which means there are two growing seasons a year. Prices tend to be low in July-August when high volumes are available, and high in December, April and May when less potatoes are available. Potatoes need a good constant supply of moisture for the highest yields and water availability is a major constraint on yield. Irrigated potato production can be geared to hit peak price times.

Variety and seed selection

The primary consideration for variety selection is the market for which it is intended for. If potatoes are being produced for general consumption, the farmer should choose a variety with the highest production that is acceptable for that market. If the potatoes are grown for processing, the processor will normally advise the farmer on appropriate varieties to plant. Some farmers might need to select for special characteristics, for e.g drought tolerance or disease resistance. More information is available on the National Potato Council of Kenya website, or conduct your own local research amongst farmers in your area

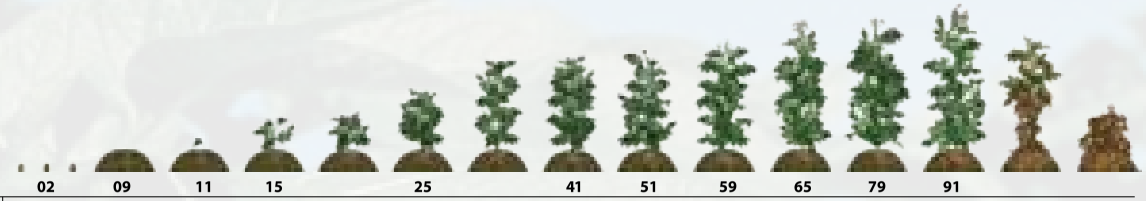
The term seed potato is very misleading, as potatoes are generally not grown from seed, but from small tubers. It is important to select clean seed potatoes. Less that 2% of potatoes planted in Kenya are from certified seed potatoes. Most plantings are done from saved potatoes, potatoes from friends or relatives, or potatoes bought in the market. This is a big risk, and has been identified as the next biggest yield constraint after water availability. There is a good market opportunity for growing potato seed in Kenya – contact KEPHIS for more information.

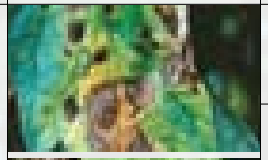
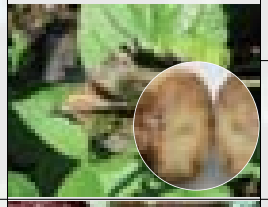
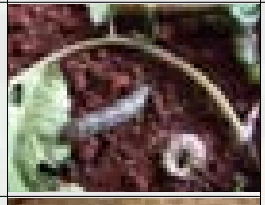
Site selection and land preparation

Kenyan potato varieties do well in cool weather at an altitude of 1400-3000m, with an average rainfall of 850-1200 mm. It is very important to know the history of previous crops on the land and to practise proper crop rotation. Potatoes should not follow othersolanaceous crops (eg tomatoes, capsicums, eggplant, and night shade). Plant diseases and nematodes can quickly build up in the soil causing major crop losses. It is important to send soil samples to a reputable laboratory for testing for nutrition, diseases and nematodes.

Potatoes need deep, soft soil to develop large uniform tubers. Heavy clays restrict tuber development. Plough the land to a depth of 20 cm and break up any clods. Soil correction amendments, as recommended by the soil testshould be added at this stage and mixed well into the soil. Proper soil preparation allows free drainage, good aeration, weed reduction and good

Bayer Potatoes Crop Protection Program



Disease		Product	Rate per 20 Ltrs Water	Application Window
Early Blight		CONSENTO	40ml	x 2
		Miraz	40gms	x 2
Late Blight		INFINITO	35ml	x 1 x 2
Cut Worms		decis	15ml	
Tuber Moth			15ml	
Foliar Fertilizer		WUXAL BY AGLUKON	35 - 50ml	x 2

Bayer CropScience

A nice crop of potatoes, well ridged, free draining and weed free

composition of crop residues and organic matter. This will improve yields and reduce diseases.

Potatoes are planted in dug out furrows that are 45-75 cm apart and 8-12 cm deep. Tubers are placed in these furrows 15-30 cm apart, eye side up, and covered with soil. Average plant population should be about 45,000 plants/ha. Seed requirement is about 2000-2500 kg/ha depending on the size of the seed potatoes. The amount of pre-plant fertiliser to be top dressed will be determined by the soil analysis. Well composted manure or compost should be added in the bottom of the planting furrow at about 5 tons/ha.

Make sure that any potatoes used for seed are clean and disease free. Wash soil off the seed potatoes. If you are cutting the seed potatoes to get 2 eyes per piece, than use clean sharp knives and allow to dry for 1-2 days before planting to reduce rotting. Cutting potatoes is not recommended – it can increase diseases.

Crop Cultivation

During the crop cycle the soil needs to be ridged up around the plants, starting from when the plants are 12 cm high. This is done by hoeing the soil up around the base of the plant, to cover the roots and support the plants. This also encourages good tuber formation. Weeding should be done at the same time as ridging, to reduce production costs. Ridging should be done 3-4 times in a crop cycle with the final ridge being about 25 cm high.

Potatoes are heavy feeders, and additional fertilisers should be top dressed during ridging. The amount and type of fertiliser will be determined by your soil analysis and realistic target yields. Applying excess fertiliser will not necessarily increase yields, is a waste of money and may harm your soil and the environment.

Harvesting and storage

Potatoes are ready for harvest when the tops start withering. Dig up a few plants to check the tuber formation. Potatoes should be harvested on a dry day, and the soil should be brushed (not washed) from the tubers. Washing shortens the storage life. Potatoes left in the field after the plants have died might rot. Dry the potato tubers and store in a cool, dry, dark place away from any fruits that produce ethylene (eg bananas).

Major Potato Pests& Diseases in Kenya

Late blight, *(Phytophthorainfestans)*, can cause great yield loses. Symptoms include water soaked lesions on leaves and tips of stems that are brown when dry and black when wet. The disease can be controlled by applying preventative fungicides during the crop cycle. If the plants do get infected, control the infection with a systemic fungicide.

Bacterial wilt, *(Ralstoniasolanacearum*), is one of the most destructive potato diseases. Symptoms include wilting, stunting and yellowing of plants, which finally die. Wilting starts in the lower leaves. There is no chemical cure. Infected plants should be removed from the field and destroyed and ash spread on the area where the plants were.

Potato cyst nematodes (PCN) are an emerging pest and can be devastating to potato yields. A full article on PCN can be found in the April 2015 edition of *Hortinews.*

Bacterial wilt and potato cyst nematodes can persist in fallow soil for 2-3 years, and cropped soil for a lot longer. It is important to plant certified clean seed on nematode & disease free land and to practice crop rotation with Brassicas and other non-solanaceous crops. Bacterial wilt and PCN can be introduced in infected seed and infected soil adhering to the seed potatoes, shoes, tyres and farm implements. Both can be introduced by flood water, or irrigation from surface water. The use of biological control agents for eg *Paecilomyceslilicanus* (against nematodes) and *Trichodermasp* (against diseases) will increase your yields and benefit your soils.

Potato tuber moth can be controlled using appropriate traps, or spraying recommended insecticides.

With increasing market demand, a short crop cycle, easy crop care and low cost of inputs potatoes are a lucrative cash crop to add to your crop rotation. To be successful use clean certified seed on clean soil.

Crop Nutrition Laboratory Services can analyse your soil, and give you fertiliser recommendations, and test soil, plants and water for nematodes and diseases. A list of crop inputs and suppliers, including suppliers of certified seed potatoes, is available on www.inputs4ag.

BIG OR SMALL WE'VE MADE A CASE FOR YOU

Every farmer's needs are different and this determines their choice of farm machinery. Should you require a tractor for heavy or light duty, CASE has one that will not only meet but surpass your demands. Renowned the world over for their legendary perfomance, longevity and durability, CASE tractors will get the job done, everytime. Twende Kazi!

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Ethylene: the invisible killer

Ethylene causes increased ageing symptoms like wilting, bud and leaf drop with flowers and plants.

The plant hormone ethylene stimulates ageing symptoms like leaf drop, flower wilting and fruit ripening on flowers and plants. Ethylene is also being produced in “stress situations” such as during dark transport.

Ethylene is a hydrocarbon and colourless, flammable gas with a faintly sweet smell. Ethylene has, contrary to many other plant hormones, a very simple structure (CH2 = CH2). It is produced as a natural hormone by many different flowers and plants to regulate internal processes, such as ripening. Although it also is released through cigarette smoke and vehicle exhaust fumes. Therefore transportation of flowers on the farm should be careful about which methods are used. Trucks should be turned off while unloading and loading of flowers into the packhouse as well as at cargo areas when shipping and receiving flowers internationally.

Damage

Damage to flowers and plants caused by ethylene results in bud drop, flower drop, leaf drop and the wilting or shrinking of flowers.

The best known product used by growers to protect flowers against the negative effects of ethylene is Silver Thio Sulphate (STS). In the market there are several STS-based post-harvest treatments and Chrysal has **Chrysal AVB.** After harvest, the flowers are put on a solution like AVB which they absorb. When the flowers are treated correctly, they are protected against ethylene and the vase life is extended considerably.

Precautions

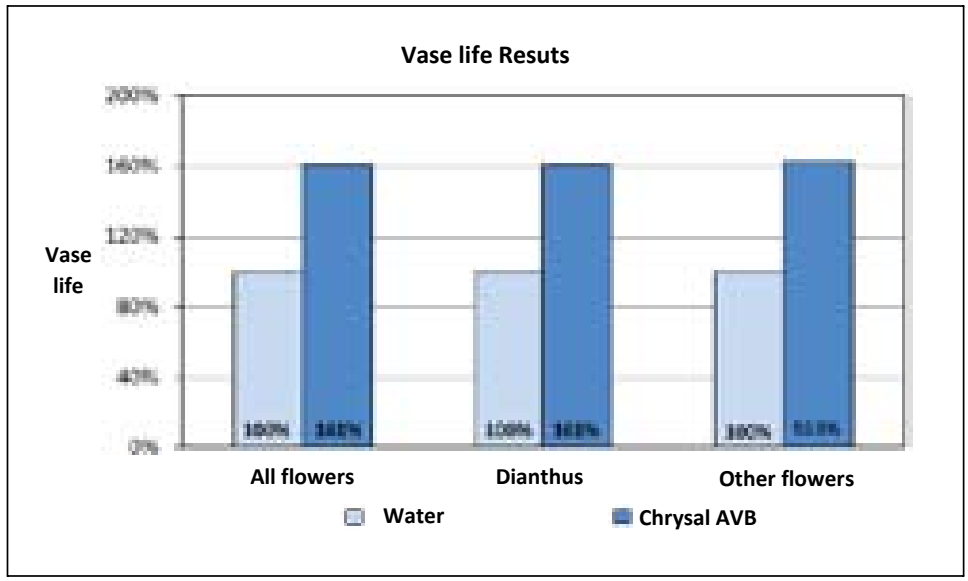
It is very important that growers strictly treat the ethylene sensitive flowers. For example when you notice in your vaselife room that after only a few days your Carnations / Roses shrink, wilt, droop you can take it for granted that they have not been treated correctly.

TIP

- Make sure your packhouse, cold room and vehicles are well ventilated. This way the ethylene gas cannot build up to harmful concentrations which will have a negative effect on the vaselife of the flowers.

Test Results

The following graph shows the effect of Chrysal AVB on the vase life of Dianthus and other flowers compared to water alone.



Vase life Alstroemeria

Treatment: WATER

Total vase life: 13 Days

Photo taken: Day 20

Treatment: Chrysal AVB

Total vase life: 19 Days

Photo taken: Day 20

Innovations driving the flower industry

One of the most advanced and heavily embraced technologies by growers is hydroponics, the growing of flowers without soil by making use of water with soluble nutrients necessary for the plant and inert media like coconut peat or pumice

The environmental friendly raiiling system that transports flowers from greenhouses to packhouses at Redlands Roses

By BOB KOIGI

As flower markets demand responsible flower growing, and growers look for the cheapest ways of producing high quality varieties, cutting edge innovations are coming up redefining flower production. The measures employed by the sector target protection of people, environment and profits.

From hydroponics to geothermal heating, flower farms have come of age, breathing fresh energy to the industry and rubberstamping responsible growing, as HortiNews found out from a few farms.

At Magana Flowers, one of the pioneer growers, innovation has been inspired by a need to cut cost of production while meeting market demands. The company has invested in five dams that allow water harvesting.

About 80 per cent of the water used by the farm is through water harvesting. "We have committed ourselves to ensure we use any available natural resource to grow at our optimum while incurring the least amount of expense. The pay offs have been instant," said CEO Nicholas Nyambega.

One of the most advanced and heavily embraced technologies by growers is hydroponics, the growing of flowers without soil by making use of water with soluble nutrients necessary for the plant and inert media like coconut peat or pumice.

The idea is to control nutrients taken in by plants, which would be hard to achieve through the use of soil. With water being a scarce resource, hydroponics allow for the recycling of water resulting in savings of between 40 to 60 per cent.

Hydroponics also allows protection of the environment since no metals leak to the soil.

We have embraced hydroponics ensuring that plants are grown in a medium fitted with drip lines from a central place where fertigation is done. Crops take only what is required and the rest goes back to the tank for purification and replenishing. "With hydroponics there is no wastage of water or nutrients. This we believe is a way of us giving back to the environment what we take out for sustainability of the business. We have also saved a lot of investment through the technology," said Richard Fox the Managing Director, Flamingo Horticulture Limited.

To tame proliferation of pests and diseases, while taking care of the environment, growers have

equally embraced Integrated Pest Management that nips pest problems before they escalate.

At Redlands Roses in Ruiru the company boasts of a wide array of IPM innovations including traps. Sticky traps helps in monitoring the number of pests. Light traps on the other hand attract pests to the source of lights which then fall on water placed in special bowls and die. Pheromone traps another biological control method practiced by Redlands Roses involves use of traps that dupe the male of the presence of a female ready to mate. A pheromone is a biological chemical secreted by female insects or even mammals that triggers the attraction of a male to a female. Such biological control methods have been instrumental in controlling some of the most voracious pests including spidermites, thrips and whiteflies.

"We have invested heavily in IPM technologies because we believe in responsible flower growing. We have also realized as we do this that it is more economical and rewarding to go biological for the environment and the people who for us. We have also seen its potency in the long run," said Mrs. Isabelle Spindler, managing director, Red Lands Roses whose sentiments echoed by Mr. Ambanya. "As a grower, your primary concern is how to save on cost while not compromising on the quality of your flower. We therefore have to ensure that we work with only the very best. This is what Magana Flowers has chosen to pursue. Of course the initial cost of investing in IPM and biological control methods is expensive but it pays off in the long run," he said.

And as the reality of the vagaries of weather hits home bringing with it pests and diseases that thrive in hot or cold conditions, flower farms have taken innovations that addresses this challenge a notch higher. Red Lands Roses for example through its Fulsog technology sprays water in greenhouses to increase humidity, a process called fogging. The foggers automatically spray mist every three to four minutes. This water is mixed with Chlorine to control Powdery Mildew which can wipe yields within days.

Barcoding one of the elements in flower production that ensures traceability across the value chain

Fertigation one of the recent technologies that distribute fertilizers to flowers

And as the markets continue to demand responsible flower growing that takes care of the environment, flower growers have angled towards practices that reduce carbon emission. At Red Lands Roses, an elaborate railing system from the greenhouses to the pack house ensures that once flowers are harvested, they are transported using a medium that does not emit any gases. This is in contrast to tractors that have traditionally been preferred but that are known to produce toxic fumes.

The flower company also rears sheep which feed on grass, allowing the company to do away with mowers. Oserian Development Company in Naivasha has kept sheep for 'mowing' vegetation among other uses while at Flamingo Farm, donkey carts ferry flowers from the greenhouse to pack houses. "Kenya has demonstrated to the markets that it takes seriously the aspect of responsible flower growing even as the growers cut on cost by embracing these innovations. I see an increase in this innovations going forward which portends a robust industry," said Mr. Fox.

The Dutch greenhouse technology giving vegetable farming a fresh face

As the country looks to new and innovate ways of producing food with minimum resources like water, fertilizer and synthetic crop protection methods, a new project is breathing new life to that resolve by introducing unique Dutch greenhouse technology as it seeks to bolster farming for business among vegetable farmers.

The project, dubbed Growing Solutions Kenya, is funded by the Dutch government, implemented by a consortium of 12 Dutch technology providers among them HortiMax, Bosman Van Zaal and Koppert and is in partnership with Latia Resource Center where the demonstration greenhouses are located.

The idea behind the programme is to introduce Dutch technology that is adapted to local conditions chief among them automation combined with training farmers and other agricultural officers.

At the Latia Resource Center, which is the local partner, three demonstration plots have been set up where interested farmers are trained on key farming practices including biological pest control methods, hydroponics and economical use of water.

"Water is a scarce resource and with changes in weather we need to be prepared for more acute shortages. This technology means that growers are least concerned about water because the project manages every drop of water through an automated system while taming diseases through a soiless growing technology," said Nico de Groot the Project Manager of Growing Solutions Kenya

Although the project hopes to scale to other vegetables, its premier focus has been on tomato due to the crop's importance in the country. It has been classed as the third most important vegetable in the country in production and consumption with the country having produced 494,036.5 tonnes of tomato with a market value of $15.8billion last year.

Nico de Groot the Project Manager of Growing Solutions Kenya (L), inspecting one of the greenhouses

Three greenhouse systems have been set up to demonstrate to farmers the possibilities for producing high quality tomatoes at high quality levels. Based on different technologies, the greenhouses have been set up to allow smaller, start up farmers to start at a more basic technology setting while offering opportunities for larger, more experienced growers to invest in the next level of greenhouse production technology. "We have the manual, the semi manual and the fully automated greenhouses to allow farmers sample what they feel comfortable with. Of course technology is varied in the three greenhouses and so are the growing conditions," added Mr. Groot.

The manual greenhouse also dubbed the basic module has gutters that are 4 meters from the ground with a fixed ventilation window at the top of the greenhouse. Its sides are open and covered with insect netting to ward off predators. The internal frame is strong enough to support the crop load while crops here are grown using soil. Water and fertilizer are also applied manually through drip lines.

The semi automatic greenhouse which is also called the Plus module is designed similarly to the manual one but provides the option of opening and closing the top vent and side walls. This is done manually. Unlike the basic module water and fertilizer application is automated through a computerized machine FertiMix-Go. This allows for timely and controlled application of fertilizer and water according to a pre set schedule as per the needs of the plants. Crops in this this greenhouses are grown through soil.

Demonstration Project

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Field Day

June 7, 2016

Latia Resource Center Ltd.

Topic:
Dutch greenhouse technology for Kenyan vegetable growers

info@greenfarming.nl
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The advanced module which is the superior greenhouse technology of the three is fully automated. Here the internal growing climate is fully controlled by a unique machine known as iSii. The greenhouse has a movable screen to protect the plants and optimize the growing climate. Production is through hydroponics in a 50- 50 per cent mixture of coco peat and pumice.

The project which has attracted farmers from Naivasha, Machakos, Kiambu and Murang'a clusters the farmers in groups of 15 to 20 in trainings that happens once every month for six months before farmers graduate. "We have different training sessions like fertigation, crop management and financial training on crops that can give maximum returns on investment. We also ensure that as much as we concentrate on the theoretical training, we give the farmers as much time as is possible in practicals specifically interacting with the various greenhouse technologies. It is important if we are to ensure that knowledge transfer is effective," Mr. Groot said.

As a health conscious middle class burgeons, dictating the choice of food they take and changes in weather bring new challenges like water scarcity and emergence of new pests and diseases, Growing Solutions project is keen on tapping more farmers into its technology, letting farmers worry less about crop production and focus on other key aspects of value chain like markets.

Field days are open to farmers with short visits costing Sh1500. Farmers interested in training can contact the resource center to learn more about the various packages.

For more information on the project contact:

+254705788 689
info@greenfarming.nl
www.greenfarming.nl

HortIMPACT

Stefan Engels, team leader, Kenya Markets led Horticulture Project (KMHP)

Horticultural farmers in the country are increasing yields, taming post-harvest losses and accessing ripe markets following the introduction of a five-year programme that brings the best of technologies and knowledge sharing between Netherlands and Kenyan private businesses.

Christened Market-led Horticulture Programme (HortIMPACT), the programme is being supported by international development organization SNV and focuses on eliminating hiccups among small and medium farmers across the horticultural value chain.Other partners include HIVOS, Solidaridad and DLV Plant,, Wageningen UR, Fresh Dynamics Asia and AgriProFocus

Since its introduction in January 2015, it has made impressive inroads in the nine key horticultural counties namely Makueni, Kiambu, Nyeri, Laikipia, Nyandarua, Meru, Nakuru, Narok and Uasin Gishu.

The project has been acting as a link between farmers and other players in the value chain which has seen the farmers easily access domestic and international markets. The programme has also collaborated with agencies in national and county governments with a view to setting up policies that embrace market inclusion in a sustainable way.

In its attempt to improve food security, HortIMPACT has, in partnership with agrobased institutions rolled out a series of trainings on good farming practices including GlobalGap ensuring that farmers understand good farming practices including checking pesticide residue and ensuring safety and quality.

In one of such trainings facilitated by SNV Hortimpact team, 28 farmers attended the KHS Kiambu Bibirioni Demonstration Site, where they were trained by experts from Hortipro, Syngenta and Kenya Highland Seed on tomato farming. In a hands on training, farmers learnt about crop desuckering-the process of removing excess branches from the plant to reduce competition for nutrients, trellising, weeding, top dressing fertilizer application and crop protection.

And in a country where farmers lose up to 40 per cent of yields after harvest, the programme has been introducing technologies that reverse the trend through integrated pest management, tunnel farming, storage solutions, effective packaging and efficient transportation.Kenya Highlands Seed Company for example focuses on promoting innovative technologies in vegetable production including greenhouse technology, while Koppert trains farmers on integrated crop management to help them manage Bacterial Wilt, one of the most voracious horticultural pests. Soils Care on the other hand works with farmers in soil testing through hand held devices and advising them on fertilizer use while Maji Milele assists farmers with prepaid water for irrigation.

Agrico, a Netherlands potato seed company working with SNV on the HortImpact project has been training small scale farmers on breeding and multiplying high yielding varieties which has seen farmers yields increase up to five fold. The group seeks to reach 20,000 East African farmers along the potato value chain. It has been a successful venture that recently saw the company awarded the Ambassadors' Prize 2016. The award was announced during the Ambassadors' Conference in The Hague, and is awarded every two years to the company that exports sustainably, or operates a company abroad, in the most outstanding way.

Omnivent another company in the project specializes in proper storage of potatoes for a period of up to 6 months in case of post-harvest oversupply leading to glut, with other french fries and chips making companies are buying potatoes from farmers group at better prices for processing in a classic market synergy.

For avocado farmers farmers are introduced to the export markets including farming market attractive varieties while in mango growing regions,farmers are trained on fruit value chain and processing of mangoes for local market.

By BOB KOIGI and JAMES MWANGI

Dow Agrosciences launches Closer 240SC to tame notorious pests

Global crop protection powerhouse Dow Agrosciences in keeping with its resolve to develop new and sustainable crop protection solutions that addressed changing times, has unveiled a first of its kind insecticide targeting sap feeding insects, aphids, mealybugs and whiteflies, across a basket of major crops like roses, carnations cotton, leafy and fruiting vegetables and cereals among others.

Dubbed Closer 240SC, the new insecticide is unique, containing an active ingredient Isoclast TM from a new chemical class of insecticides known as sulfoximines in the chemical class 4C. It is the only active ingredient in this class heralding a new way of combating the most notorious insect pests.

In Kenya as is globally sap sucking insects are the bane of growers with some like thrips being responsible for up to 70 per cent of yield losses while causing major economic losses. The less than a sixteenth of an inch long, black slender insect that resembles tiny dark threads when viewed without hand lens, has been Kenya flower farmers' nightmare having left a trail of destruction and losses as it defaces petals making them unattractive to buyers. It has been a herculean task taming the pest with North American origin since it nestles deeply into rose blossoms. It has required varied and intensive control measures key among them the use of insecticides. As a result some of these insects have developed resistance to these insecticides. Numerous studies conducted on Isoclast however have shown that majority of the sap sucking insects that showed resistance did not show any cross resistance with Isoclast. This, owing to the active

ingredient's ability to kill the pests on contact and through ingestion, causing overstimulation of the insect nervous system leading to poisoning and eventually death. The faster knockdown effect is achieved at lower rates with scientists recommending 12 to 150 grams for every hectare depending on the target pest and the crop.

The insecticide which has minimal impact on beneficial insects like bees, kills the pests almost instantly and continues to protect the flowers for a further one to two weeks. It leaves no persistent residues in the soil and does not accumulate.

This prowess hasn't gone unnoticed. In 2014 IsoclastTM won the Agrow Award for the best new crop protection product and an R&D top 100 award for Closer™ 240SC and TransformTM 500WDG formulations, both Dow AgroSciences products.

Notable benefits include:

- Effective at low use rates
- Excellent knockdown and residual control
- Excellent translaminar and systemic activity
- Effective against insect pest populations resistant to other insecticides
- Valuable rotation partner with other chemistries
- Minimal impact on beneficial insects, including bees and natural enemies, when applicators follow label directions for use.
- Comes in a convenient suspension concentrate (SC) formulation, making it easy to mix and use

The launch of Closer 240SC has received major thumbs up from the Kenya flower industry for its unrivaled potential in addressing growers and markets concerns at a time when changes in weater has led to proliferation of more and new pests and markets have become more sensitive to what they buy.

"The launch of Closer240SC is indeed timely for the industry as growers continue to struggle with pest pressures. It is gratifying to note that the new quality product is dealing with some of the difficult and stubborn pests to manage and keep our production managers awake all night," said Kenya Flower Council CEO Jane Ngige during the launch at Enashipai Spa and Resort in Naivasha.

Mrs. Ngige further added that the fact that the insecticide can be integrated with IPM was a plus to the industry that was looking at integrating hybrid pest control methods which met market requirements while promoting sustainability and protecting the environment.

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The changing face of greenhouse technology

In the late 1980s Amiran brought consultants from Israel to advise the future flower growers of Kenya on the adoption of large scale greenhouses

By BOB KOIGI

A booming agribusiness sector, vanguard farmers keen on maximizing yields and vagaries of weather have been behind the burgeoning uptake of greenhouses in the country. This uptake, traditionally a preserve of large companies has inspired new innovations like automatic greenhouses with sensors that monitor climatic conditions like humidity and correct these conditions without human involvement to those that alert growers remotely when to water greenhouses.

The drivers of the greenhouse technology has been the flower industry having embraced it in the 1980s. Then greenhouses were basic wooden structures that were heavily priced making them a preserve of the big flower companies. "When we first set up the farm some 20 years ago, we grew our flowers in wooden greenhouses because that was the technology that was available then. It is interesting how fast the technology has evolved over the years and the difference it has made in flower production," said Isabelle Spindler the managing director at Redlands Roses.

At the heart of greenhouse innovation in Kenya is Amiran Ltd which introduced the first greenhouses in the country while offering agronomic support for flower growers.

In the late 1980s the company brought consultants from Israel to advise the future flower growers of Kenya on the adoption of large scale greenhouses, which today are part of Kenya's heritage as they symbolize Kenya's position as the leading floriculture producer in the world.

Continuing with this 'hands on' approach, Amiran helped to build the first flower farms in Kenya, complete with greenhouses and advanced irrigation systems at the time and has since erected 90 percent, 2700 hectares of the 3000 hectares of greenhouses in Kenya.

The company has since trained its team of Kenya professionals to do the same construction with the same precision, care and technical knowhow. "It has been a heartwarming experience watching the kind of reception greenhouse technology has received especially among flower growers who form the bulk of the greenhouse owners. And as the technology continues to evolve we can only predict more uptake and easier means of flower and crop production in the country," said Shay Nir, Head of Agro Projects, Amiran Kenya.

With flowers being an all year round crops, greenhouses have come in handy for growers guaranteeing them of uninterrupted production while taming pests and diseases. But flower growers have also embraced innovations in greenhouses to suit their production needs, while maintaining the highest levels of flower quality.

Growers like Oserian Development Company have embraced geothermal heating technology in their greenhouses to enhance flower growth and tame pests and diseases

At Redlands Roses, one of the growers celebrated for its top notch technology an automatic technology controls the opening and closing of the greenhouse roof to allow sunlight. This is complemented by another technology that embraces fogging, the spraying of water to increase humidity in the greenhouse. The company's largest greenhouse, Zulu, sits on 4 hectares.

Oserian Flower Farm has also taken growing their greenhouse flowers a notch higher by operating the largest geothermal greenhouse heating project in the world to produce 216 hectares of roses, carnations and statice.

The company uses the steam to sterilize and eliminate fungus from the water that is piped to the plants. The intensive use of geothermal energy and the application of innovative growing techniques have made Oserian Development Company a world leader in its field.

Alowoutputexplorationwelllocatedon Oserian Farm in the Olkaria geothermal field is used to supply geothermal heat to a greenhouse complex. Heating controls night-time humidity levels in the greenhouses, thereby alleviating fungal disease and enhancing flower growth. The non-condensable gases, predominantly CO2) produced from the well are used to enrich the atmosphere in the greenhouses, further enhancing flower growth.

"Flower production is no mean feat and with competition in the country and among other flower producing nations heating up growers leave nothing to chance. Markets have warmed up to the idea and it is interesting the kind of overwhelming request we get. It is also interesting to also see how fast the greenhouse technology is evolving buoyed to a great extent by need to grow flowers responsibly," added..

His sentiments are echoed by Mrs. Spindler who posits that the kind of greenhouse technology is dictated by growers need to produce high quality flowers at lower costs. "We are talking about cutting cost of producing the flowers without compromising the quality of flowers. At Redlands Roses that has been our guiding mantra. We therefore strive to embrace the latest greenhouses that help us achieve this goal. We are also always keeping tabs on the dynamics of greenhouse technologies," said Mrs Spindler.

From the wooden greenhouses with archaic covering, to the current greenhouses comprising of plastics and multiwall sheets of polycarbonate material, industry players now believe as demand for flowers continue to grow and as the need to utilize space and maximize on quality the technology will only get better. "These are interesting times with market demands predominantly driving the evolution of greenhouse technologies. In future as this demand grows we look forward to more sophistication and quality," said Mr Nir.

Greenhouse technologies have been driven by growers need to produce high quality flowers at lower costs

KOPPERT
BIOLOGICAL SYSTEMS

"Lossof the fertile top layer of soildue to erosion and expanding rangelands are some of the challenges that we face in agriculture. For us to mitigate these challenges, planting trees is the best solution. Therefore, we have to do everything possible to ensure healthy trees. That is why we are partnering with Koppert to use biological control to produce good, healthy seedlings." explained Mr. John Orwa, the Forester at Karura Forest.

One of the mandates of the foresters at Karura Forest is to encourage people to plant trees in order for Kenya to achieve 10% forest cover by 2030 as recommended by the United Nations. This is important because forests are key to supporting life on earth. The United Nations Food and Agricultural Organization reports that up to three quarters of the world's biodiversity is hosted in forests. With increasing awareness of the need to preserve the numerous and fundamental functions of trees, it has never been more important to invest in the sustainable management of our forests.

Biological control is an important tool that should be applied in protecting forest trees and especially tree seedlings. Biological control involves the use of living organisms to manage pest populations, making them less economically damaging than they would otherwise be. Trichoderma harzianum has been found to be most effective in inhibiting the growth of fungal diseases. The fungus can protect the trees by establishing itself on the root zone of the trees, forming a physical barrier against attack from pathogens and promotes healthy root development, leading to improved uptake of water and nutrients. This results in stronger and healthier trees that are more resistant to stress caused by diseases, sub-optimal feeding or climatic conditions.

Continued observation of tree seedlings treated with Trianum revealed that a number of tree species responded quite well. By early March, Markhamia(Markhamia lutea) and Nandi flame(Spathodia nilotica) species especially showed extreme positive response in terms more vigorous growth and vegetation.

"Indigenous trees such as Markhamia and Nandi flame are much better at conserving the environment than exotics due to their broad canopies and strong rooting systems. That is why we encourage people to plant more indigenous trees than exotics. However, indigenous trees are more difficult to propagate than exotics. Some species can take several weeks or even months to germinate. For this reason, I think the biological control methods might prove effective but we shall take more time to make our observations," Mr. John Orwa pointed out.

Against the backdrop of the global celebration of forests through the International Day of Forests marked every March 21, Koppert hopes to continue this progressive partnership with Karura Forest in order to enhance the survival and continued regeneration of the remarkable Karura Forest.

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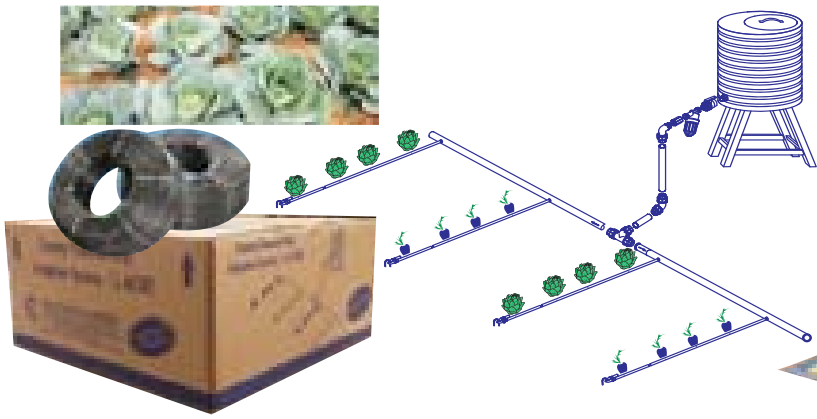

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Smallholder farmers turn to basil farming for good returns

By BOB KOIGI

Smallholder farmers in Nakuru County who traditionally farmed maize and beans have found a new lifeline in a versatile aromatic herb that belongs to the mint family dubbed basil. The herb, which the farmers grow for the export market, is now earning them up to Sh200,000 every month.

With guidance from Premier Seeds Limited, a vegetable seed company, the farmers have become net supplies of a herb whose multiple health and nutritional benefits has made it a hit internationally.

International buyers say East Africa meets a paltry 15 per cent of their demand for the herb even as markets continue to balloon following discovery of new uses of the herb. "The markets have expressed insatiable appetite for the herb. With our first farmers, we are producing 1.6 tonnes of basil against a demand 6tonnes per month from the importer we work with. The onus is on us to sell us more, the markets keep telling us," said Mr. Simon Andys the founder of Premier Seeds.

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

The herb has become an instant hit among Nakuru farmers making an initial foray into horticulture for its ease of cultivation and growth traits. A bushy annual plant, it takes on average 42 days to mature and produces light green silky leaves which tastes somewhat like cloves with a strong pungent and sweet smell. Farmers harvest the leaves after every ten days. A typical greenhouse measuring 8 by 30 meters produces on average 125 kilos of basil every week with a kilo going for Sh390. In a month a farmer is able to make on average up to Sh180, 000. The crop is also a pest and mosquito repellent meaning and is rarely attacked by pests.

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

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

And as the international markets warm up further to the culinary herb, Premier Seeds is now preparing to work with the farmers to grow another set of herbs including coriander, oregano, lovage, dill and Melissa in the course of the year. "We are responding to market demands. The demand for basil has been meteoric and when the buyers suggested that we should consider growing the other herbs we said why not," Said Andys.

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Flower Growers and Exporters

BREEDERS AND PROPAGATORS

NO.	COMPANY	LOCATION	CONTACT PERSON	PRODUCT	TELEPHONE	E-MAIL ADDRESS
1.	Interplant	Naivasha	Mr.Geofrey Kanyari	Breeders	254 712215419	info@interplantea.co.ke
2.	Meilland International	France Meikatana	Mr. Bruno Etavard		33-4-94500320	relationsbupliques@meiland.com
3.	Olij Kenya Breeding	Naivasha	Miss. Sally Nicholas	Gares	254 735338062	s.nicholas@olijrozen.nl
4.	Olij Breeding BV	Naivasha	Mr Philippe Veys	Red Paris	31629521612	p.veys@olijrozen.nl www.olijrozen.nl
5.	Preesman Kenya	Nairobi	Mr.Jelle Posthumus	Roses	254 203566135	preesman@preesman.com
6.	Schreurs EA Ltd	Naivasha Roses	Mr.Haiko Backer		2545050203	sales@schreurskenya.com
7.	Stokman Rozen Kenya Ltd.	Naivasha	Mrs. Sarah Tham	Carnation	254720603994	sarah@srk.co.ke
8.	Terra Nigra Flower Park		Mr.Peter Van der Meer	Rose	254 722926588	petervandermeer@terranigra.com
9.	Van Kleef	Naivasha	Ms. Judith Zuudier	Roses	254 05050327	roses@vankleef.nl

GROWERS/EXPORTERS

NO.	COMPANY	LOCATION	CONTACT PERSON	PRODUCT	TELEPHONE	E-MAIL ADDRESS
1	AAA roses	Rumuruti	Mr.George Hopf	Roses	254-733746737	george@aaagrowers.co.ke
2	Africalla	Limuru	Mr.Robert Holtrop	Zantedeschia	254-721837968	rob@sande.co.ke
3	Aquila Flowers	Naivasha	Mr.Yogesh	Roses	254-722200613	info@aquilaflowers.com
4	Beauty line	Naivasha	Mr. Munene	Gypsophila,solidago	254-721372906	beauty@beautyli.com
5	Baraka flowers	Ngurika	Mr. Douglas	Roses	254-727038432	
6	Bigot Flowers	Naivasha	Mr. Jagtap K.	Roses	254-722205271	jagtap.kt@bigotflowers.co.ke
7	Batian flowers	Timau	Mr.A Borlage	Roses	254-711717987	andre@batianflowers.co.ke
8	Black petals Ltd	Limuru	Mr. N Junder	Roses	254-722848560	nj@blackpetals.co.ke
9	Buds&blooms-bliss flora		Mr.sarchil A	Roses	254-720804784	appachu7@yahoo.com
10	Branan&Mosi Ltd	Nairobi	Mr. A Wahome		254-722204911	mwaiwahome@mosiflowers.co.ke
11	Bilashaka Flowers Ltd	Naivasha	Sales Manager	Roses	07-28995279	hrm.bilashaka@zuurbier.com
12	Caly flora Ltd	Nairobi	Ms.Catherine G	Cut Flowers	254-722722086	
13	Creative Roses Ltd	Nairobi	Mr. Bas Smit		254-733501640	info@creative-roses.com
14	Carzan Flowers	Kipiripiri	Mr.Kiarie Gitau	Summer Flowers	254-722931159	
15	Credible Blooms	Nairobi	Mr.George	Roses	254-725762099	
16	Colour crops	Timau	Mr. Simon Baker	Summer Flowers		simon@siluba.co.ke
17	Colour vision roses Ltd	Naivasha	Mr. Peter vandemeer	Rose Breeders	254-05050310	peterverndermeer@terranigra.com
18	Celinico Flowers	Limuru	Mr.Chris Shaw	Roses	254-06672170	celinico@nbinet.co.ke
19	Charm Flowers	Kitengela	Mr. Ashok Patel	Roses	254-0202222433	info@charmflowers.co.ke
20	Carnation Plants Ltd	Athi River	Mr. E. Fieldman	Carnations	020 - 2045162	evi@exoticfields.com
21	Desire Flora	Isinya	Rajat Chaohan	Roses	254-736329980	info@desireflora.com
22	De Ruiters	Naivasha	Mr.Sebasten Alix	Roses	254-720601600	info@drea.co.ke
23	Doralco Kenya Ltd		Mrs. C. Chenet		020-7122179	info@doralco.co.ke
24	Elbur flora	Elburgon	Mr.Peter K	Roses	254-724722039	eflora@africaonline.co.ke
25	Enkasiti flowers	Thika	Mr.Thambe	Roses	254-724722039	enkasiti@form-net.com
26	Equinox Horticulture Ltd	Timau	Mr. John Mwangi	Roses	254-722312577	john@equinoxflowers.com
27	Everflora Ltd	Juja	Mr. Khilan Patel	Roses	067-5854043	khilan@dmblgroup.com,
28	Interplant Roses	Naivasha	Mr. Geofrey Kanyari	Breeders	254-712215419	info@interplantea.co.ke
29	Isinya Flowers	Isinya	Marketing Manager	Roses	07-28689000	info@isinyaroses.com
30	James Finlays	Kericho	Mr. John Magara	Roses	254-722206627	flower@finlay.co.ke
31	Jatflora Gilgil		Mr. James Oketch	Summer Flowers	254-724418541	jatflora@gmail.com
32	Greystones farm		Mr. Silus Mbaabu		254-722312316	mbaabu@greystones.co.ke
33	Groove	Naivasha	Mr. Peter	Roses	254-724448601	groovekenya@gmail.com
34	Golden tulip	Olkalau	Umesh		254-739729658	
35	Gatoka Ltd	Thika	Mr. Martin Gacheru	Roses	020 - 20110254	gatoka@swiftkenya.com
36	Harvest k Ltd	Athi River	Mr. Farai Madziva	Roses	254-722849329 f	arai@harvestflowers.com

Flower Growers and Exporters

NO.	COMPANY	LOCATION	CONTACT PERSON	PRODUCT	TELEPHONE	E-MAIL ADDRESS
37	Hatabor Rainbow Blooms	Limuru	Mr. John Ndung'u		254-7213850959	
38	Hamwe Ltd	Naivasha	Mr. Andrew K	Hypericum	254-722431170	production@hamwe.co.ke
39	Highlands Plants	Olkalau	Mr. Leonard K	Outdoors	254-721345829	sales@highlandplants.co.ke
40	K-Net Flowers Ltd		Mr. Mike King'ori		020-3875662/3	info@k-netflowers.com
41	Kisima flowers	Timau	Mr. Kenneth	Roses	254-722475758	flowers@kisima.co.ke
42	Kenflora	Kiambu	Mr. Aleem Abdul	Roses	254-722311468	info@kenfloraa.com
43	Kimman Roses Ltd	Nairobi	Mr. Daniel Moge	Catch,Versilia	254-721734104	kimmanexp@gmail.com
44	Karuturi flowers	Naivasha	MR. Silvester Saruni	Roses	254-722873560	henry.muller@karuturi.com
45	Kreative Roses Ltd	Naivasha	Director	Roses	254-20-202627422	info@kreative-roses.com
46	Kariki Limited	Juja	Andrew Fernades	Hypericums	07-22844568	andrew.fernandes@bondet.co.ke
47	Karen Roses Ltd	Nairobi	Mrs. R. Kotut	Roses	020- 2078270	karen@karenroses.com
48	Fides Kenya Ltd	Embu	Mr. F. Mwangi	Roses	020 - 3570182	info@fideskenya.com
49	Finlay-Tarakwet	Kericho	Mr. John Magara	Roses	254-722873539	john.magara@finlays.net
50	Finlay-cherimel	Kericho	Mr. Aggrey simiyu	Roses	254-722601639	aggrey.simiyu@finlays.co.ke
51	Finlay-Flamingo	Naivasha	Mr. Peter Mwangi	Roses	254-22687706	peter.mwangi@finlays.net
52	Finlay-Kingfisher	Naivasha	Mr. CharlesNjuki	Roses	254-724391288	charles.njuki@finlays.net
53	Finlay-Lemotit	Londian	Mr. Richard siele	Carnations	254-721486313	richard.siele@finlays.net
54	finlay-siraj	Timau	Mr. Paul Salim	Carnations	254-722470717	paul.salim@finlays.net
55	Finlays-sirimon	Timau	Ms. Purity Thigira	Lilies 2	54-733606411	purity.thigira@finlays.net
56	Fides Kenya Ltd	Embu	Mr. Francis Mwangi	Roses	254-06830776	info@fideskenya.com
57	Flamingo Flora	Nairobi	Mr. Sam		254-721993857	s.ivor@flamingoflora.co.ke
58	Flora Delight	Limuru	Mr. Hosea Andanyi	Summer Flowers	254-724373532	hosndai@yahoo.com
59	Flora Ola	Solai	Mr. Wafula		254-708382972	floraolaltd@gmail.com
60	Florensis Hamer	Naivasha	Mr. Edyy Verbeek	Cuttings	254-02050010	florensis@florensis.co.ke
61	Fontana-Akina	Nakuru	Mr. Alfhan	Roses	254-722728441	Alfhan@fontana.co.ke
63	Fontana LTD	Salgaa Salgaa	Mr. Kimani	Roses	254-734333313	production@fontana.co.ke
63	Fontana Ayiapa	Nakuru	Mr. Gideon Maina	Roses	254-721178974	gideon@fontana.co.ke
64	Florema(k)Ltd	Naivasha	Mr. Perter Maina	Begonia	254-050-2021075	info@floremakenya.co.ke
65	Flower Connection Ltd		Arun Mushra		254-710625484	arun@eaga.co.ke
66	Fontana Ltd		Mr. A. C. Achaiah	Roses	051 - 343156	kakul@fontana.co.ke
67	Longonot Horticulture	Naivasha	Mr. Shando Rai	Roses	254-05050173	longonot@vegpro-group.com
68	Lakshmi Group Ltd	Nairobi	Mr. Micheal Povarov		254-717291197	micheal.lakshmigroup@gmail.com
69	Larmona	Naivasha	Mr. Peter Mureithi	Roses	254-722238474	lamonaacounts@africaonline.co.ke
70	Lobelia Farm	Timau	Mr. Peter Viljoen	Roses	254-06241060	info@lobelia.co.ke
71	Lex+RoseCreators	Naivasha	Mr. Steve Outram	Roses	254-733609863	steve@lex-ea.com
72	Lauren International Flowers Ltd		Mr. Joseph Tawk		020 - 2358119	laurenflowers@accesskenya.co.ke
73	Maridadi Flowers Ltd	Naivasha	Jack Kneppers MD	Roses	07-33333289	jack@maridadiflowers.com
74	Mosi Ltd	Thika	Ms. Alis Murugi	Roses	254-722204911	alicemurugi@mosiflowers.co.ke
75	Mahee Flowers Ltd	Olkalau	M. vijay Kumar	Roses	254-020822025	info@eaga.co.ke
76	Magana Flowers (K) Ltd	Kiambu	Mr. P.Mwangi	Roses	020-2017651-3	pmwangi@maganaflowers.com,
77	Mau Agritec	Isinya	Mr. Kori	Roses	254-722206318	gm@mauaagritech.com
78	Maasai flowers	Kitengela	Mr. Wilfred Munyao	Roses	254-725848912	wmunyao@sianroses.com
79	Mweiga Blooms Ltd	Mweiga	Marketing Manager	Roses	07-33741203	info@mweigablooms.com
80	Mount Elgon Orchards Ltd.	Kitale	Bob Andersen	Roses	07-35330592	info@mtelgon.com
81	Mahee Flowers Ltd	Olkalau	Mr. T. Srinivasan	Roses	020 - 827488	peeush@eaga.co.ke
82	New Hollands Flowers	Olkalau	Mr. Guna Chitran	Roses	254-700718570	guna@bth.co.ke
83	Ngong' Roses	Ngong	Mr. Charles Maina		254-0202700660	maina@aricanonline.co.ke
84	Nirp EA Ltd	Naivasha	Mr. Ethan Chege	Rose Breeders	254-203563141	n/a
85	Nini farm	Naivasha	Mr. Philip K	Roses	254-05050406	philipk@niniltd.com
86	Nathe Enterprises		Marketing Manager		254-722526959	www.natheenterprises.co.ke

Flower Growers and Exporters

	COMPANY	LOCATION	CONTACT PERSON	PRODUCT	TELEPHONE	E-MAIL ADDRESS
87	Nature Grown Flowers Ltd		Mr. W. Kamami		020 - 2152176,	naturegrown@mbambu.com
88	Omang Africa Blooms	Nakuru	Mr. Inder/Mr. Ketan	Roses		lowers@flora.co.ke
89	Ol Njorowa Ltd	Naivasha	Mr. David Mousley	Roses	254-722833122	mbegufarm@iconnect.co.ke
90	Olij Rozen	Naivasha	Ms. Sally Nicholas		254-735338062	sales@olijkenya.com
91	Oserian Dev. Co. Ltd	Naivasha	Sales Manager	Roses	07-27534550	info@oserian.com
92	PJ flora	Isinya	Mr.Absalom O	Roses	254-721423730	pjdaveflowers@wananchi.com
93	PJ Dave Flowers Ltd	Isinya	Mr. Hitesh Dave	Roses	254-04521381	pjdaveflowers@wananchi.com
94	Panda flowers Ltd	Naivasha	Mr. Paul Wanderi	Roses	254-5050046	wanderi@pandaflowers.co.ke
95	Primarosa flowers Ltd	Athi River	Mr. Dilip Barge	Roses	254-733618354	dilip@primarosaflowers.com
96	Penta FlowersLtd	Thika	Mr. Tom Ochieng'	Roses	254-733625297	penta@kenyaweb.com
97	Protea farm	Timau	Mr. Philip	Roses		info@lobelia.co.ke
98	Plantations Plants	Naivasha	Mr. William Mumanyi	Geraniums	254-723622456	pplants@kenyaweb.com
99	Porini farm	Keringet	Pitamber Ghahre	Roses	254-726774955	porine:isinyaroses.com
100	Pollen Synjenta Ltd	Ruiru	Mr. Daniel Kisavi		254-733603530	Daniel.kisavi@syngenta.com
101	P.P flora	Rongai	Robert Rukingi		254-1890087	ppflora02@gmail.com
102	Primarosa flowers Ltd	Athi River	Mr, Dilip Barge	Roses	254-733618354	dilip@primarosaflowers.com
103	Primarosa zuri Flowers	Nyahururu	Mr.Vijav	Roses	254-721823675	vj@zuri.co.ke
104	Preesman Kenya	Nakuru	Michael Kikwai	Roses	254-720574011	kikwai1980@yahoo.com
105	Panocal International Ltd	Kitale	Dr. P. Wekesa	Roses	054-30916/31655	pwekesa@africaonline.co.ke,
106	Red Lands Roses Ltd	Ruiru	Spindler	Roses	P.O. Box 10-01000	aldric@redlandsroses.co.ke
107	Raceme Naivasha		Mr. Bonny	Gypsopilla/vegs	254-721938109	bonny@kenyaweb.com
108	Ravine Roses Ltd	Eldama Ravine	Mr. Kennedy		254-720339985	kapkolia@karenroses.com
109	Rift Valley Roses	Naivasha	Mr. Peterson Muchiri	Roses	254-721216026	rvr@livewire.co.ke
110	Riverdale Blooms Ltd	Yatta	Ms. Zipporah Mutugi	Roses	254-733722180	rdale@swiftkenya.com
111	Rose plant	Kitengela	Mr.Atenus Roses			
112	Roseto Limited	Nakuru		Rose		s roseto@megaspringroup.com
113	Rosepath Petals Ltd		Director	Roses	254-51-2216400	sales@rospathroses.com
114	Shalimar Flowers (K) Ltd	Naivasha	Export Manager	Roses	254-722811832	
115	Karuturi Ltd	Naivasha	Mr. T. Srinivasan	Roses	020 - 827488	peeush@eaga.co.ke
116	Schreurs EA Ltd	Naivasha	Mr. Haiko Backer	Roses 2	54-5050203	sales@schreurskenya.com
117	Selecta Flora	Nairobi	Ms. Mary Mwangi	summer flowers	254-725075569	sales@floratrends.co.ke
118	Simbi Roses Ltd	Thika	Mr. Jefferson Karue	Roses 2	54-0202042203	kingi@sansora.co.ke
119	Sian Agriflora	Nairobi	Mr. Jos van der v	Roses/lilies	254-722203630	info@sianroses.co.ke
120	Sian Winchester	Nairobi	Mr. R Mulinge	Roses 2	54-725848910	rmulinge@sianroses.co.ke
121	Solo plant Kenya Ltd	Kiambu	Mr. Haggai Horwitz	Roses	254-732439942	hagai@soloplant.co.ke
122	Sun buds	Naivasha	Mr. Paul Kamau			sunbuds-k@kenyaweb.com
123	Sian Maasai Flowers	Kitengela	Mr. Andrew Tubei		254-722728364	atubei@sianroses.co.ke
124	Sugutu Flowers		Mr.Yabesh Marga		254-733719053	sugutugrowers@yahoo.com
125	Sunrose Nurseries	Athi River	Mr. Nehemiah A.		254-0203586939	info@sunrosenurseries.co.ke
126	Suera Flowers Ltd	Nyahururu	Ms. Susan Mureithi	Roses	254-724622638	sueraffarm@suerafarm.sgc.co.ke
127	Tambuzi flowers	Narumoru		Roses	254-0623101917	info@tambuzi.co.ke
128	Terra Nigra	Flower park	Mr. Peter vandemeer	Roses	254-722926588	petervandermeer@terranigra.com
129	Transebel Ltd	Thika	Mr.David Muchiri	Roses		admin@transbel.co.ke
130	Terrefleur Ltd		Mr.Kaluku		254-6730063	chris@terrafleur.com
131	Terrasol	Limuru	Mr. Sjaak Nannes	Cuttings	254-722387943	info@terrasolkenya.com
132	Timaflor Ltd	Timau	Mr. Bryan Allen	Roses	254-06241263	timaflor@wananchi.com
133	Tropiflora	Limuru	Krasensky	Carnations	254-020201390	Tropiflora@tropiflora.net
134	Timau Flair	Timau	Mr. Philip Ayiecha	Roses	254-723383736	
135	Tulaga Flowers	Naivasha	Mr. Dennis Wedd	Roses	254-724819377	tulagaflowers@africanonline.co.ke

Exporters Fruits & Vegetables

136	Uhuru Flowers	Timau	Mr.Ivan Freeman	Roses	254-722863252	ivan@uhuruflowers.co.ke
137	ValentineKibubuti	Kiambu	Ms. Suzan Maina	Roses		
138	Van den berg Roses	Naivasha	Mr, Johan Remeus	Roses	254-0505050439	johan@rosekenya.com
139	Vegpro-K Ltd	Timau	Mr. Vivek Sharma	Roses		vivek@vegpro_group.com
140	Waridi Ltd	Athi River	Mr PD Kadlag	Roses	254-724407889	kadlag@waridifarm.com
141	Windsor Flowers	Thika	Mr. Pardeep	Roses	254-06724208	farm@windsor-flowers.com
142	Xpresssion Flora Ltd	Salgaa	Mr. Samir	Roses	254-724518140	
143	Wilham Kenya Limited	Thika	Mr.Ashok N. Wandhekar	Fruits and Vegetables	254-724 265777	Kabukufm@eaga.co.ke
144	Zena Roses	Thika	Mr.Peter Ochami C	arnations	254-712006323	productionthika@zenaroses.co.ke

FRUITS AND VEGETABLES

NO.	COMPANY	LOCATION	CONTACT PERSON	PRODUCT	TELEPHONE	E-MAIL ADDRESS
1	AAA Growers Ltd	Nairobi	Mr. Neville Ratemo	Horticulture	020 - 4453970 - 4	admin@aaagrowers.co.ke
2	Belt Cargo Services Export Ltd	Nairobi	Mr. J. Muigai	French beans,babycorn	020-4448821	bcs@beltcargo.com
3	Best Grown Produce (K) Ltd	Mr. Paul Muigai		020 - 222755	bestgproduce@yahoo.com	
4	Chirag Kenya Ltd	Nairobi		Sales Team Spices&herbs	254 20-3573000	naturesown@swiftkenya.com
5	Canken International Ltd	Eldoret	Mr. Mohamed	chillies &fruits	020-222736367	canken@cankencargo.com
6	Darfords Enterprises Ltd	Athi River	Mr. Abdul	Vegetables	254-206622857	abdulkarim@darfords.co.ke
7	Delmonte Kenya Ltd	Thika	Sales manager	fruits	020-672141600	nanasi@freshdelmonte.com
8	PJ DAVE EPZ Ltd	Isinya	import&export manager	Dried herbs&Roses	020-354 2012	pjdaveflowers@wananchi.com
9	Dominion Vegfruits Ltd	Nairobi	Mr. John Mairura	Fruits&vegetables	020-823002/ 823003	vegfruits@wananchi.com
10	East African Growers Ltd	Nairobi	Mr. Peeush Mahajan	Fruits&vegetables	020-822034/25	peeush@eaga.co.ke, george@eaga.co.ke
11	Equatorial nut processors Ltd	Nairobi	sales manager	macadamia nuts	020-2030196	gatua@equatorialnut.co.ke
12	Everest Enterprises Ltd	Nairobi	Mr. John Karuga f	ruits&vegetables	020-3542009	smuhoho@everest.co.ke
13	Fian Green Kenya Ltd	Mombasa Rd	Mr. Francis Thuita	fruits&vegetables	020-826157,1	info@fiangeens.co.ke
14	Fresh An Juici Ltd	Embakasi	Ms. Maleka Akaberali	Fresh fruits &vegetables	020 -826090/3	maleka@freshanjuici.co.ke
15	Fresco Produce Ltd	Nairobi	Mr. Charles Mbugua	Vegetables	254-0722-764395	mbugua@frescoproduce.co.ke
16	Frigoken Ltd	Nairobi	Mr. D. Karim	fruits& vegetables	020-2391717	frigoken@africaonline.co.ke
17	From Eden Ltd	Nairobi	Mr. Zulfikar Jessa	Vegetables	020-8562203	roy@from-eden.com, zul@tilleygroup.com
18	Global Fresh Ltd	Nairobi	R. Chaudhry	Vegetables&fruits	020 - 827549/50	info@globalfresh.co.ke
19	Green Kenya Organization	Luanda	Charles Butiko	onion&Tomatoes	254-723 119111	greenkenya28@gmail.com
20	Greenlands Agro Producers Ltd	Nairobi	Mr. G. Murungi	fruits&vegetables	020-827080/1/2	murungim@greenlands.co.ke
21	Highlands canners Ltd	Nairobi	Sales manager	fruits&vegetables	020-8564048	info@highlandcanners.co.ke
22	Hillside Green Growers Ltd		Ms. Eunice Mwongera	fruits&vegetables	020 - 2397353	eunice@hillsidegreen.com,
23	Homegrown Kenya Ltd	Nairobi	Mr. Richard Fox	Flowers&vegetables	020-3873800	Richard.Fox@f-h.biz
24	Indu farm EPZ Ltd	Nairobi	General Manager	Vegetables	254-20-550215/6	info@indu-farm.com
25	Jakal services Ltd	Mombasa	Mr.Bandali	fruits& spices	254-7412229435	jakal@ikenya.com
26	Jungle macs EPZ Ltd	Thika	Sales manager	fruits&vegetables	020-2451841	info@junglemacadamias.com
27	Jetlak foods Ltd	Ruiru	Information	fruits&vegetables	254-722754181	mail@jetlak.com
28	Indu farm EPZ Ltd	Sameer Park	Mr. Christian Bernard	Fresh fruits &vegetables	020-550215/6/7	info@indu-farm.com
29	Kakuzi Ltd	Thika	Mr. Richard Collins	fruits,nuts,tea	"060- 2033012,"	rcollins@kakuzi.co.ke
30	K H E (1977) Ltd	Imara Daima	Mr. Manu Dhanani	Fresh fruits &vegetables	020-2517979	khe@khekenya.com,
31	Kandia Fresh Produce Suppliers Ltd	Nairobi	Ms. Lucy Mundia	fruits&vegetables	020 - 3500866	kandia@swiftkenya.com
32	Kenya Orchads Ltd	Nairobi	Sales manager	fruits&vegetables	254-2054161	N/A
33	Keitt Exporters Ltd	Nairobi	Asif Aman	Fresh fruits &vegetables	020 - 822829	asif@keitt.co.ke
34	Mace foods Ltd	Eldoret	Sales manager	Vegetables	254-720391290	info@macefoods.com
35	Mugama Farmers	Co-op Union Ltd	Murang'a	Sales Team Vegetables	254-728-358 211	mugamaunion@yahoo.co.uk
36	Makindu Growers & Packers Ltd	Nairobi	Mr. O.P. Bij Okra	Passion Fruit	020- 822812/196	info@makindugrowers.co.ke
37	Meru Herbs		Marketing manager	Organic products	254-20-4442081	meruherbs@meruherbs.com

Exporters Fruits & Vegetables

NO.	COMPANY	LOCATION	CONTACT PERSON	PRODUCT	TELEPHONE	E-MAIL ADDRESS
38	Mount Elgon Orchards Ltd	Kitale	Bob Andersen	Orchards	254-20 5431352	info@mtelgon.com
39	Mboga Tuu Ltd	Nairobi	Mr. J. Kent	Chillies&vegetables	020-3877988	mtl@wananchi.com
40	Mixa Foods & Beverages	Kisumu	Charles O. Odira	fruits&milk	254-733-714584	info@mixafoods.co.ke
41	Mosi Ltd	Juja	Rose wahome	fruits	254-722204911	mwaiwahome@mosiflowers.com
42	Migotiyo Plantations Ltd	Nakuru	Mr. B.K. Rao	Herds&seed production	051 - 2214898	alphegasisal@wananchi.com,
43	Namelok Exotics (K) Ltd		Mr. D.T. Sinkeet		0724-743258	info@namelokexotic.com
44	Njambiflora Ltd	Ms. Marie	Njambi	Vegetables	020-822506/7	njambiflora@yahoo.co.uk
45	Nicola Farms Ltd	Nanyuki	Ms. Grace Wanjiku	Fresh fruits &vegetables	020-2048874/76	marketing@nicola.co.ke
46	Olivado Kenya EPZ Ltd	Nairobi	Nairobi General Manager	Avocado	254-710-535303	gh@tanlay.com
47	Rea Vipingo Plantations Ltd	Kilifi	Managing Director	Sisal	254-721465035	info@reavipingo.co.ke
48	Saw Africa EPZ Ltd	Thika	General Manager		254-722-531106	wainaina_patrick@yahoo.com
49	Sacco Fresh Ltd	Nairobi	Mr. J. M. Muia	french beans	020-824687/8	info@sacco-fh.com
50	Shree Ganesh Ltd	Online	Mr. Kanji Kalyan Patel	Vegetables&onions	020 - 80243645	meleka@freshanjuici.co.ke
51	Sian Agiflora Kenya Ltd	Nairobi	Ms. Angelina Mangat	Calla Lilies	020-822220	rano@sianexports.com
52	Syngenta EA Ltd	Nairobi	Sales manager	Seeds	254-203222800	synjenta.east_africa@seynjenta.com
53	Sunripe (1976) Ltd	Nairobi	Mr. Hasit Shah	Fresh fruits &vegetables	020-822518/822879	info@sunripe.co.ke
54	Value Pak Foods Ltd	Nairobi	Mrs. J. R. Patel	fruits&vegetables	020 2695633	valuepak@wananchi.com
55	Valentine Growers CO.Ltd	Kiambu	Sales Team	Vegetables	254-720203765	info@valentine-flowers.com
56	Vegpro Kenya Ltd	Nairobi	Mr. Bharat. Patel	French beans	020-822831 - 4	bharat@vegpro-group.com
57	Wamu Investments Ltd	Nairobi	Mrs. Peris Muriuki	Fresh fruits &vegetables	020-822441	peris@wamu-investments.com

INSECTICIDE

Evisect® S

500 g/kg Thiocyclam hydrogen oxalate

Broad spectrum insecticide for difficult to control pests

- A novel insecticide with a rapid knockdown effect against: *Lyriomyza sp., Tuta absoluta,* Whitefly, Thrips, Aphid & Mealybug
- Dual mode of action; through contact & stomach action
- Resistance management tool - unique mode of action offering alternative to other insecticides
- Good systemic activity with fast acropetal translocation within plants
- A good IPM profile

Registration number: PCPB (CR) 0202. Hazard Classification: WHO Class III
NOTE: Always read the product label before usage .

Distributed by: ELGON KENYA LIMITED

Arysta LifeScience

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Orvego®

Orvego® is the innovative fungicide from BASF that combines the well known active ingredient dimethomorph with Initium® to form a premium preventive shield against downy mildew.

Downy mildew, Peronospora sparsa, is a serious disease that attacks all types of roses. It can be quite severe under cool moist conditions and will defoliate rose plants within a day or two in the greenhouse.

Downy mildew is extremely infectious and will spread throughout your roses very quickly if left untreated. It defoliates a plant so rapidly that the plant losses its photosynthesizing ability and weakens the plant to a degree that it becomes totally unproductive.

BASF solution: Orvego® : Dose Rate 0.8 l/ha

If you expect more from a new fungicide, **Orvego®** is a new opportunity. **Orvego®** has an excellent regulatory profile, meeting not only your own needs but also those of consumers and the environment.

Overall, this ensures high yields and reliable crop quality - adding to your confidence and convenience.

Key Advantages of Orvego®

- New generation fungicide with dual mode of action.
- Highly effective against downy mildew and Phytophthora spp. in ornamentals and a wide range of crops.
- Excellent and long lasting preventive activity.
- Short re-entry period, safe for the workers.
- IPM compatible.
- Has excellent compatibility with tank mixes.

Key Benefits For You:

- **Orvego®** protects your crop effectively and keep them healthy longer to develop their full potential.
- Yieds high quality & residue free flowers.

BASF
We create chemistry