





Tutavir[®]SC

Biological insecticide for control of tomato leaf miner larvae (Tuta absoluta) on Tomato.

Andermatt -Leaders in Biocontrol and Biostimulant solutions.

Andermatt's vision for Africa is focused on feeding the continent sustainably, as well as strengthning African economies through the export of high quality, residue-free, healthy food.

As partners of choice, Andermatt delivers the best biological products, sourced both locally and globally along with expert technical guidance and support.



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Tutavir® SC contains *Phthorimaea operculella* granulovirus (PhopGV), RegNo. PCPB (CR) 2496. Andermatt Kenya Limited. Address:Olkaria Route, OFF Moi South Lake Road , Naivasha, Kenya. Reg. No. PVT-GYU2RYX.

Tutavir® against tuta absoluta

Bio-Insecticide for efficient control of tomato leaf miner

n response to the need for new biological pesticides for tuta absoluta, Andermatt has developed an effective natural solution to the highly destructive pest that has tormented tomato farmers in Kenya for more than a decade.

Tutavir[®] SC, a Bio-Insecticide for the efficient control of tomato leaf miner (Tuta absoluta), is a Baculovirus with proven success on tomatoes in Kenya, a case of triumph of biocontrol.

Kenya tomato production is a vital part of East and Central Africa's agricultural economy, producing an estimated 590,000 tonnes for both the fresh and processing markets.

Tutavir® SC contains a Phthorimaea operculella granulovirus for effective and selective control of the tomato leaf miner. Having won the Bernard Blum award in 2019, Tutavir® SC has been fully registered in Kenya under Reg No: PCPB (CR) 2496.

Adoption and Trust in Baculoviruses

Despite the low prevalence of organic farming in Kenya, Tutavir® SC is increasingly being used in tomato Integrated Pest Management (IPM) strategies. Andermatt Kenya plays a crucial role in educating farmers about baculoviruses, their effectiveness, and their correct application. Kenyan farmers have had very positive experiences with established Andermatt baculovirus products such as Cryptex®SC - PCPB (CR) 1969 for control of false codling moth and Littovir® SC - PCPB (CR) 2500 for control of the fall army worm. Their successful efficacy has made them open to trying Tutavir® SC





Why use baculovirus products by Andermatt?

1. Unique mode of action

- Pest population reduction over time
- Excellent resistance management too

2. No residues and non-toxic

- Complies with IPM and organic production
- Maintain benefits of beneficial insects and pollinators in your field
- Safe for producer, consumer and the environment

3. Unique formulation

- High compatibility in tankmix with other products
- Good storage stability when cooled
- Good rainfastness

4. Science based

- Reliable high-quality product with proven efficacy in the field
- Broadest product range

5. Andermatt Group network

- Global expertise of biological experts
- Knowledge transfer within network
- Local support through subsidiary companies and partners in over 60 countries



What are the benefits of using a baculovirus?

Baculoviruses are naturally occurring insect specific pathogens that can be used for controlling certain types of insect pests. Baculoviruses are usually very specific and often control only one species of insect.

Baculoviruses that are used as biological control agents in Kenya have to be registered as plant protection products by PCPB that puts them under same stringent evaluations to demonstrate their safety and efficacy as the conventional chemical insecticides. Baculoviruses with approval for use can be used in integrated pest management programmes and on organically produced crops. They can be used alongside other forms of biological control, including macro biologicals, microbial products, mating disruption, pheromones and also in programmes with other plant protection products. Baculoviruses have a unique mode of action, belonging to IRAC Group 31, meaning that using them as part of plant protection programme is an excellent way to help prevent resistance developing to plant protection products and active ingredients.

Mode of action of baculoviruses

Baculoviruses contain high concentrations of virus particles, also known as virions. Each virus particle is surrounded by a protein matrix called the occlusion body which helps protect the virus from environmental conditions, such as UV. The occlusion bodies containing the virus particles are sprayed onto the leaves where the virus particles must be ingested by the larvae of the target insect in order to be effective. Baculoviruses have no direct effects on adults, eggs or pupae.

Once ingested, the occlusion bodies that surround the virus particles dissolve due to the highly alkaline environment in the larva's midgut. The infective part of the virus called the occlusion derived virus (ODV) is responsible for the primary infection in the midgut cells. Replication takes place in the nuclei of the midgut cells. Following the primary infection, cell to cell transmission occurs by the budded virus (BV). This is how the virus spreads throughout the insect's body. Towards the end of the infection cycle, larval host cells produce new occlusion bodies to help protect the virus once it gets released back into the environment when the insect dies. Once released from the insect, these occlusion bodies can then be ingested by other larvae which will lead to another virus infection.

How do baculoviruses provide population control?

As well as being able to cause a direct effect on larvae when ingested, baculoviruses can also provide population control due to either the horizontal effect, the fitness effect or the vertical effect.

The horizonal effect takes place after an infected larva ingests a lethal dose of the virus and dies and the virus is released back into the field, where other larvae feed on the virus particles that have been released from the dying insect, leading to further insect mortality.

Baculoviruses can also cause a fitness effect. This is when an insect ingests a sublethal quantity. The insect may not have enough virus to be controlled after ingestion at the larval stage, but this can lead to a reduction in pupation or egg hatching of the next generation.

Finally, baculoviruses can also spread via the vertical effect. Again, this can happen when a sublethal quantity of virus is ingested by the larva. The infected larva may not die from the virus,but the virus can get passed onto the insect's offspring. The next generation can carry the virus infection which can cause an outbreak after activation due to stress factors such as heat and disease.

All three of these effects; horizonal, fitness and the vertical effect ultimately provide population control of codling moth.

Timing of baculoviruses

The two main factors determining the time taken for larvae to die after becoming infected by baculoviruses are the dosage of virus ingested and larval stage of the insect. A higher dose of the baculovirus will ensure that the larvae will ingest a higher viral load, ultimately leading to quicker death. The other factor that will influence mortality rate is the larval stage of the insect. Younger larvae will be controlled more quickly than older larvae as the smaller larvae are more susceptible to the baculovirus. Quicker mortality helps reduce the amount of damage caused by the pest.

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Baculoviruses contain high concentrations of virus particles, also known as virions.



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HortiNews is published six times a year by Associated Green Ventures and circulated among horticultural industry players, foreign missions and Kenya embassies abroad, extension officers in the Ministry of Agriculture, research officers and suppliers of agricultural inputs and services.

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Horticultural News

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Media has a way of shaping a writer into an expert', not just in matters story telling but also a repository of knowledge. This mobile library of sorts is curved out of interaction with the real experts

Catherine Riungu

Growing flowers is not like planting waru!

ne of my most memorable experiences as a journalist who has covered the flower industry for decades was sitting on live TV to discuss the challenges facing one of Kenya's top sectors- floriculture. Media has a way of shaping a writer into an expert, not just in matters story telling but also a repository of knowledge. This mobile library of sorts is curved out of interaction with the real experts- the technocrats, the investors, the managers, the policy makers, the lobbyists, development partners, the regulators and a cross-section of stakeholders in the value-chain. From the soil to the vase lie volumes of stories, many untold. Every chat gives a new story, a new perspective, always.

The youthful Citizen TV Kenya's Gold programme presenters asked many questions but I found one intriguing. Are farmers aware of the standards required by the international markets? My first response which never left my head was – do you think growing flowers is like planting waru (potatoes) or maize? I quickly remembered the two are our staple food crops and equally important in the country's agriculture economy and the technocrats would not take the joke lightly, especially coming from me, who should know better. We are struggling with decreasing productivity due to soil depletion. Hamish Ker, Andermatt Chief Executive Officer with who I have worked with for many years wouldn't laugh with me, not after the much knowledge he has put in my head especially on soil health and how taking care of the life beneath our feet will determine food security in future. Andermatt has introduced biological plant health products, the latest being Tutavir, a biological enemy against the problematic Tuta Absoluta, a pest giving tomato farmers sleepless nights. As featured in this edition, latest research on the pest points to the need for new biological products to be used within an IPM framework, a position supported by Corteva Agroscience that has opened a biologicals line. The technocrats in that office, under the leadership of Joseph Anampiu would have run me out of print for the joke that never left my head.

Elgon Kenya Managing Director Bimal Kantaria, who I have had extensive in-depth discussions especially on policy and innovations would have wondered whether I am losing it, having covered almost every project his company, at personal level and his family has initiated to support food security. From the National Farmers Awards, Agriculture Sector Network to the Kantaria Agriculture Technology & Innovation Centre domiciled at the University of Nairobi College of Agriculture and Veterinary Sciences in Upper Kabete, it is clear the joke wouldn't have been funny!

Chrysal Africa General Manager Neils van Doorn, having added a new flower food on the Chrysal menu would probably have been the only one agreeing with me no flower farmer goes into this business without understanding the dos and donts of getting a top quality petal in the vase.

Kenya Flower Council Chief Executive Officer Clement Tulezi, who has found time despite his tight programme to sit with the Hortinews team to update on the menace of the false codling moth, a story we have covered in every edition of the magazine this year would have laughed at the joke, that I am sure.

I hope Chris Gasperi, Managing Director, Freshcrop and Wachira Kaguongo, CEO, National Potato Council don't read this, but if they do, I will send Fresh Produce Consortium of Kenya CEO Okisegere Ojepat to explain the joke.

Lastly, someone tell Muthomi Ernest he must include avocado in the menu of the Avocado Industry Exellence Awards or else...

Best wishes for 2025.

catherine@hortinews.co.ke / www.hortinews.co.ke

Uphold[™] 360 SC

Jemvelva[™]active

INSECTICIDE

Active Ingredients:

Jemvelva (Spinetoram)

Application Rate: 0.4 L/ha

Knapsack Rate: 10ml per 20L Knapsack

- With both Contact and Translaminar activity
- Kills through contact and Stomach ingestion
- Effective on eggs of caterpillars



EGG

Ovicidal activity: Eggs laid on sprayed surfaces will not hatch. Larvae often die immediately after hatching.





LARVA

Neonates - last Larvae stage (L5/6) Kills all larval instars, Apply

Uphold[™]360 SC

Tracer* 480 SC

Delegate" 250 WG



ADULT

Reduces Moth fertility & Fecundity Kills if in direct contact during application



Uphold 360SC Application & Efficiency across Caterpillar life cycle



PUPA



Kenya Flower Council CEO on FCM management progress



Clement Tulezi, CEO of the Kenya Flower Council (KFC)

By CHARLES MURIITHI

n a recent address, Clement Tulezi, CEO of the Kenya Flower Council (KFC), shed light on the major challenges currently facing Kenya's flower industry, focusing on the impact of the False Codling Moth (FCM).

Tulezi began by emphasizing that FCM, a pest affecting flower farms, was not a significant concern for the sector until 2018. It was then that the European Union (EU) officially classified FCM as a major issue for flowers, particularly roses, exported from Kenya. The decision triggered an increase in scrutiny over the presence of the pest in Kenyan flower exports. What began as a 5% inspection rate in 2018 quickly escalated to 10% in 2019, and has since grown to 25%. According to Tulezi, this rise in inspections suggests that the likelihood of FCM being present in exported flowers has become a serious concern.

In response to the growing issue, KFC has partnered with the Kenya Plant Health Inspectorate Service (KEPHIS) to address the threat using the "system approach"—a method of pest management. Tulezi revealed that KFC and KEPHIS are currently working together to compile a comprehensive dossier on the system approach, which they plan to present to the EU for approval. "We are committed to showing that we are taking this matter seriously," he said, stressing

the importance of collaboration and data-backed solutions to address the pest's impact.

Tulezi also highlighted the collective responsibility of all stakeholders within the flower industry's value chain. "Everyone has a role to play," he said, underscoring the importance of combined efforts to tackle challenges and ensure the sector's continued success.

Another positive development in the sector, Tulezi noted, is the introduction of the Pinnacle Awards. Launched recently, these awards recognize excellence and sustainability across various stakeholders in the flower industry. Tulezi shared that the awards are growing in both scale and prestige, with more farms being acknowledged for their efforts in sustainability and other key areas.

On the international stage, Tulezi spoke with pride about Kenya's increasing visibility at the International Floriculture Trade Fair (IFTF), an annual event that brings together the global flower industry. Kenya, which was once relegated to Hall C of the event, has now moved to Hall D—right at the entrance—ensuring that the country is in the spotlight during the fair. "This move places Kenya in the limelight, showcasing the country's leadership and innovation in the global flower industry," Tulezi remarked.

As the Kenyan flower sector navigates both challenges and milestones, Tulezi's leadership continues to drive efforts towards growth, sustainability, and international recognition.





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Controlling False Codling Moth (FCM) with Delegate 250 Wg

Biology of the FCM

he False Codling Moth,
Thaumatotibia leucotreta,
is a highly polyphagous
pest, feeding on more than
50 plant species, mostly
crops of economic importance. The
pest has been spotted on export crops
such as Capsicum spp, Citrus spp and
Rosa spp. In the recent past the pest
has become an increasingly important pest, necessitating more attention from a pest management point
of view.

False Codling Moth (FCM) is a nocturnal pest with 1.25cm-2cm wings and colour variation. The eggs of FCM are laid singly or in small groups on the surface of the flower buds and the tender parts of the plants. Eggs are difficult to detect because they are flat and take same colour with the substrate. The pest has a 30-174 days lifecycle and can produce 2 to 10 generations in a year laying up to 800 eggs depending on multiple factors including temperature, food availability and quality, and humidity. Eggs hatch into larvae in 20-22 days. At maturity, the larvae exit from the fruit or flower buds and drop on the ground.

The stage likely to be detected during inspection is the larva, while in the field adult stages can be detected on traps. Larval stages are internal feeder in flower buds in the case of Roses. The larval stages are visually detected by use of a hand lens, usually done by looking out for symptomatic buds, which when opened small holes are observed in the bud where the larva has penetrated and exited the bud. Frass can also be observed protruding from the hole, larvae may migrate to the centre of the bud. The pupae then undergoes a metamorphosis to winged adults and the cycle restarts.



Pest management,

Cultural method:

- Remove all the unwanted affected plant parts.
- Keep the beds cleans, free of plant debris. This would limit chances of Pupa stages hiding.
- Remove crown galls.

Biological method:

- Attract and Kill by use of pheromones
- Mating disruptors if available.

Chemical method:

Solution from Corteva Agriscience Delegate 250 WG

DELEGATE 250 WG is the first registered FCM product on flowers in the market. The new kid on the block has a long heritage focused on offering complete solutions to the growers. The aim is to enrich the lives of producers and consumers, ensuring progress for generations to come. DELEGATE 250 WG is an insecticide belonging to the Spinosyns



Delegate™ 250 WG Jemvelva active

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Quick knockdown activity on:

Thrips, False Codling Moth (FCM) & other Caterpillars in Ornamentals.

Active Ingredient: Jemvelva (Spinetoram) 250g/Kg

Application Rate: 150g/Ha

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class and to Group 5 mode of action classification. DELEGATE 250 WG has improved potency at target site, improved residual control, improved translaminar activity and penetration through the plant cuticle, increased activity at the target site and is more stable in sunlight. It provides broad spectrum activity on key pests from Lepidoptera, Thysanoptera, Diptera and Coleoptera and other pests such as Pear Psylla and Asian Citrus Psyllid. It is also effective on white-flies nymphs and has ovi-larvicidal activity when sprayed on eggs.

Due to its improved rain-fastness and photo-stability property with no breakdown in sunlight, the product has better weather resilience. It delivers exceptional, fast-acting activity within minutes to hours with a fast knockdown on contact toxicity. DELEGATE 250 WG is a unique product that is highly active at the target site in the pest's nervous system causing paralysis within minutes its effective through ingestion and contact making it difficult for the target pest to escape the activity of the product.

DELEGATE 250 WG with low impact on beneficial arthropods making it compatible with IPM programs. Its short environmental persistence and greater ingestion versus contact activity minimises impact on natural enemies. It has minimal impact on pollinators once the spray deposit has dried up. It is practically non-toxic to honeybees when spray has dried up. DELEGATE 250 WG is safe with minimal risk (if any) to predatory lacewings, ladybird beetles, predatory mites, and parasitic wasps.

Moreover, it is a valuable tool in resistance management, it has shown no cross resistance within existing chemistries of the IRAC groups."

With no phytotoxicity, no varietal sensitivity observed making it a suitable partner to be a mixed with most adjuvants when necessary, in addition to being compatible with commonly used Fungicides, Insecticides and Foliar Fertilizers.



The product won Presidential Green Chemistry awards in the USA, as well as AGROW award as Best New Crop Protection Product. It is also classified by EPA as a reduced risk pesticide.

If properly utilised, DELEGATE 250 WG has the potential of further cementing Kenya's position as the leading flower exporter to the European markets.

To reduce the potential for resistance development we recommend alternation of DELEGATE 250WG with different Mode of Action actives recommended against control of FCM.



Kenya Flower Council member growers celebrate sustainability at inaugural floriculture Pinnacle Awards

By CHARLES MURIITHI

he Kenya Flower Council (KFC), in collaboration with Absa Bank Kenya and Royal FloraHolland hosted the first-ever Floriculture Pinnacle Awards on September 12, 2024, at Lake Naivasha Resort. This event brought together top industry leaders to celebrate outstanding achievements in sustainability and innovation within Kenya's floriculture sector.

The awards, designed to promote best practices that minimize environmental impact, were divided into three main categories; Environmental Impact, Social Impact, and Good Agricultural Practices, with a focus on inclusivity across farm sizes. Fourteen awards were presented, honoring exceptional contributions to sustainability and social responsibility.

Carzan KS and Rainforest Farmland were recognized with the Most Efficient Constructed Wetlands award for their innovative wastewater treatment solutions, while Red Lands Roses won the Best Sustainable Packaging award for their use of recyclable, biodegradable packaging.

The awards, designed to promote best practices that minimize environmental impact, were divided into three main categories; Environmental Impact, Social Impact, and Good Agricultural Practices,

Sun Floritech and Wildfire Flowers received the Best Soil Health Management award for their practices that enhance soil fertility and biodiversity. In the employee welfare category, Timaflor Limited and Florensis Kenya Ltd were lauded for their commitment to workforce wellbeing, receiving the Best Employee Welfare Programs award.

The Best Community Partnership Program award went to Mount Elgon Orchards Ltd and Kisima Farm Limited for their initiatives in supporting local communities, while Sosiani and Kisima Farm Limited also took home the Best Organic Waste Management award for their innovative waste recycling practices.

The event concluded with Flamingo Horticulture (Kingfisher Farm), Kariki Juja Farm, Florencia Blooms Ltd being honored for achieving the Least Number of Non-Conformities during the Audit Process, demonstrating high compliance with KFC Silver FOSS standard.

The Floriculture Pinnacle Awards highlight the sector's commitment to sustainability, positioning Kenya's floriculture industry as a global leader in sustainable practices and innovation



Kisima Flowers General Manager Craig Oulton (left), receiving Gold Standard Award for their community projects and their outstanding efforts in waste material management.

Kisima fetches Gold at the Pinnacle Awards 2024

By CHARLES MURIITHI

isima Flowers, led by General Manager Craig Oulton, has recently earned recognition at the Pinnacle Awards, winning the Gold Standard Award for their community projects and their outstanding efforts in waste material management. Oulton highlights that Kisima is a "home of love," where every employee is treated with respect and appreciation. The farm fosters a supportive, inclusive environment where no one feels out of place, contributing to a positive workplace culture.

Sustainability is at the core of Kisima's operations. Oulton explains that the farm places a strong emphasis on water conservation by building lagoons fed by springs from the neighboring water catchment areas. These lagoons serve as both a life-saving resource and a roosting ground for birds, while the water is naturally diverted downstream to benefit surrounding communities. This effort embodies Kisima's approach to sustainability, balancing environmental responsibility, community support, and business growth.

The farm also takes pride in its environmental initiatives, including the planting of tens of thousands of trees, with each tree assigned to a staff member, including board members, to cultivate a sense of pride and responsibility. Oulton further explains that sustainable flower cultivation involves careful consideration of local climate conditions, noting that some greenhouses at Kisima are taller than usual to aid in pest management.

Additionally, Kisima takes an innovative approach to waste management by collecting rejected roses and mixing them with microorganisms to create a powerful natural fertilizer known as the warm Juice. The farm ensures that its soil is properly nourished, emphasizing the importance of a healthy root structure for the best flower production. Oulton also mentions the use of Integrated Pest Management (IPM) techniques to control pests in greenhouses, helping the farm maintain a sustainable and productive operation.

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The farm also takes pride in its environmental initiatives, including the planting of tens of thousands of trees, with each tree assigned to a staff member, including board members, to cultivate a sense of pride and responsibility







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Chrysal Services

New:

- Premium Fairtrade Rose Dip
- Eco Rose Dip
- Basic Rose Dip



Chrysal Rose Dip

New recipes, the same promise

The Chrysal Rose Dip line-up has changed with the addition of new recipes. Next to the Original Rose Dip, we are officially including our <u>Premium Fairtrade Rose Dip</u> mixes and are welcoming the new <u>Chrysal Eco Rose Dip</u> and <u>Chrysal Basic Rose Dip</u>.

The new mixes contain more efficient recipes but with the same promise, to keep your flowers vibrant, fresh and free from Botrytis* during any mode of transport. By carefully examining varieties & weather conditions, we can recommend the optimal recipe for your needs.

For example, considering sea freight to the Middle East, based on our evaluation we can advise the Eco Rose Dip option to ensure maximum freshness on arrival at the best possible price point.

Get in touch to discuss your needs!



*95% effectiveness. Test: two bunches with on the left side of each bunch untreated roses vs treated roses on the right side



Understanding and managing FCM



By PAULINE RONO

ative to sub-Saharan Africa, the False Codling Moth (Thaumatotibia leucotreta) is a major agricultural pest. While detected in Europe and the United States, it has failed to become established outside its native range.

With a voracious appetite, the Moth's larvae devour a wide variety of crops. These include commercially important plants like citrus, red pepper, bullet chilli, avocado, pomegranate, guava, cotton, and maize. Due to the extensive damage, it causes, the moth poses a significant threat to Kenyan exports. This risk led the European Union (EU) to classify the False Codling Moth as a quarantine pest in 2017. Consequently, European countries now require inspections for 10% of roses imported from Kenya to safeguard against potential infestations.

Thriving in warm climates, this moth struggles when temperatures dip below 10°C. At this point, development slows, and survival rates plummet. Even colder temperatures below 1°C prove fatal for all life stages. Interestingly, infestations can fluctuate in severity from year to year. However,

"

Thriving in warm climates, this moth struggles when temperatures dip below 10°C. At this point, development slows, and survival rates plummet

"

ideal conditions – warm and humid environments – can lead to a remarkable five generations per vear.

FCM goes through four distinct stages: egg, larva, pupa, and adult. Under the cloak of night (between 5:00 pm and 11:00 pm), female moths lay their eggs on the surface of fruits. These eggs hatch in 2-22 days, depending on the temperature. The hatched larvae, tiny and hungry, burrow into the fruit flesh, feeding and growing for 12-67 days based on weather conditions. The initial entry point may show some discolouration. After this feeding frenzy, the larva prepares for its next stage by spinning a cocoon in the soil. This cocoon, initially cream-coloured, eventually houses the pupal stage. Finally, a small, brownish-winged adult moth emerges, ready to continue the cycle.

Management

The False Codling Moth poses a serious threat to Kenya's economy. This is because it targets a wide range of valuable crops, including those that are crucial for our export earnings and Gross Domestic Product (GDP). To combat this destructive pest, a multi-pronged approach is necessary. This includes monitoring FCM populations, implementing cultural practices that disrupt their life cycle, utilizing biological controls like natural predators, and applying chemicals judiciously only when necessary.

1. Monitoring & Prevention

- Regular Inspections: Keep a watchful eye on your crops and fallen fruit. Look for signs of FCM damage or the presence of the moths themselves. Destroy any infested or damaged fruit promptly to prevent further spread.
- Pheromone Traps: These clever traps lure male FCM with attractive scents (pheromones). By monitoring the number of trapped moths, you can track population levels and detect infestations early, allowing you to take timely action.

2. Cultural Practices

- Intercropping & Crop rotation: Intercropping can be utilized as a push and pull measure to counter FCM. Planting different crops in the same location each season disrupts the FCM's ability to establish itself and find suitable hosts.
- Attractant and Trap Crops (push and pull Technology): Strategically plant fewer valuable crops that act as decoys, attracting

➡ 22



Cryptex Reg. No. PCPB(CR)1969.

Cutting edge granulovirus technology for the suppression of False Codling Moth (FCM) on ornamental and horticultural crops.

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NATIONAL FARMERS AWARDS 2024









- egg-laying female moths away from your main crop. Desmodium and Nappier grass are particularly efficient for managing pest populations using this method.
- Pruning: By pruning trees to improve air circulation and reduce humidity within the canopy, you create a less favourable environment for the moths to thrive.

3. Natural enemies (Biological control)

- Egg Parasitoids: A natural hero in citrus orchards is the FCM egg parasitoid, Trichogramma cryptophlebiae. These tiny wasps lay their eggs inside FCM eggs, effectively stopping the next generation of moths before they hatch. Commercially available releases of Trichogramma can significantly boost their numbers and combat infestations. Under ideal conditions, they can parasitize up to 80% of FCM eggs in a citrus orchard.
- Predators: Encourage the presence of natural predators like ants and birds in your orchard. These creatures can help keep FCM populations in check by feeding on the eggs and larvae.
- Insecticides: While biological controls are ideal, there may be situations where additional measures are necessary. In such cases, consider using biological insecticides approved for FCM control. Remember, consult with a qualified professional to choose the most effective and environmentally responsible option for your specific needs.

Examples of biopesticides include:

- BACIGUARD 16 WDG (Water Dispersible Granules), Reg. No. PCPB(CR)1238, a biological insecticide for controlling FCM in avocados.
- HALT NEO 5% WP (Wettable Powder), Reg. No. PCPB(CR)1959, is an insecticide for controlling FCM in sweet peppers.
- CRYTRACK, Reg. No. PCPB(CR)1860, is rubber impregnated with synthetic female Cryptophlebia leucotreta pheromone. It is used for monitoring and mass trapping of FCM in chilli peppers (for use with Delta traps and sticky paper).
- FLOWER DUST, Reg. No. PCPB(CR)2370, is an insecticide for controlling pupal and adult stages of thrips and FCM in roses.

4. Chemical Control

While a variety of chemicals are registered for use against FCM, they should be a last resort due to several drawbacks such as harm to beneficial insects and resistance development.

Integrated Pest Management (IPM) is Key in minimizing these risks and ensuring long-term control, remember to follow the IPM principles. IPM focuses on combining various control methods, prioritizing non-chemical approaches whenever possible.



If, after implementing other control methods, chemical intervention becomes necessary, remember these crucial points for effective control:

- Consult a qualified professional: Seek guidance from a pest control expert to choose the most effective and environmentally responsible insecticide for your specific situation.
- Timely application: The timing of insecticide application is critical for successful control. Ensure proper timing based on the expert's recommendations and the product label instructions.

Examples of chemical pesticides include:

- AFIFEN 10.8% EC (Emulsifiable Concentrate), Reg. No. PCPB(CR)1410, an insect growth regulator used for controlling FCM in roses.
- LOCUS 150 WG (Wettable Granule), Reg. No. PCPB(CR)2112, is an insecticide for controlling FCM in Capsicum.
- AVOKING 200 SC (Suspension Concentrate), Reg. No. PCPB(CR)1148-P(i), is an insecticide for controlling FCM in avocados.
- OCCASION STAR 200 SC, Reg. No. PCPB(CR)1553, is an insecticide for controlling FCM in tomatoes, watermelons, and chilli peppers.

For more products, detailed usage instructions, and information on where to find them, please visit the PCPB website at https://www.pcpb.go.ke/crops/.

Once a minor pest, the False Codling Moth has become a significant threat to Kenyan agriculture. Its impact extends beyond damaging crops and reducing yields – it also hinders the export of valuable produce to key markets due to stringent quality control measures.

To safeguard the integrity of Kenyan plant exports, the Kenya Plant Health Inspectorate Service (KEPHIS) implemented stricter production standards. However, these standards, like requiring protected environments for certain crops, can be financially prohibitive for many small-scale farmers.

The answer is found in an integrated strategy. Cultural practices like field sanitation and fruit bagging offer promise. Biological control methods utilizing natural enemies are also being explored. Yet, the challenge of managing FCM within the constraints of reduced pesticide use on exported crops remains.

Further research and development are crucial to identify cost-effective solutions for smallholder farmers. Collaboration between researchers, policymakers, and farmers is essential to ensure Kenya's agricultural sector remains resilient in the face of evolving pest threats.

NATIONAL POTATO COUNCIL OF KENYA









ASNET AGRICULTURE SUMMIT 2024









Marginpar's constructed wetland: a sustainable solution for wastewater and biodiversity

By PRISCA MWANGI

t Marginpar Carzan Flowers (KS) Farm, sustainability is not a trend but a core operational value that drives every decision. One of the farm's most notable and innovative projects is its constructed wetland, a forward-thinking solution to wastewater management that has become an award-winning example of environmental responsibility.

The constructed wetland mimics the natural processes of wetlands, which historically have been recognized by ancient civilizations like the Egyptians and Sumerians for their importance in agriculture and ecological balance. This engineered system combines vertical flow beds, horizontal flow reed beds, and surface flow cells like ponds. Wastewater is filtered naturally through these systems, relying on gravity, microorganisms, and aquatic plants known as macrophytes to absorb harmful pollutants and nutrients.

Steve Muchangi, the ESG Domain Captain at Marginpar, describes how the wetland's design eliminates the need for energy-intensive mechanical systems. By utilizing gravity-driven processes, the system treats up to 60 days' worth of effluent without the use of pumps or other power-driven machinery. It is a self-sustaining system that not only purifies wastewater but also enhances local environmental health and biodiversity by providing a habitat for wildlife, including birds, aquatic life, and frogs.

The constructed wetland has delivered remarkable results. Studies have shown that wetlands can reduce pollutants by up to 80%, significantly improving the quality of water that returns to the ecosystem. For Marginpar, this means that treated water is cleaner and safer for local water bodies, benefitting surrounding communities and the environment alike.

Beyond water purification, the wetland has become a sanctuary for diverse species, supporting over 40% of the world's species of plants and animals. This boost in biodiversity is a testament to the wetland's health and highlights the crucial role such systems play in conservation. Additionally, the aquatic plants contribute to carbon sequestration, helping Marginpar reduce its carbon footprint and further enhance the farm's sustainability.



The constructed wetland mimics the natural processes of wetlands

The project also has a strong community focus. Local stakeholders have been trained in wastewater management, equipping them with valuable skills and fostering a shared sense of environmental responsibility. This knowledge sharing is extending beyond Marginpar, as the farm is encouraging other flower growers in the industry to adopt similar ecofriendly practices.

Creating the constructed wetland was not without its challenges. Limited land availability meant sacrificing a productive flower block to make space for the system, and navigating lengthy approval processes from the National Environment Management Authority (NEMA) and Water Resource Authority (WRA) added to the complexities. However, Marginpar's unwavering commitment to sustainability overcame these hurdles, and continuous training ensures that the system remains efficient and effective over time.

In 2024, Marginpar was honored with the "Most Efficient Constructed Wetlands" KFC Pinnacle Award, recognizing their leadership in sustainability. This accolade is just the beginning, as the farm continues to share its expertise, setting an example for other industries to follow. Wetland restoration, including the use of constructed wetlands, is key to tackling global environmental challenges like climate change, water security, and biodiversity conservation.

For Marginpar, the constructed wetland is more than just a wastewater treatment solution—it is proof that sustainability can be integrated into business operations in a way that benefits the environment, the community, and future generations.

DIRECTORY

ASSOCIATIONS

Agriculture Sector Network (ASNET Agrochemicals Association of Kenya (AAK) Avocado Exporters Association of Kenya (AEAK) Avocado Society of Kenya (ASOK) Fresh Produce Consortium (FPC) Fresh Food Exporters Association of Kenya (FPEAK) Kenya Flower Council (KFC) Kenya National Farmers' Federation (KENFAP) National Potato Council of Kenya (NPCK) Ethiopian Horticulture Producer Exporters Association (EHPEA)

Tanzania Horticultural Association (TAHA)

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CONTACT PERSON

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BREEDERS / PROPAGATERS

ORGANISATION

Dummen Orange Schreurs East Africa Ltd. Wac International Florensis Hamer **Interplant Roses United Selections** Solo Plant Kenya Ltd

PRODUCT

Flower Breeder Flower Breeder Flower Breeder Flower Breeding Flower Breeding Rose Breeder Breeding

CONTACT PERSON

Mr.Steve Outram Mr.Haiko Backer Mr.Richard Mcgonnell Mr. Eddy Verbeek Mr.Gavin Mouritzen Mr.JellePosthumus Mr. Tomer Weiss

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LAKE NAIVASHA: Altitude 6178ftasha: Altitude 6178ft

ORGANISATION

Florema(K) Ltd Carzan Flowers Loldia Farm Longonot Horticulture Blue Sky Indu Farm Leekem Holding ltd. Rainforest Savannah Fowers Star flowers Subati Wildfire Flowers Aquila Development Company Cut flowers **Beauty Line** Hamwe Ltd. Sun Buds Oserian Development Company Oserian Flowers Limited Colour Vision Roses Ltd Rift Valley Roses Van Den Berg Roses Aquilla **Bigot Flowers** Bila Shaka

De Ruiters

Galaxy

Groove

Finlay's Kingfisher

Harvest Flowers

Karuturi Flowers

PRODUCT

Begonia

Carnations Cut flowers Gypsophila Hypericum Hypericum Rose & Fillers Carnations & Fillers Mr. Hamish Ker Rose Breeders Roses Roses Roses Roses Roses Roses Roses

Roses

Roses

Roses

Roses

CONTACT PERSON Mr. Perter Maina

Mrs. Carol Manji Mr. Gary Mr. Shado rai Mr. Mike Mr. Wesley Koech Mrs. Margaret Muthoni Mr. Fabian Philippart Mr. Ignaitus Lukulu Mr.Dinkar Mr. Naren Patel Mr.Patrick Mbugua Mr.Abhay Marathe Mr.Peter Gathiaka Mr.Adrew Khaemba Mr. Paul Kamau Mary Kinyua Mr.Peter Vandemeer Mr.Peterson Muchiri Loek Van Adrichem Mr.Yogesh Mr.Jagtap K Ms. Judith Zuubier Fred Okinda Mr. Charles Njuki Mr. Kiran Mr.John Ngoni Mr Phanuel Ochunga Mr.Sylvester Saruni

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Kongoni Farm	Roses	Dinkar	0728 608785	dinkar@vegpro-group.com
Larmona	Roses	Fiona	254 722 564 089	fiona@lamornaflowers.com
Maridadi Flowers Ltd	Roses	Jack Kneppers	07-33333289	jack@maridadiflowers.com
Mbegu Farm	Roses	Mr. <mark>David Mo</mark> usley	+254722 833 122	mbegufarm@iconnect.co.ke
Nini Farm	Roses	Billy	254 723 786 003	billyc@niniltd.com
Shalimar Flowers (K) Ltd	Roses	Export Manager	0722 811832	info@eaga.co.ke
Stockman Rozen	Roses	Mrs. Sarah Tham	0720 603990	info@srk.co.ke
Twiga Roses	Roses	Mr.Pius Kimani	0721 747623	pius.kimani@gmail.com
Panda Flowers	Roses	Charkara	+254786 143515	chakra@pandaflowers.co.ke
Finlay's Flamingo	Roses and Fillers	Mr.Peter Mwangi	+254 722204505	peter.mwangi@flamingo.net
Colour Crops	Summer Flowers	\ \V		
Esmeralda Breeding	Summer Flowers	Mr.Loui Hooyman	31-297-385444	info@esmeraldabreeding.com
Multgrow Investments	Summer Flowers	Mr.Peter Murimi Mbugua	+254-724-977259	peter_murimi@yahoo.com
Kentalya	Cut Flowers	Mrs.Lynette	+254733 549773	lynette@kentalya.com

NAIROBI: Altitude 5515 ft : Altitude 5515ft

ORGANISATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Black Tulip Group	Cut Flowers	M <mark>r.Mohan</mark> Choudhery	254-722-825429	info@blacktulipflowers.ae
Caly Flora Ltd.	Cut Flowers	Mrs.Catherine Gichungu	254 725456930	info@calyflora.co.ke
Everest Enterprises Ltd.	Cut Flowers	Mr.John Karuga	254-722-720876	jkaruga@everest.co.ke
Flora Delight	Cut Flowers	Mr.Marco Van Sandjik	254-722-384188	info@floradelightkenya.com
Particle Blooms Co. Ltd.	Cut Flowers	Mr.Caleb Amunga	254-704-040101	info@particleblooms.com
Phinna Flowers Ltd.	Cut Flowers	Mrs.Ruth Thuo	+254-723-582476	phinnaflowers2014@gmail.com
Redhill Flowers	Cut Flowers	Mr.Isaac Bwire Ombunda	+254-702-34404	redhillflowers@yahoo.com
Rose Bunk International	Cut Flowers	Mr.Nahashon Macharia	+254-773-754140	nahashon@rosebunkintl.com
Sian Agriflora Ltd	Cut Flowers	Mr.Jos Van Der Venme	+254-725-961961	info@sianroses.co.ke
The Flower Hub	Cut Flowers	Mr.Stephen Swainston	+254-722-509970	info@theflowerhub.com
Tripple F. Agencies	Cut Flowers	Mr.Amos N. Wakiria	+254-735-405982	wakiria@fagencies.co.ke
Van Kleef Kenya	Cut Flowers	Mrs.Judith Zuurbier	+254-722-364943	judith@vankleef.nl
Winchester Farm	Cut Flower	•	+ 254-0722-203630	info@mzurrieflowers.co.ke
Zaina Blooms	Cut Flowers	Mr.Michire Mugo	+254-736-080070	zainablooms@gmail.com
Credible Blooms	Roses	Mr.Francis	020 2102019	info@credibleblooms.co.ke
Flamingo Flora	Roses	Mr.Sam	+254-721993857	s.ivor@flamingoflora.co.ke
Karen Roses	Roses	Mr <mark>s.J</mark> uliana Rono	+254-722-717187	sales@karenroses.com
Kreative Roses Ltd.	Roses	Mr.Bas Smit	+254 733501640	info@kreative-roses.com
Lakshmi Group Ltd.	Roses	Mr. Serghei	+254 714551969	serghei.lakshmigroup@gmail.com
Magana Flowers	Roses	Mrs Ann Gitari	+254-20-2017651	marketing@maganaflowers.com
Magnate Flowers	Roses	Mrs.Gladys Muthoka	+254-722-777051	magnateflowers@gmail.com
Mzurrie Flowers	Roses	Mr <mark>s.I</mark> rene Njeru	+254-722-203630	irene@winchester.co.ke
Shallimar Flowers Ltd	Roses	Mrs.Elizabeth Wahogo	+254-738-391832	elizabethw@eaga.co.ke

MT.KENYA: Altitude 6358 - 7057ft6358 - 7057ft

ORGANISATION	LOCATION	PRODUCT	CONTACT PE	RSON PHONE	EMAIL
Mount Kenya Alstroemeria	Nanyuki	Cut Flowers	Mr.Edwin Van Der Veen	+254-718-240581	info@mountkenyaalstroemerialtd.com
Bondet	Nanyuki	Erygium	Richard Fernandes		
Kariki Limited	Nanyuki	Hypericum		+254722 50 99 19	info@kariki.biz
Live Wire Ltd	Nanyuki	Hypericum & Lilies	Mr.Esau Onyango	+254728 606872	info@livewire.co.ke
Finlays Sirimon	Timau	Lilies	Ms.Purity Thigira	+254733606411	purity.thigira@finlays.net
Batian Fowers	Timau	Roses	Mr.G.Muriungi/Dirk Looj	+254720 102237	dirk@batianflowers.com
Bloomingdale Roses	Timau	Roses	Mr.Sunil Chaudhari	+254732 373322	sunil@bloomingdaleroses.com
Bogmack Farm	Timau	Roses	Mr.Anderson	+254722 350020	kathendusn@yahoo.com
Equinox	Timau	Roses	Mr. Rod Jones	+254 722 204271	rod.jones@equinoxflowers.com
Fides Kenya Ltd	Embu	Roses	Mr.Francis Mwangi	+254-06830776	info@fideskenya.com
Lobelia Farm	Timau	Roses	Mr,.Peter Viljoen	+254-06241060	
Lolomarik	Nanyuki	Roses	Mr. Topper Murry	+254715 727991	topper@lolomarik.com
Protea Farm	Timau	Roses	Mr.Philip		info@lobelia.co.ke
Sunland Roses	Timau	Roses	Mr.Peter Viljoen	+254-7020 95696	sales@sunlandroses.com
Tambuzi	Nanyuki	Roses		+254 -722 716158	tambuzi.sales@tambuzi.co.ke

Timaflor Ltd. Timau Roses info@timaflor.nl
Timau Flair Timau Roses Mr.Philip Ayiecha +254-723383736

Timau Flair Timau Roses Mr.Philip Ayiecha +254-723383736

Uhuru Flowers Timau Roses Mr. Ivan Freeman +254722863252 ivan@uhuruflowers.co.ke
Vegpro-K Ltd Timau Roses Mr.Vivek Sharma vivek@vegpro_group.com

Kisima Timau Roses & Lilies Mr.Martin Dyer +254- 0722509830 info@kisima.co.ke

NAKURU: Altitude 6070ft : Altitude 6070ft

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE EMAIL	
Bliss Flora Ltd.	Nakuru	Cut Flowers.	Mr.Shivaji Wagh	+254-720-895911	shivaniket@yahoo.com
Carzan	Rongai.	Cut Flowers.	Francis	+254-0720 890920	info@carzankenya.com
Kudenga Flowers	Mau Summit	Cut Flowers.	Mr.Joseph Juma	+254-0725 643942	kudenga.fm@kariki.biz
Molo Greens Ltd	Molo North	Cut Flowers.	Mr.Justus Metho	+254-722-755396	info@mologreens.com
Molo River Roses	Muserechi	Cut Flowers.	Mr.Alice Mureithi	+254-0724 256592	andrewwambua@yahoo.com
Roseto Limited	Rongai	Cut Flowers.	Mr.Yogheesh		farm.florenza@megaspingroup.com
Kariki Limited	Molo	Hypericum	700	+254 722 50 99 19	inf <mark>o@kariki</mark> .biz
Amor	Nakuru	Roses	Mr.Ketan Jerath	+254-738-119774	fl <mark>owers@xf</mark> lora.net
Baraka Farm	Nakuru	Roses	Lucy	+254-0720 554106	lucy@barakaroses.com
Buds&Blooms-Bliss Flora	Nakuru	Roses	Mr.Shivaji	+254-0720 895911	shivaniket@yahoo.com
Elbur Flora	Elburgon	Roses	Peter Kairu	+254-51343473	eflora@africaonline.co.ke
Fontana Ayana	Nakuru	Roses	Mr.Gideon Maina	+254-0721178974	gideon@fontana.co.ke
Fontana-Akina	Nakuru	Roses	Mr.Girish Appana	+254 722728441	girish@fontana.co.ke
Kimman Roses Ltd.	Elburgon	Roses	Mr.Daniel Moge Maina	+254-721-734104	kimmanexp@gmail.com
Mau Flora	Nakuru	Roses	Mahesh	+254-0787 765684	mahesh@mauflora.co.ke
Milmet	Nakuru	Roses	Pravin		pravinyadav.29@gmail.com
Omang-Africa	Nakuru	Roses	Mr.Inder Nain	+254 733724029	flowers@xflora.net
Porini	Nakuru	Roses	Mr.Pitambar Ghahre	+254-0726 774955	porini@isinyaroses.com
Pp Flora	Nakuru	Roses	Prakash	+254-0718 045200	info@fantasy-flora.com
Preesman Kenya	Nakuru	Roses	Michael Kikwai	+254-0720574011	kikwai1980@yahoo.com
Ravine Roses	Nakuru	Roses	Mr.Peter Kamuren	+254-0722 205657	pkamuren@karenroses.com
Redwings	Kabarak	Roses	Mr.Sayer Simon	+254-0722 578684	sayer@redwingltd.co.ke
Subati Flowers	Subukia	Roses	Mrs. Jennifer Sassi	+254 742 144493	jennifer@subatigroup.com
Vankleef	Nakuru	Roses	Judith Zuurbier	+254-0722 364943	judith@vankleef.nl
Xpression Flora Ltd.	Njoro	Roses	Mr.Mangesh	+254-0720 519397	info@xflora.net
Sian Agriflora(Sian Roses	Nakuru	Roses/Lilies	Mr.Jos Van Der Venne	+254 722203630	info@sianroses.co.ke
Jatflora	Gilgil	Summer Flowers	James Oketch	+254 724418541	jatflora@gmail.com
Morop	Bahati	Summer Flowers	Wesley Tonui	+254-0720 983945	XX
Flora Ola	Solai		Mr.Wafula	+254-0708 382972	floraolaltd@gmail.com

THIKA -JUJA-KIAMBU: Altitude 5649 ft

ORGANISATION	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
Zena Roses	Thika	Carnations,Roses	Mr.Rakesh	+254-724-631-299	inf <mark>o@zenaros</mark> es.com
Selecta Kenya/Kpp	Juja	Cut Flowers	Mr.Wilson Kipketer	020 352557	w.keter@selectakpp.com
Pollen Sygenta Ltd.	Ruiru	Cuttings	Mr Daniel Kisavi	+254-733-603-530	Daniel.kisavi@sygenta.com
Munyu Growers	Thika	Flowers	Mr.Muthom Ngaru	+254-721-956-307	munyugrowers@gmail.com
Riverdale Blooms Ltd	Thika	Flowers	Mr.Antony Mutugi	020 2095901	rdale@swiftkenya.com
Kariki Limited	Thika	Hypericum		+254 722 50 99 19	info@kariki.biz
Transebel Ltd	Thika	Roses	Brian Wahome	+254 722 255322	brianwahome@transebel.co.ke
Enkasiti Flowers	Thika	Roses	Mr.Thambe	+254 724722039	enkasiti@gmail.com
Gatoka Farm	Thika	Roses	Christopher Gacheru	+254 733 619505	chris@gatokaflowers.com
Penta Flowers Ltd.	Thika	Roses	Mr. Tom Ochieng	+254 733625297	tom@pentaflowers.co.ke
Simbi Roses Ltd.	Thika	Roses	Ms.Pauline Nyachae	+254204448230	Pauline@sansora.co.ke
Windsor Ltd	Thika	Roses	Mr.Pardeep	+254-0674208	farm@windsor-flowers.com
Ever Flora Ltd.	Juja	Roses	Mr.Khilan Patel	0675854406	everflora@dmbgroup.com
Kenflora	Kiambu	Roses	Mr,Aleem Abdul	+254-722311468	info@kenfloraa.com
Valentine Kibubuti	Kiambu	Roses	Mrs. Suzan Maina	0203542466	info@valentineflowers.com
Red Lands Roses Ltd.	Ruiru	Roses	Mrs.Isabelle Spindler	+254-733-600504	gm@redlandsroses.co.ke
Branan Flowers Ltd.	Thika	Roses	Mr.Brian Wahome		

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

LIMURU-RUMURUTI-OLKALAU: Altitude 6024-7802 ft

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

KERICHO-ELDORET-KITALE: Altitude 6060-6995 ft

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

GROWERS IN UGANDA

	Cut Flowers	Mrs.Mercy Njuguna	254-721-637311	mercy.njuguna@pan	ocal.co.ke
NAME	PRODUCT	LOCATION	CONTACT PERSON	PHONE	EMAIL
Rosebud	Roses	Wakiso	Ravi Kumar	0752 711781	ravi.kumar@rosebudlimited.com

Maiye Estate	Roses	Kikwenda Wakiso	Premal	14/	premal@maiye.co.ug
Jambo Flowers	Roses	Nakawuka Sisia Wakiso	Patrick Mutoro	(254)726549791	pmutoro80@yahoo.co.uk
Pearl Flowers	Roses	Ntemagalo Wakiso	Raghbir Sandhu	0772 725567	pearl@utlonline.co.ug
Aurum Flowers	Roses	Bulega-Katabi Wakiso	Kunal Lodhia Shiva	0751 733 578	kunal@ucil.biz
Eruma Roses	Roses	Mukono	Kazibwe Lawrence	0776 049987	kazibwe@erumaroses.com
Uga Rose	Roses	Katabi Wakiso	Grace Mugisha	0772 452425	ugarose@infocom.co.ug
Kajjansi	Roses	Kitende Wakiso	K.K Rai	0752 722128	kkrai@kajjansi-roses.com
Uganda Hortech	Roses	Lugazi Mukono	Hedge	0703 666301	mdhedge@mehtagroup.com
Fiduga	Chrysanthemums	Kiringente, Mpingi	Jacques Schrier	0772 762555	j.scherier@fiduga.com
Royal Van Zanten	Chrysanthemum	s Namaiba Mukono	Jabber Abdul	0759 330350	j.abdul@royalvanzanten.com
Wagagai	Impatiens-Poins	tia Iwaka Bu	ıfulu Wakiso	Olav Boender	0712 727377 olav@wagagai.com
Xclussive Cuttings	Chrysanthemun	ns			

GROWERS IN ETHIOPIA

		Gayaza-Zirobwe Ro	ad Peter Benders	0 <mark>757 77770</mark> 0	pbenders@xclussiveuganda.com
NAME	PRODUCT	LOCATION	CONTACT PERSON	PHONE	EMAIL
Linssenn Flowers	Roses	Holeta	Peter Linsen	01133205668	elinsenroset@ethionet.et
Hansa flowers	Roses	Holeta	XX	+251-912507815 I	nfo@hansaflowers.com
Alliance Flowers	Roses	Holeta	M.s Navale.	0116184341	navele@nehainternational.com
Ethio Dream Rishi	Roses	Holeta		011 23 72335	holeta@jittuhorticulture.com
Holeta Roses	Roses	Holeta	Hadida mohammed.	0116184341	navele@nehainternational.com
Supra Flowers	Roses	Holeta.	Kaka shinde.	0911 353187	kakashind@rediffmail.com
Agriflora	Roses	Holeta	M.Askokan	0922 397760	flowers@ethionet.et
Ethio-Agricerft	Roses	Holeta	Alazar.	0910 922 312	alazar@yahoo.com
Addis Floracom P.L.O	Roses	Holeta	Kitema Mihret	0912 264190	tasfaw@addissflora.com
Enyi-Ethio	Roses	Sebata	Teshale	0911 464629	enyi@ethionet.et
Lafto Roses	Rosees	Sebata.	Mr Gerald	0115541485,0911202217.	laftoroses@ethionet.et
Eden Roses	Roses	Sebata		0116461443,0111572130	
Ethio-Passion	Roses	Sebata		0111561572	ethiopassion@ethiopassion.com
Golden Rose	Roses	Sebata	Sunil	0114669971.	gomba@ethionet.et
E.T Highlands	Roses	Sebata	Tim Harrap.	0911 502147	bnf2etf@ethionet.et
Sharon Flowers	Roses	Sebata		0112130595	saronfarm@ethionet.et
Selam Flowers	Roses	Sebata	Mr. Panda Rajan.	0911749181	10
Joy Tech	Roses	Debra Zyeit		0911210128	
Dugda Froliculture	Roses	Debra Zyeit	Sayalfe Adane	0911 504893	general@dugdaflora.com.et
Minaye Flowers	Roses	Debra Zyeit	Eyob Kabebe	011-9728667/8/9	minayefarm@ethionet.et
Bukito Flowers	Roses	Debra Zyeit	Anteneh Tesfaye	0911 615571	
Olij Flowers	Roses	Debra Zyeit	XX.	0911 507229	Info@olijethiopia.com
Yassin Flowers	Roses	Debra Zyeit	Tesfaye Gidisia	0911 897856	kamevision@yahoo.com
Z.K Flowers	Roses	Debra Zyeit	Mr.Zelalem	0116610798.	kf <mark>low</mark> ers@et <mark>hi</mark> onet.et
Friendship Flowers	Roses	Debra Zyeit	Edwin	(251) 911304967	friendship.flowers@yahoo.com
Evergreen Farm	Roses	Debra Zyeit	Hiwot	0912 125065	Hiwot.Ayaneh@yahoo.com
Rainbow Colours	Roses	Debra Zyeit	Ato Makonnen	0116461105.	rainfarm@ethionet.et
Sher	Roses	Ziway.	XX	0464413602	Info <mark>@s</mark> her <mark>ethi</mark> opia.com
Braam Farm	Roses	Ziway	Ben Braam	0920 746270	contact@braamroses.com
Sher Koka Farm	Roses	Ziway	Alemitu Biru	0912 097824	
Ziway Roses	Roses	Ziway	Ermiyas Solomon	0921 094373	ermiasziwayroses@yahoo.com
Herbug	Roses	Ziway	Hubb	0114414279	hubb@herbugroses.com
Aq	Roses	Ziway	Wim	0464414277	wimjr@aqroses.com
Margin Par	Hypericum	Ziway	Hayo Hamster	251 911505845	marginpar@ethionet.et
Tal Flowers	Gypsophila	Ziway		0116517394.	tal@ethionet.et
Ewf Flowers	Hydragium	Ziway	Mr. Edwin	0911508860	production-manager@ewf-flowers.com
Red Fox	Pelargoniums	Ziway		0115514966	g.symondson@ethionet.et
Abssinia Flowers	Hypericum	Ziway	Sendafa	0115540368	abssiniaflowers@yahoo.com
Ethiopia Cuttings	Geraniums	Koka		0116633073.	ethiopiacutting@ethionet.et
Florensis Ethiopia	Buding Plants	Koka	Netsanet Tadasse	0116525556.	flrensis@ethionet.et
Maranque	Crysenthemums	Merjetu	Mark Drissen	(251) 221190750	md@maranqueplants.com
Freesia Ethiopia	Freesia & Statice	Sebata	Ronald Vijverberg	(251) 115156259	freesia@ethionet.et
Yelcona	Hypericum	Sebata	Andreas 0921 146930	Andreasndieolens@l	notmail.com



FRUITS, HERBS AND VEGETABLE FRUITS IN KENYA

COMPANY	LOCATION	PRODUCT	CONTACT PERSON	PHONE	EMAIL
AAA Growers	Nairobi	Horticulture	Mr.Neville Ratemo	020-4453970-4	admin@aaagrowers.co.ke
Belt Cargo Services Export	Ltd	Nairobi	French Beans	Mr.J.Muigai	020-44488 <mark>21 bcs@beltcargo.com</mark>
Best Grown Produce(K)Ltd		Mr.Paul Mugai		020-4448821	bestgprod <mark>uce@yahoo.com</mark>
Chirag Kenya Ltd	Nairobi	Spces & Herbs	Sales Team	254-203573000	naturesown@swiftkenya.com
Canken International Ltd	Eldoret	Chillies & Fruits	Mr.Mohamed	020-222736367	canken@cankencargo.com
Darfords Enterprises Ltd	Nairobi	Vegetables	Mr.Abdul	254-206622857	abdulkarim@darfords.co.ke
Delmote Kenya Ltd	Thika	Fruits	Sales Manager	020-672141600	nanasi@freshdelmonte.com
Pj Dave Epz Ltd	Nairobi	Dried Herbs & Roses	Import & Export Manager	020-3542012	pjdaveflowers@wananchi.com
Dominion Vegfruits Ltd	Nairobi	Fruits & Vegs	Mr.John Mairura	020-823002	vegfruits@wananchi.com
East African Growers Ltd	Nairobi	Fruits & Vegs	Mr.Peeush Mahajan	020-822034/25	peeush@eaga.co.ke,george@eaga.co.ke
Equitorial Nut Processors Ltd	Nairobi	Macadamia Nuts	Sales Managers	020-2030196	gatua@equatorialnut.co.ke
Everest Enterprises Ltd	Nairobi	Fruits & Vegs	Mr.John Karuga F	020-3542009	smuhoho@everest.co.ke
Fian Green Kenya Ltd	Nairobi	Fruits & Vegs	Mr.Francis Thuita	020-826157	info@fiangreens.co.ke
Fresh and Juice Ltd	Nairobi	Fresh & Vegs	Ms.Maleka Akaberali	020-826090	maleka@freshanjuici.co.ke
Fresco Produce Ltd	Nairobi	Vegetables	Mr.Charles Mbugua	254-0722-764395	mbugua@freshproduce.co.ke
Frigoken Ltd	Nairobi	Fruits & Vegs	Mr.D.Karim	020-2391717	frigoken@africaonline.co.ke
From Eden Ltd	Nairobi	Vegetables	Mr.Zulfikar Jessa	020-8562203	roy@from-eden.com,zul@tilleygroup.com
Global Fresh Ltd	Nairobi	Vegs & Fruits	R.Chaudhry	020-82749/50	info@globalfresh.co.ke
Green Kenya Organization	Nairobi	Onions & Tomatoes	Charles Butiko	254-723119111	greenkenya28@gmail.com
GreenLands Agro Producers Ltd	Nairobi	Fruits & Vegetables	Mr.G.Murungi	020-827080/1/2	murungim@greenlands.co.ke
Highlands Canners Ltd	Nairobi	Fruits & Vegetables	Sales Manager	020-8564048	info@highlandcanners.co.ke
Hillside Green Growers Ltd	Fruits & Vege	tables	Ms.Eunice Mwongera	020-2397353	eunice@hillsidegreen.com
Homegrown Kenya Ltd	Nairobi	Flowers & Vegetables	Mr.Richard Fox	020-3873800	richard.fox@f-h.biz
Indu Farm Epz Ltd	Nairobi	Vegetables	General Manager	254-20-550215/6	info@indu-farm.com
Jakal Services Ltd	Mombasa	Fruits & Spices	Mr.Bandali	254-7412229435	jakal@ikenya.com
Jungle Macs EPZ Ltd	Thika	Fruits & Vegetables	Sales Manager	020-2451841	info@junglemacadamias.com
Jetlak Foods Ltd	Ruiru	Fruits & Vegetables	XX 254-722754181	mail@jetlak.com	
Indu Farm Epz Ltd	Nairobi	Fresh Fruit & Vegetables	Mr.Christian Bernard	020-550215/6/7	info@indu-farm.com
Kakuzi Ltd	Thika	Fruits,Nuts,Tea	Mr.Richard Collins	060-2033012	rcollins@kakuzi.co.ke
KHE (1977) Ltd	Nairobi	Fresh Fruit & Veges	Mr.Manu Dhanani	020-2517979	khe@khekenya.com
Kandia Fresh Produce Suppliers Lt	d	Nairobi	Fruits & Vegs	Ms.Lucy Mundia	020-3500866 kandia@swiftkenya.com
Kenya Orchads Ltd	Nairobi	Fruits & Vegetables	Sales Manager	254-2054161	
Keitt Exporters Ltd	Nairobi	Fresh Fruit & Vegs	Asif Aman	020-822829	asif@keitt.co.ke
Mace Foods Ltd	Eldoret	Vegetables	Sales Manager	254-720391290	info@macefoods.com
Mugama Farmers	Murang'a	Vegetables	Sales Team	254-728-358211	mugamaunion@yahoo.co.uk
Makindu Growers and Packers Ltd	Nairobi	Passion Fruit	Mr.O.P.Bij Okra	020-822812/196	infoa@makindugrowers.co.ke
Meruherbs		Organic Producers	Marketing Manager	254-20-4442081	meruherbs@meruherbs.com
Muount Elgon Orchard Ltd	ł	Kitale	Orchards	Bob Andersen	254-5431352 info@mtelgon.com
Mboga Tuu Ltd	Nairobi	Chillies & Vegetables	Mr.J.Kent	020-3877988	mtl@wananchi.com
Mixa Foods and Beverages	Kisumu	Fruits & Milk	Charles O.Odira	254-733-714584	info@mixafoods.co.ke
Mosi Ltd	Juja	Fruits	Rose Wahome	254-722204911	mwaiwahome@mosiflowers.com
Migotiyo Plantations Ltd	Nakuru	Herds & Seed	Mr. Rao	051-2214898	alphegasisal@wananchi.com
Namelok Exotic (K) Ltd			Mr. Sinkeet	0724-743258	info@namelokexotic.com
Njambiflora Ltd		Vegetables	Njambi	020-822506/7	njambiflora@yahoo.co.uk
Nicola Farms Ltd	Nanyuki	Fresh Fruit & Vegs	Ms. Grace Wanjiku	020-2048874/76	marketing@nicol <mark>a.co.ke</mark>
Olivado Kenya EPZ Ltd	Nairobi	Avocado	Nairobi General Managers	020-710-535303	gh@tanlay.com
Saw Africa EPZ Ltd	Thika		General Manager	254-722531106	wainana_patrick@yahoo.com
Sacco Fresh Ltd	Nairobi	French Beans	Mr.Muia	020-824687/8	info@sacco-fh.com
Shree Ganesh Ltd	Nairobi	Vegetables & Onions	Mr. Kanji Kalyan Pate <mark>l</mark>	020-80243645	meleka@freshanjuici.co.ke
Sian Agiflora Kenya Limited	Nairobi	Calla Lillies	Ms. Angelina Mangat	020-822220	rano@sianexports.com
Syngenta EA Ltd	Nairobi	Seeds	Sales Manager	254-203222800	synjenta.east_africa@synjenta.com
Sunripe (1976) Ltd	Nairobi	Fresh Fruit & Vegs	Mr. Hasit Shah	020-822518/822879	info@sunripe.co.ke
Value Pak Foods Ltd	Nairobi	Fruits & Vegetables	Mrs. Patel	020 2695633	valuepak@wananchi.com
Valentine Growers Co Ltd	Kiambu	Vegetables	Sales Team	254-720203765	info@valentine-flowers.com
Vegpro Kenya Ltd	Nairobi	French Beans	Mr. Bharat.Patel	020-822831-4	bharat@vegpro-group.com
Wamu Investments Ltd	Nairobi	Fresh Fruit & Vegs	Mrs. Peris Muriuki	020-822441	peris@wamu-investments.com







ROOTEX®
Rooting Hormone for use on woody & herbaceous cuttings







Description: ROOTEX® is a rooting hormone for use in stimulating the formation of roots on woody and herbaceous cuttings on Roses and Carnation by dipping

Mode of Action: A plant hormone of the auxin family which effects cell division and elongation stimulating the formation of roots.

ROOTEX® works with difficult softwood and semi-hardwood cuttings of deciduous plants and evergreens. They will root faster and with a much higher success rate.

In propagation, ROOTEX® provides a full complement of the essential hormones needed to rapidly initiate root cell formation. In this vital stage of root development, these hormones remain right where they are needed most, at the cut.

User Instructions:

- Choose healthy and vigorous cuttings, according to the recommended practice for each plant.
- 2. If cuttings are not vigorous or fresh, put them in moist condition.
- 3. Dip lower part of the cuttings in the ROOTEX® powder.
- 4. Remove overdose residues by shaking the cuttings in the container.
- 5. Plant in rooting substrate.

Pack Sizes: 50g & 1Kg

CALL OUR TOLL-FREE LINE: 0800 724 211













